Internet Addiction among Cyberkids in China: Risk Factors and Intervention Strategies

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ABSTRACT

In about one decade and a half, Internet addiction has undergone a remarkable metamorphosis, from psychiatric curiosities to publicly recognized emergencies. As a country with the largest absolute number of Internet users in the world, China provides an interesting context to study this issue. The forming process of Internet addiction as an emerging risk in the Chinese context is of great research significance theoretically and practically, not only because Internet addiction is becoming a prominent issue in both China and many other societies, but also because it may act as a good case to study risk issue related to new media technologies, health and everyday life. Although there is a heated controversy over this issue, there are few academic studies depicting the ongoing formation of Internet addiction as a new health risk in broad social contexts. This research filled the gap. Focusing on the two essential factors of the construction of risk, this research proposed the research questions revolving around the staging of and the coping with Internet addiction in China. A multi-method approach was adopted and the data were gathered by both quantitative and qualitative methods. Content analysis was conducted to depict the newspaper reportage of Internet addiction from 1998 through 2009. The overall trend of reportage was depicted as well as relevant variations of the reporting frames. The coping was explored based on the data collected in Addiction Medicine Center (AMC) located in Beijing. Secondary data analysis was adopted to examine the high-risk group (N = 618). Furthermore, ethnographic methods were used to

investigate the signs and treatments of Internet addiction. Systematic remedial practices were provided in AMC for new family-making, which helped the in-patient children get recovered, maintain the therapeutic effects, and reduce relapse after discharge. Therefore, this research examined both the individual level and broader social levels of the process, and attempted to explain the linkages between the two. The findings further enrich the Internet addiction literature, and are valuable for prevention, treatment and recovery of Internet addiction. The results can be used for future studies of other subpopulations or within other social contexts.

Keywords:

Academic performance, diffusion of innovation, family communication, frames, Internet addiction, Internet connectedness, online gaming, personality, risk/problem behavior, psychological well-being.

論文摘要

在過去的大約十五年間，網癮經歷了顯著的演變，從精神病學的科研興趣逐漸發展成為大眾公認的緊急事件。作為一個擁有世界上絕對線民數量最多的國家，中國為網癮研究提供了一個有趣的研究背景。探析在中國語境下網癮發展成為一種新興風險的演進過程具有非常重要的理論和現實意義，這不僅是因為網癮在中國和其他許多國家成為一項日益突出的議題，也是因為它可能成為研究與新媒體技術、健康和日常生活相關的風險議題的有益個案。儘管關於網癮這一話題一直有著激烈的討論，卻鮮有探討在社會語境中網癮如何逐漸發展成為一種新興的健康風險的學術研究。本研究旨在填補這一空白。為了集中探討風險形成過程中的兩大重要因素，本研究提出的研究問題集中在網癮的呈現與網癮的應對兩方面。本研究採用了多重維度的研究方法，通過量化和質化研究方法獲取研究資料。內容分析用來研究 1998 年到 2009 年間的報紙中關於網癮的報導。研究描繪了報導的整體趨勢以及報導框架方面的相應演變。關於網癮應對方面的研究是基於在北京某醫學成癮科所獲得的資料的基礎上展開的。二手資料分析被用於探析網癮的高危人群（樣本量為 618 人）。而人種志學的研究方法則被用來分析網癮的症狀與治療。本研究中的醫學成癮科提供了系統的治療措施旨在建立新型的家庭環境，從而幫助住院治療的孩子恢復健康，更好地保持療效和減少出院之後的復發情況。因而，本研究既分析了個體層面，也探討了較為宏觀的社會層面，並試圖建立微觀層面與宏觀層面之間的聯結。本研究的發現進一步豐富了網癮相關文獻，並對網癮的預防、治療和康復有著積極

的價值。這些研究結果還可以應用于未來對於其他人群和其他語境下的網癮研究。

關鍵字

創新與擴散、風險/問題行為、家庭溝通、框架、人格、身心健康、網路連通性、網遊遊戲、網癮、學習表現。

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CHAPTER ONE

RESEARCH OVERVIEW

1.1 INTRODUCTION

In about one and a half decades, Internet addiction has undergone a remarkable metamorphosis, from a psychiatric curiosity to a publicly recognized health risk. In current China, public concern has been caused by extensive media coverage on this issue, and an increasing number of Internet addiction clinics opened in urban area nationwide. People's daily Internet use seems to be brought under social scrutiny and professional intervention. Therefore, the forming of Internet addiction as an emerging health risk in China is of great research significance theoretically and practically, not only because Internet addiction is becoming a prominent issue both in China and in many other societies, but also because it may act as a good case to study risk issue.

As research overview, this chapter is organized as seven sections. Following this introductory section, Section 1.2 presents research objectives and Section 1.3 discusses the theoretical framework developed for this research. Section 1.4 explains research methodology, and Section 1.5 highlights justification and contribution of this research. Section 1.6 states the plan of this dissertation, and Section 1.7 provides summary of the chapter.

1.2 RESEARCH OBJECTIVES

The emerging risk of Internet addiction has commanded increasing public attention and triggered heated debates, however the development of Internet addiction, due to its complex nature, requires more systematic empirical and theory-based academic research (Byun, Ruffini, Mills, Douglas, Niang, Stepchenkova, Lee, Loutfi, Lee, Atallah, & Blanton, 2009). The primary purpose of this research was to provide a detailed picture of Internet addiction as a new risk in the Chinese context. Based on literature in risk theory and analysis, this research aimed to examine the staging of and the coping with Internet addiction. Therefore, both the overall situation at the macro level and the high-risk groups at the individual level were investigated. Treatments for Internet addiction were also discussed.

Specifically, this research has three objectives: (1) To depict the staging of Internet addiction as an emerging risk in media coverage; (2) To evaluate the profile of high risk group, identify predictors of Internet addiction, and examine the relationship between Internet addiction and other risk/problem behaviors, as well as the relevant social and psychological well-being variables; and (3) To explore and discuss the treatments for Internet addiction in clinical settings.

1.3 RESEARCH FRAMEWORK

The conceptual framework for this research is presented in Figure 2.1. This theoretical framework is based on the relevant literature on risk in general and Internet addiction in particular, which is reviewed in Chapter 3 of this dissertation.

The literature dealing with risk issue indicates that the staging and the coping are the two essential factors in the construction of risk (Beck, 1992). As for the staging of risk, mass media can increase consciousness of risk and set alarm bells ringing (Beck, 2009). Referring to the coping, not only high-risk groups but also other relevant social agencies are involved, such as family and professional institutions. It is especially true for Internet addiction, since some Internet users may still lack awareness-knowledge of the risk and many Internet-dependent users are adolescents and young adults. Accordingly, research questions were proposed and corresponding studies were conducted to answer them.

1.4 RESEARCH METHODOLOGY

Based on the conceptual framework developed for this research and the literature reviewed, both quantitative and qualitative research methods were adopted for data collection and analysis. In particular, a combination of three interrelated studies were conducted based on multiple methods in conjunction with one another.

Firstly, content analysis was conducted to examine the newspaper reportage of Internet addiction in Mainland China. Newspaper articles were retrieved and examined to reveal the trend and variations over time.

Furthermore, instead of recruiting respondents from Internet users in general, clinical data of the high-risk group were retrieved for analysis. The secondary data offered specific source of information regarding the Internet-dependent young people, which was quite valuable to identify influential factors.

Finally, as for treatments, the research question can be best answered through in-depth analysis of observations, interviews, and documents with individuals who have the particular experiences (Barker & Charvat, 2008). The researcher went to live in the research environment for months and collected data by observing and interviewing relevant informants and respondents. The findings came from analyzing what people said and by observing what they did in the clinic. Interpretations were supported by weaving quotes from the informants and relevant literature (Barker & Charvat, 2008).

1.5 JUSTIFICATION AND CONTRIBUTION OF THIS RESEARCH

This research attempted to fill a gap in previous research and provide insights for both theory building and practical actions.

Although much research has been undertaken on Internet addiction, the overall process of promoting the idea of Internet addiction in a specific historical and geographic context has rarely been studied. By investigating both the staging of and the coping with Internet addiction, this research can further enrich this burgeoning research area. Moreover, the study of Internet addiction as an emerging risk also provided an interesting case to address risk issue, which usually appears very abstract in the risk literature. Broadly, this research followed the tradition of media effects by examining the negative outcomes of new media, hence, the findings may contribute to communication research in general as well as newspaper reportage and family communication in particular.

Practically, the findings of this research may facilitate the prevention, treatment and recovery of Internet addiction in China and even other social contexts. With more awareness and knowledge of Internet addiction as an emerging health risk, people can adjust their use of the Internet for more benefit and less harm. Therefore, the findings can offer insights for parents, educators, professionals, and policy makers.

1.6 PLAN OF THE DISSERTATION

The research subject of Internet addiction as an emerging risk runs through the whole research, and is explored in three interrelated studies. In total, this dissertation consists of eight chapters. Contents of the chapters are as follows: Chapter 1 provides a research overview. Chapter 2 reviews the relevant literature and raises the research questions accordingly. Chapter 3 discusses the research background and detailed justification for the research. Chapter 4 presents an overview of relevant research methodology with discussion of rationale and basis of the methods used in this research. Chapter 5, Chapter 6 and Chapter 7 analyze the data collected in this research. Specifically, the first research question is addressed in Chapter 5, which is the content analysis of media coverage on Internet addiction in China. The second research question is examined in Chapter 6, which examined those variables associated with Internet addiction based on secondary data retrieved for this research. Treatment for Internet addiction as the third research question is the focus of Chapter 7. Finally, Chapter 8 recapitulates the thematic spectrum of this research in terms of

discussion, theoretical contributions, practical implications, limitations and suggestions for future studies

1.7 SUMMARY

This chapter provided the research overview of the whole dissertation. The chapter met its objectives by providing the research objectives, conceptual framework, research methodology, as well as justification and contribution of this research. Based on these, the research plan of the dissertation was also presented.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter One presented a research overview of this dissertation. This chapter offers an overall review on the relevant literature of this research, a theoretical framework and the research questions are proposed based on the related literature reviewed.

With a sixteen-year research history internationally, the influence of Internet addiction as an emerging health risk is in no way diminished. Although Internet addiction as an issue has received great amount of attention, previous research has few well-established common conceptualizations and little guidance (Byun et al., 2009). Another frequently noted deficiency is the failure to incorporate social process into the dynamics of the disorder (Scheff, 1984). Therefore, previous studies cannot totally encompass the underlying structure of the term "Internet addiction". Moreover, studies conducted to understand how Internet addiction works as a health risk have been scarce. Thus, a gap exists in the literature concerning risk debate in general and Internet addiction research in particular. This research fills the gap.

Current risk debate in social science and a concern to theorize social representations and the coping of risk become one of the central preoccupations of contemporary sociological research. In spite of significant research undertaken in this field, "priority is given to interpreting the wider cultural and/or political meanings of risk" upon society, and it is possible to find other forms of sociological inquiry into

risk issues (Wilkinson, 2010, p. 59). It means that more risk research is in need to grasp "how specific technologies are lived as future-creating social praxis" and how "particular risks are experienced, perceived, defined, mediated, legitimated, and/or ignored" as a matter of everyday social routine (Adam & Van Loon, 2000, p. 6), which need to be tested through case studies (Beck, 2009). Internet addiction might be such a case to illustrate the ongoing formation of risk in the Chinese context.

The purpose of this chapter is to provide a literature review of previous research on Internet addiction in particular and the theory and analysis of risk in general. This chapter also discusses the staging of and the coping with Internet addiction as a new health risk. On the basis of related literature reviewed in this chapter, a conceptual framework and three clusters of research questions are developed for this research. The theoretical framework makes possible not only the case study of Internet addiction as an emerging health risk, but also the concrete historical-empirical analyses of the related risk definitions and people's perceptions.

2.2 REVIEWING INTERNET ADDICTION LITERATURE

Internet addiction has become a growing field of research in recent years. The term of "Internet addiction" was born in the United States, and has called international attention from both the industrially advanced sectors and the developing countries. This section gives a brief review on Internet addiction as the main theme of this research. Subsection 2.2.1 provides a brief history of Internet addiction; and Subsection 2.2.2 discusses the current situation of empirical research on Internet

addiction. Subsection 2.2.3 presents a summary of Section 2.2.

2.2.1 A brief history of Internet addiction

The term "Internet addiction" was born in the United States. It is the psychiatrist Goldberg who first coined this term and proposed it as a disorder in a satirical hoax in 1995 (Goldberg, 1995), however, at that time he did not expect so many people would take it as a serious problem. The first empirical study on Internet addiction was conducted by Young in 1996, a pioneer and the leading proponent in this field (Young, 1996, 1998a, 1998b). Since Young's first work, Internet addiction disorder has received attention from multiple disciplines. The literature revealed Internet addiction has grown rapidly under various names, including pathological Internet use, Internet addicted disorder, Net addiction, high Internet dependency, cyberspace addiction, online addiction, etc. Among these terms, Internet addiction disorder (IAD) is the most popular one (Byun et al., 2009).

Although many societies have witnessed increasingly treatments and clinics coping with this new plight, there is still a heated controversy questioning the existence of Internet addiction disorder. Born sixteen years ago, Internet addiction has still not gotten the official validation, even in the U.S., its birthplace. Internet addiction is now under the consideration of the upcoming fifth version of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-V*), but has not yet made the grade (Miller & Holden, 2010). Nevertheless it will be listed in the appendix, which is a catch-all category for disorders which do not meet the criteria

for a full-fledged diagnosis (Holden, 2010).

2.2.2 A review of Internet addiction research

Broadly speaking, addiction refers to a "compulsive, uncontrollable dependence on a substance, habit, or practice to such a degree that cessation causes severe emotional, mental, or physiological reactions" (Byun et al., 2009, p.204). Traditionally, the concept addiction is reserved for bodily and psychological dependence on a physical substance, while recent research has argued that addiction should be widened to cover a broader range of behaviors (Lemon, 2002; Orford, 2001; Shaffer, 1996). Some scholars argue that Internet addiction may eventually follow pathological gambling into *DSM*, as more information has been revealed about the neurobiology and genetics (Holden, 2010).

Griffiths (1996) proposed Internet addiction as a kind of technological addiction, a subset of behavioral addiction, which is non-chemical in nature. Some researchers argue that individuals whose Internet use seems to be out of control show many hallmarks of addiction such as tolerance and withdrawal (Holden, 2010). Hence, some researchers have adapted substance use disorder, while others have utilized the criteria for diagnosing behavioral impulse-control disorder, such as pathological gambling, resulting in an inconsistent conceptualization of Internet addiction. Therefore, previous studies on Internet addiction have used inconsistent criteria (Byun et al., 2009).

Current Internet addiction research can be divided into two main domains, which

are the diagnostic criteria requited to fit Internet addiction disorder, and the individuals suffering from it (Byun et al., 2009). Most of the studies developed the Internet addiction scale by adapting the criteria from the *Diagnostic and Statistical Manual of Mental Disorders-IV* (*DSM-IV*), the most frequently used manual for the diagnosis of mental disorders. The most popular one is Young's (1998a) eight-item Internet addiction *Diagnostic Questionnaire* (*DQ*). Based on *DSM-IV*, the cutoff score of five is consistent with that of pathological gambling (Young, 1998a). Questions were based on a typical list used to diagnose gambling addiction and focused on whether respondents used the Internet to escape their problems and felt anxiety when they could not go online (Tarpley, 2001). Although this instrument has the advantage of simplicity and ease of use, it cannot cover all the antecedents of Internet addictive behaviors, nor does it provide a clearer understanding of the issue (Byun et al., 2009).

Studies on Internet addiction are primarily concerned with the antecedents of Internet addictive behaviors and characteristics making an individual more susceptible to becoming an Internet addict, such as risk/problem behaviors, Internet dependency, psychological distress, and the degree of self-control. They are viewed as the actual causes of rather than the underlying dimensions of Internet addiction disorder (Byun et al., 2009). This may have severe limitations that they are only symptoms of Internet addicted behaviors rather than parsimonious items of diagnosis. Some scholars also argue that people hooked on the Internet may suffer primarily from afflictions such as depression, personality disorders, and substance addictions

(Holden, 2010).

Previous studies on Internet addiction focused on the younger generation, and mainly used high school and university student samples. Although young people may be at the point in the life cycle more vulnerable to harmful addictive agents, students may not be reflective of the entire population of Internet users, and these studies also suffered from the problem of small sample sizes (Byun et al., 2009). Therefore, more and more scholars have realized the need for stricter and more conservative judgment and measurement.

Meanwhile, there are more researchers trying to investigate Internet addiction in non-Western societies, reworking scales to suit different cultural specific circumstances. As for Internet addiction research, Korean scholars are active in this field within Asian area (e.g., Kim, Ryu, Chon, Yeun, Choi, Seo, & Nam, 2006; Whang, Lee, & Chang, 2003; Yoo, Cho, Ha, Yune, Kim, Hwang, Chung, Sung, Lyoo, 2004), followed by Taiwan (e.g., Chou & Hsiao, 2000; Lin & Tsai, 2002; Tsai & Lin, 2001) and Hong Kong (e.g., Leung, 2004; Shek, Tang, & Lo, 2008). Mainland China has also witnessed a boom in Internet addiction research.

China was among the earliest to set up clinics, and the diagnostic criteria released in 2008 put it at the forefront of this growing field. China even plans to lead the effort by registering Internet addiction with the World Health Organization (Macartney, 2008). Dr. Ran Tao, who proposed the criteria, claimed that there was a sufficient sample of patients to carry out proper scientific analysis (Macartney, 2008). Tao's criteria echo Young's (1998a) eight-item Diagnostic Questionnaire, based on

the criteria for pathological gambling in *DSM-IV*.

2.2.3 Summary

Related literature reviewed in Subsection 2.2.1 and Subsection 2.2.2 suggested that Internet addiction has commonly been viewed as a broad research topic. Although Internet addiction has received great attention, there are few common conceptualizations and little guidance currently (Byun et al., 2009).

In sum, mainstream studies on Internet addiction are from the individual perspective, which basically suggests two questions: what are the causes, and how can they be stopped (Scheff, 1984). However, there is still no consensus on what constitutes so-called Internet addiction (Holden, 2010). Previous studies on Internet addiction have used inconsistent criteria and scales which have not been standardized for measuring Internet addiction across cultural perspectives (Byun et al., 2009).

Most of the previous studies assume and prove the existence of Internet addiction, while few studies (e.g., Suratt, 2006; Surratt, 1999) has questioned its existence, such as Suratt's (2006) study looking at Internet addiction, which she called "Netaholics", from symbolic interaction approach. One frequently noted deficiency is their failure to incorporate social process into the dynamics of the disorder (Scheff, 1984). Therefore, they cannot totally encompass the underlying structure of the term.

2.3 INTERNET ADDICTION AS AN EMERGING HEALTH RISK

Initially, Internet was regarded as a technological wonder, and Internet usage was not

a moral, legal, or medical issue, as it appears today. However, with problems such as Internet addiction as an emerging health risk, Internet use and online behaviors have become regulated by social arrangements over time, just like many communication technologies before the Internet. Norms governing personal Internet use and online activities are associated with social factors, both historically and anthropologically (Vogler, 1993). This section reviews related literature on the ongoing formation of Internet addiction as a new and emerging health risk, with Subsection 2.3.1 discussing it from historical perspective, and Subsection 2.3.2 from cross-cultural perspective. Subsection 2.3.3 provides a summary.

2.3.1 Historical perspective

Technological advancements in communication almost always have both positive and negative repercussions (Tarpley, 2001), bringing about utopian optimism and scare stories (Joinson, 2003). Internet and those communication technologies before it, without exception, have similarly been associated with deviant behaviors, crime, and generally negative impact on individuals and society. One typically panicked reception of new media technologies is the fear of their ill effects on social relationships and identities (Slater, 2002). A paradigmatic orthodoxy also pervades these assumptions of panic is that mediated communication is substitute for face-to-face (FTF) interaction (Sundar, 2008). Compared with face-to-face interaction, as the gold standard, mediated communication is regarded as an artificial substitute for something more "real" (Joinson, 2003). The whole process repeats

itself with respect to the Internet. Therefore, when investigating Internet addiction, researchers should look not only at the present, but also the past (Joinson, 2003).

Historically, there have been many panic perceptions of the media experience revolving around a broad range of media, including books, comics, radio, television, video games, etc. (Kunkel & Wilcox, 2001). Public concerns have been expressed about pornographic books, yellow tabloids, Page Three girls, the Martian panic generated by the radio adaptation of Wells' novel *War of the Worlds*, violent programming, and so on.

The Internet may be new, but regardless of the technologies involved, there are striking similarities between the Internet and those old "new media", which can date at least to the earliest years of television (Kunkel & Wilcox, 2001). The physical inactivity common in television watching is assumed to imply mental and cognitive inactivity (Bickham, Wright & Huston, 2001). Similarly, the Internet is regarded as a vicarious paradise, leading the couch potatoes to become the mouse potatoes (Young, 1998b). Another question is whether exposure to violence and aggression in the media will have an anesthetizing effect and desensitize people to aggressive behaviors and violence (Bickham, Wright & Huston, 2001). Based on the previous television and video game studies, some scholars assume that the same holds true for the Internet (Subrahmanyam, Kraut, Greenfield & Gross, 2001).

Another question addressed to the new media is about the ways how the new technologies reshape personal relationship, and whether or not they are so impoverished as to render them unfit for sociality, compared with face-to-face

interaction, as a normative standard (Baym, 2002). It is essentially along with similarly utopian/dystopian predictions of the social impact of a new medium (Joinson, 2003). Although the Internet provides new forms of mediated-communication that are historically experienced as "virtual" (Slater, 2002), the same pattern has been repeated for the Internet. The rate of message exchange is argued to be lower than face-to-face interaction, because most online communication is type-based. Therefore online interaction has been regarded to have less interpersonal closeness, which can lead to many negative effects (Joinson, 2003).

People spend great amount of time having real-time interactions, such as chat rooms, discussion forums, and online games, primarily because of the capacity of Internet for socialization. However, the networking capabilities of Internet can also cause social isolation and functional impairment of people's daily lives (Byun et al., 2009). Concerns have been expressed that the Internet may come to dominate people's lives and their interests. Excessive Internet use has been considered problematic, and has been associated with declines in communication with family members, declines in the size of a person's social circle, and increases in loneliness and depression (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998). With so many health risks associated with problematic Internet use, Internet addiction has become a modern syndrome (Leung, 2008).

Historically, it might not be something specific about the Internet that encourages deviance and antisocial behaviors. However, it seems to be a prevalent assumption that the Internet, or mythologized as cyberspace, is unique and revolutionary (Slater,

2002), which makes Internet use more addictive or dependence-forming. This assumption actually follows the technological determinist approach, which can be divided into two main sub-groups: cues filtered out and self-focus approaches (Joinson, 2003). The former predicts a loss of "socialness" which may lead to deregulated, depersonalized, de-individuated and uninhibited communication, and the latter predicts to changes in self-focus which may have some psychological and behavioral effects (Joinson, 2003). Young (1997) argues that three aspects of the Internet make it potentially addictive, namely anonymity, convenience and escape. The anonymity on the Internet makes it particularly attractive for people to escape from everyday problems. Convenience refers to the ease of access and its affordability. Disembedding is another obvious feature of online communication which associated with textuality and anonymity (Slater, 2002). Disembodiment signifies that a person's online identity is apparently separate from his physical presence. Therefore, going online seems to detach one not only from the place, but also from the body (Slater, 2002). Arguments of this kind emphasize a radical disjuncture between online and offline identities and relationships.

Two obvious fallacies arise from these models, which are technological determinism by focusing on the attributes of the Internet, and assumption that the Internet is a unified phenomenon (Slater, 2002). Actually, different types of communication on the Internet have quite different affordances and structural characteristics (Joinson, 2003). Some researchers also argue that it is not the Internet but the content, mainly sex, gambling, and games, that is the issue (Holden, 2010).

The Internet is still in such a formative and rapidly evolving stage of development that research on the effects of the Internet may be also limited by the relative infancy of the technology itself (Tarpley, 2001).

2.3.2 Cross-cultural perspective

Cross-cultural comparisons demonstrate that there are no universal standards of adaptive and maladaptive patterns of Internet use (Leung, 2008). As a new medium introduced into a society, the Internet has certainly brought about changes. However, when examining the Internet with a culture, the changes are evaluated differently within different social contexts.

As for the Internet growth, there are still fundamental disparities between regions both around the world and within Mainland China. These regional disparities are also reflected in the profiles of Internet users, who are still overwhelmingly located in big cities. Due to the digital divide, people in different social contexts may have quite different Internet connectedness (Jung, Qiu & Kim, 2001; Loges & Jung, 2001). Internet addiction may sound like exotic stories for those in remote areas with no or limited Internet access (Giese, 2003), basically out of their agenda.

Although there is a sixteen-year research history internationally, Internet addiction is still not officially validated as a disease in clinic practice, even in the United States, its birthplace. Neither the American Psychological Association nor the American Psychiatric Association currently recognizes Internet addiction as a diagnosable disorder (Tarpley, 2001). Previous studies on Internet addiction have used

inconsistent criteria, therefore some scholars propose that it is necessary to define overuse and to differentiate Internet addiction from obsession, compulsion, and self-medication for depression or other disorders (Byun et al., 2009). Some argue that the heavy use of the Internet may in fact be a natural development behavior among the young, and interpretation of the findings should be conducted with caution (Leung, 2008). In June 2007, the American Medical Association committee backed away from its own recommendation which suggested the American Psychiatric Association to formally include Internet addiction disorder in *DSM-V*, the next (2012) edition of the *DSM* (Grohol, 2007).

However, defining Internet addiction as a new health risk seems to have gained its legitimacy in China, with the released diagnostic criteria of Internet addiction as a mental illness in 2008 further paving the way. The government tries to regulate the Internet and peoples' Internet use with different kinds of ways. For example, no Internet cafés or games' labs are allowed to be opened within 200 meters around schools, strict licensing procedures, control of the business hours, restrictions of minors' entry into Internet cafés, and installation of the anti-addiction system and anti-fatigue software (Tao, 2007). The effectiveness of such moves is debatable, but they undoubtedly enable legislators to show that they are doing something about seemingly intractable social problems (Buckingham, 2002). In 2007, Internet addiction as an issue has been included in *the Law of the People's Republic of China on the Protection of Minors* (Tao, 2007). As one of the first clinics treating Internet addicts, Tao's centre now is also supported and co-operated by the Beijing municipal

government. Currently, more and more research projects, therapeutic clinics, psychiatric counseling centers, and self-help groups have mushroomed in urban China.

Stemming from the concerns about the negative effects of the Internet, such as Internet addiction, are policies of regulators and beliefs of the public. There is a wide-ranging debate over the impact of the Internet across the spectrum of public policy (Hughes & Wacker, 2003). Facing the emerging risk of Internet addiction, governments have increasingly recognized that the diffusion of technology cannot be left to market forces and that regulation and intervention are required (Buckingham, 2002; Wacker, 2003). Regulation of the Internet becomes an issue which has been widely discussed. The nation-states "tend to accept the need for control when it comes to issues like the dissemination of (children) pornography, racism, the instigation of violence, rightist extremism, and hate speech" (Wacker, 2003, p.59), in authoritarian and liberal-democratic states alike.

2.3.3 Summary

Different from the mainstream studies in the field, this study treats Internet addiction as an emerging health risk, which is formed historically and socially. Although positive potential has been renowned, concerns continue to mount regarding problematic Internet use. The Internet has been condemned to provide a potentially intoxicating experience to seize and hold captive people's attention. The very term "Internet" becomes a garbage can, "a receptacle for both fame and infamy relating to

any electronic activity or societal change" (Wellman & Haythornthwaite, 2002, p.4), while it is certainly not specific to the Internet. The Internet may be still in its infancy, but things can be learnt from the history and evolution of other media, and the policy decisions, which are made now, are apt to affect its future (Paik, 2001). Among all the behavioral addictive traits of different media, the Internet stands out for its relevance to the future and its delivering potential to millions as access to the Internet rises globally (Wellman & Haythornthwaite, 2002). Thus, Internet addiction should be examined with cross-cultural perspectives as well.

2.4 THE THEORY AND ANALYSIS OF RISK

To depict the research backdrop for examining Internet addiction as a new health risk, this section reviews the relations of risk, technology, health and everyday life, as well as the research traditions of risk analysis. Arguably, individuals are now living in an age of risks, which are socially, spatially and morally different in order and in consequence to those faced by previous generations (Wilkinson, 2010). The rise of risk debate has become a focus in sociological research. There is a large body of studies devoted to the risks in many fields. As the focus of this research, Internet addiction is such an emerging risk related to new media technologies, health and people's daily life. The section is divided into four subsections: discussion of risk, technology, health and everyday life, with special attention paid to young people's media use (Subsection 2.4.1), mapping of the conceptual terrain of risk research (Subsection 2.4.2), which is then followed by a summary of the section in Subsection

2.4.3.

2.4.1 Risk, technology, health and everyday life

Experiences of risk have been identified as "the signature tune of our times" (Wilkinson, 2010, p. 7). The endless chain of recent world events in reality and in mass media, including the meltdown of international financial markets, unprecedented volatilities in world energy supplies, rapidly escalating global crises in food production, cumulative number of confirmed human cases of avian influenza, and various loopholes in cyber security, continue to remind people of "the centrality of risk in contemporary societies" (Scott, 2000, p. 33). Still, the list is lengthening. Nowadays, people are increasingly involved and vulnerable to different kinds of risks in their personal and professional lives. People now live in the era full of risks.

Against this backcloth, the notion of risk is especially relevant to the task of making sense of the current public issues. As a concept, risk is used to sound social alarms. Once regarded as risk, social problems issue an urgent demand for political attention, moral response, and changes of cultural outlook and social conduct (Wilkinson, 2010). Risk conflict is now one of the most fundamental conflicts which modern societies have to master (Beck, 2009). Therefore, risk now features as a label for social problems and a means to interpret people's thoughts and behaviors (Wilkinson, 2010). Arguably, the current risk debate in social science and a concern to theorize social representations and coping of risk have become one of the central preoccupations of contemporary sociological research. Under these conditions, it

may be quite applicable that risk is used to investigate Internet addiction and depict the relevant social life.

2.4.1.1 Risk and technology

Opposed to older dangers, risks are insecurities and hazards induced and introduced by modernization (Beck, 1992). Although risks are not an invention of modernity, the growing list of risks is often "a product of the successes of civilization" (Beck, 2009, p. 4), which have been created by industrial and technological processes, rather than occurring as natural or random events (Flynn, 2006). The rise of societal risk is bound up with the high technological innovations and scientific developments which people live with.

Technologies, with speed of development overwhelming cultural imagination (Beck, 2009), have become the subject of numerous discussions in science, politics, and public life (Beck-Gernsheim, 2000). Nowadays, the notion of risk is especially topical and important when technologies are under scrutiny (Beck, 2009). A new stage has begun in the social awareness of technology and its consequences that conscientious efforts have been made to look at the social costs of modern technologies (Beck-Gernsheim, 2000; Wilkinson, 2010). High-tech risks have upset the public for years (Beck, 1992), since there are so many unintended side-effects which may be categorized as incalculable risks (Wilkinson, 2010).

Perspectives on risk have also been repositioned with reference to recent development in communication technologies (Adam & Van Loon, 2000). New

information and communication technologies are opening "a new Pandora's box" (Beck, 2009). From television, video games, the list of risks has now lengthened to include the potential health risks associated with the Internet, mobile phones and other new information communication technologies, especially among young people (Lievrouw & Livingstone, 2006; Livingstone, 2002a, 2002b, 2009; Livingstone & Drotner, 2008; Livingstone & Haddon, 2009). Issues such as Internet addiction have initiated intense discussion of risk and personal Internet use. Public debates about risk involving disputes over new technologies, such as Internet addiction, have caught attention of governmental administration, management of industry, safety regulations, welfare services, and health (Wilkinson, 2010).

2.4.1.2 Risk and health

Health risks have long been a theme in the processes of technological and scientific modernization, and the related social conflicts, protections and research (Beck, 1992). Looking back over the last ten years of published articles in the three most widely cited journals, *Risk Analysis*, *Journal of Risk Research*, and *Health Risk and Society*, Wilkinson (2010) concludes that large numbers of topics are devoted to health risks. A major focus has been on new and emerging health risks, such as some previously undiagnosed illnesses, for example, "ME" (i.e., myalgic encephalomyelitis) or chronic fatigue syndrome (Flynn, 2006), and the potential health risks of communication technologies (Burgess, 2002; Timotijevic & Barnett, 2006).

Nowadays, health "is defined not only as absence of disease, but in a broader

sense as a state of complete physical, mental and social well-being" (Gyllensten, Ekdahl & Hansson, 1999, p.217). In this context, problems relating to food risks, mental health assessment, sexual health, illicit drug use, and genetic screening get the most attention (Wilkinson, 2010). Therefore, techniques of risk assessment have been incorporated into the logics and ethos of public health administration and modern social policies, as well as individuals' prevention and compensation (Beck, 2009; Wilkinson, 2010). In this way, risk issues have featured heavily within the rapid growth of the studies of health as one of the largest fields of contemporary sociological research (Skolbekken, 1995; Petersen & Wilkinson, 2008). Many studies have examined health risks through public ratings of health hazards (Lemyre, Lee, Mercier, Bouchard & Krewski, 2006), and there is an emerging body of studies on risk, lifestyle-related behaviors and mental health (Heyman, 2004). Therefore, Internet addiction can also be examined as such a health risk, since excessive Internet use has been found to harm individuals' social and psychological well-being (e.g., Young, 1996, 1998a, 1998b; Griffiths, 1998, 2000).

2.4.1.3 Risk and everyday life

Risks now lurk in every niche of life (Beck, 2009). Beck (1997, 1999) argues that modern individuals are increasingly made to deal with kinds of risks, including both large-scale risks to society as a whole and personal risks in everyday life (Wilkinson, 2010). To understand various risks in risk society, Beck (1992) proposes a triple model with the liberating dimension, the disenchantment dimension and the control

or reintegration dimension, which refer to individualization, the loss of traditional security and re-embedding oneself in new types of social commitment.

Different from class society, which is structured through collectivization (into families, classes, corporations, status groups, etc.) plus tradition, in risk society people are experiencing accelerated processes of individualization, which means removal from traditional social forms and commitments (Beck, 1992; Scott, 2000). Processes of individualization involve people in "precarious freedoms" (Beck, 2002a, p.42), which are frequently cast in negative terms as sources of egoistic impulse and high anxiety (Wilkinson, 2010). It is recognized that the surges of individualization further underscore the value of "risk" as a means to depict the presiding quality of social life in our times (Beck, 1992; Giddens, 1990, 1991; Wilkinson, 2010).

"Among the negative effects of individualization processes are the separation of the individual from traditional support networks" (Beck, 1992, p.93), including family, neighborhood, even friendship, as well as ties to a regional landscape and culture (Beck, 1992, p.88). This "loss of traditional security" (Beck, 1992, p. 128) leads to unsettling experiences of insecurity and anxiety (Beck, 1992, 2000a; Beck & Beck-Gernsheim, 1995, 2002). Hence, the common experiences of the majority of individuals are fraught with anxieties of self-identity and social meaning, which are channeled into different levels of risks (Wilkinson, 2010). With detraditionalization and the creation of new media technology such as Internet, what happens to people and how they deal with it are increasingly removed from the direct spheres (Beck, 1992). People now try to make full use of various preventive measures and the

possibilities of health-oriented lifestyles (Beck-Gernsheim, 2000). Therefore, the development of Internet addiction and the possible prevention or treatment should be investigated under such conditions as well.

2.4.2 Mapping the conceptual terrain of risk studies

The issue of risk touches contemporary Western experiences of the industrial way of life and the deep fears about the shadow side of the successes of industrialization, scientific progress and technological innovations (Adam & Van Loon, 2000). Arguably, along with the intensification processes of individualization, reflexive modernization and globalization, risk studies have gained more attention in contemporary sociological research (Wilkinson, 2010). However, there is no agreement or consensus when it comes to how risk should be defined and studied, and how to identify social conditions and cultural dispositions implicated within the rise of risk debate, since those sociologists who exercise privileged influence on the concept risk with their theories have different theoretical agendas in mind (Wilkinson, 2010). Therefore, to study Internet addiction as a risk issue, this research needs to map out the classical and contemporary social theories for the analysis of risk. This subsection mainly goes through the approaches of Ulrich Beck, Mary Douglas and Michel Foucault, whose traditions undoubtedly yield important results when it comes to understanding definitions and politics of risk (Wilkinson, 2010), while the present research was more inspired by some insights from the former two traditions, rather than went to that far as the Foucauldian analysis of risk.

2.4.2.1 The tradition of Ulrich Beck

The widely acclaimed German social theorist Ulrich Beck may be largely held responsible for bringing the concept of risk to prominence in contemporary sociological field. His *Risk Society*, first published in German in 1986 and later translated into English in 1992, is one of the most influential works of social analysis on the issue of risk and has been regarded as a disciplinary defining event in recent social science (Wilkinson, 2010).

In Beck's (1992) account, the concept of risk is used to draw attention to incalculable domains of threatening uncertainty (Wilkinson, 2010). Risk has become "an issue in the course of industrialization" (Beck, 2009, p. 4) and is directly bound to the reflexive modernization (Beck, 1992). Risks are culturally defined and "cannot be understood outside their materialization in particular mediations, be it scientific, political, economic or popular" (Beck, 2000b, p.213). Thus, risks need to be identified in particular contexts (Beck, 2002b, 2009). For Beck (1992), risk society refers to a particular set of economic, political, social and cultural conditions characterized by the manufactured uncertainties and transformations of social structures and relationships (Adam & Van Loon, 2000). Yet Beck (1992) persists maintaining that the risk society is still an industrial society at the same time, in which technology in conjunction with science, is involved in the creation of the risks. Accordingly, risk society informs a particular mode of organization as the response to new risks and challenges enforced by technologies and practices (Adam & Van

Loon, 2000).

Beck has a strong idea of the place of institutions within his notions of risk society (Lash, 2000). For instance, Beck is inclined to lend his support to environmental pressure groups like Greenpeace campaigning outside and against the state (Wilkinson, 2010). Beck aims to encourage "the development of emancipatory movements of social change", while his risk research "remains largely preoccupied with problems derived from the task of regulating and maintaining the institutional status quo" (Wilkinson, 2010, p.80). As for the countless sociologists influenced by Beck, there has been some considerable conflict of interpretations surrounding his work (Gabe, 2004; Wilkinson, 2010).

2.4.2.2 The tradition of Mary Douglas

Among the most important empirical research programmes dealing with risk, no one can ignore the tradition of Mary Douglas. Influenced by Durkheim's later works (Durkheim, 2001; Durkheim & Mauss, 1963), Douglas's (1978) analyses of risk relate to elaboration on that "people express their social feelings and offer explanations for events in the world" through the cultural categories determined by the modes of community and social organization (Wilkinson, 2010, p. 48).

Similar to Beck, Douglas (1978) argues that people's anxieties about work and family life feed into their expressed concerns over wider risks to society, which is due to the negative social impacts of individualization (Wilkinson, 2010). Douglas (1978) holds that how people articulate and explain the meaning of their lives is

always shaped by their prior commitments to communities and social groups (Wilkinson, 2010). On this account, when traditional binds of social solidarity have been weakened, it is commonplace for people to become preoccupied with different risks.

Different from Beck's position on the analysis of risk, Douglas is more inclined to entrust herself to "the state's providence and safe-keeping" (Wilkinson, 2010, p. 52). The organizing principles of Douglas' theory lend support to the stance that state authorities, experts and the relevant institutional arrangements are best suited for the task of dealing with the reality of risk on behalf of the common good (Douglas & Wildavsky, 1982). This framework of risk analysis appears to readily comply with the logics favored by practitioners in the field (Ball & Golob, 1999; Wilkinson, 2010). An overriding commitment in the expert field is to refine instruments of rationalization for regulatory practices, while it usually does not engage with inquiries into the socially produced and institutionalized power relations (Hood, James, Peters & Scott, 2004; Royal Society, 1992; Wilkinson, 2010). Therefore, more often than not, Douglas' cultural theory is often identified as the ideal means to bring sociological insight into the profession of risk management (Jaeger, Renn, Rosa & Webler, 2001; Schwarz & Thompson, 1990; Wilkinson, 2010).

Douglas also presents a shift in the everyday currency of risk from below – risk is used to sound social alarms and taken up by those being placed at risk (Douglas, 1992), while this cultural shift is also encouraged from above (Douglas, 1986; Douglas & Wildavsky, 1982). In recent years, more governments, especially in

Britain, Australia and New Zealand, have incorporated risks within the documents relating to health promotion, social welfare policy and criminal justice legislation (Culpitt, 1999; Kemshall, 2002; O'Malley, 2004; Peterson & Wilkinson, 2008; Wilkinson, 2010). In this way, the concept of risk is deployed to redraft health and safety regulations to draw individual and institutional attention and encourage people to adopt precautionary measures (Wilkinson, 2010). Similar stories also happen to Internet addiction in China.

2.4.2.3 The tradition of Michel Foucault

Another important theoretical approach dealing with risk is under the influence of Michel Foucault. As for Foucault, the struggle against risk is always viewed within the perspective of the state and scientific power (Beck, 2009). Foucault (1982) claimed that he was principally concerned to depict a history of the institutional settings and procedures in which "human beings are made subjects" (Foucault, 1982, p. 208-209), but the analysis of power relations occupied an increasingly important position in his work (Wilkinson, 2010). Inspired by Foucault's achievement and persuasiveness, writers such as Robert Castel, Ian Culpitt, Mitchell Dean, François Ewald and Pat O'Malley, also known as theorists of governmentality, pay attention to the language of risk as a means to co-ordinate society as a nexus of power relations (Wilkinson, 2010). Not like Douglas' conservatism, arguably, theorists of governmentality have made great efforts to question power and politics in the analysis of risk (Wilkinson, 2010).

These researchers hold that the current widespread use of "risk" in political and administrative/regulatory discourse presents opportunities to elaborate on Foucault's analysis of "the rationality of government" (Burchell, Gordon & Miller, 1991; Wilkinson, 2010). Their main claim is that risk now has been widely adopted as "a primary technique of government" (Wilkinson, 2010, p. 54). Power relations are an integral component of the exercises in government which aims "to structure the possibilities of action of other people" (Foucault, 1982, p. 220-221). With the term "power relations", Foucault (1982) argues that individuals and groups are directed to act within a field of possibilities and at the same time choose to adopt the behaviors as their preferred way of living (Wilkinson, 2010).

The interest of theorists of governmentality in risk analysis can be summarized with the often cited phrase provided by Foucault, namely, "the conduct of conduct" (Wilkinson, 2010, p. 53). On this account, risk features as a principle means to conduct individuals, so that they in turn conduct themselves along a selected course of actions and towards a particular set of goals (Wilkinson, 2010, p. 54). Power relations then take place whereby individuals are being directed to guard themselves from risks for the sake of their own interests. The theme of governmentality is at the center of their analysis of risk, while these researchers tend to draw more on Foucault's (1982, 1991) commentaries on the interrelationship between power and subjectivity to interpret the social meaning of risk (Wilkinson, 2010). Risks as part of the governmental framework create new forms of subjectivity and redefine the moral outlooks (Castel, 1991; Wilkinson, 2010), while most theorists of governmentality

are highly critical when evaluating the sociological consequences of this development (Wilkinson, 2010).

2.4.3 Summary

The concept of risk "consumes and transforms everything" (Beck, 2009, p. 187), and modern society has become a risk society increasingly engaged in debates over self-generated risks and attempts to manage and prevent them (Beck, 2009). Risk issues have also come to occupy the attention of contemporary social theory. This section gives a general overview of the current theory and analysis of risk as the backcloth for the present research of Internet addiction as an emerging risk.

By examining kinds of issues related to technology, health and everyday life which are prioritized as problems for risk debate, Subsection 2.4.1 furnishes the backdrop of the analysis of risk. Arguably, it is through the rise of risk debate that many problems relating to new communication technologies, public health and everyday lifestyles have been brought within the sociological field.

The growing awareness of risks which may be an unimaginable phenomenon a generation ago, now has been given first rank (Beck, 1992). As the consequences related to the threatening force of modernization (Beck, 1992), more and more risks are day-to-day insecurities experienced as matters of personal feeling, social belonging and cultural identification (Wilkinson, 2010). Contemporary societies are depicted as risk societies comprised by social structures and cultural movements which involve people in intensifying experiences of individualization (Wilkinson,

2010). Classical distinctions have merged into different degrees of risk (Beck, 2009). Traditional forms of coping with insecurity and uncertainty, such as family, marriage, sex roles, and class consciousness, as well as the institutions related to them, lose meaning, leaving the individuals coping with their fear and anxiety (Beck, 1992). On this account, exploring risks may highlight the negative impact of the process of individualization on people's presiding experience of life in modern societies.

Regarding the interpretation and management of risks in modern technological society, different research traditions and approaches were acknowledged and briefly reviewed in Subsection 2.4.2. These traditions furnish the studies of risk with different perspectives. Some scholars operate risk analysis with a mode of thinking in which risk analysis creates opportunities to document effects statistically, which are shown to be systematic events calling for political regulation, as well as an incentive for businesses (Beck, 2009). Others hold that there are always political and moral interests at stake in risk research. Still others conduct risk analysis to fulfill the task of categorizing individual thoughts and actions (Wilkinson, 2010).

Briefly, sociological interests of recent researchers can be framed via the realist and social constructionist accounts (Adams, 1995; Denney, 2005; Lupton, 1999). As for the researchers aligning themselves with the realist-absolutist stance, risks are believed to be real and the foundations of science, politics, business and everyday life in flux (Beck, 2000b). Risks are defined as the probabilities of harm due to given technological or other processes (Beck, 1992). Referring to the researchers hold the constructionist-relativist position, there is no such a thing-out-there as risk in reality,

but a set of different ways of ordering reality, rendering it into a calculable form (Wilkinson, 2010). The significance of risk does not lie in risk itself but what risk gets attached to, such as risks are always created and effected in social systems; and the magnitude of risks is a direct function of the quality of social relations and processes (Beck, 1992; Wilkinson, 2010).

However, by positioning researchers of risk along the dichotomy between realist and social constructionist approaches, one left with both "a restricted account of sociology" and "a diminished understanding of risk" (Wilkinson, 2010, p. 57). In practice, the im/material in/visible nature of technologically induced risks places scientists, mass media, politicians, business managers and members of the public in key social positions (Adam & Van Loon, 2000). The complexity and paradoxical nature of contemporary risks forces researchers to make endeavors to deconstruct the bipolar oppositions of the realist-absolutist stance and the constructionist-relativist position (Adam & Van Loon, 2000). Consequently, the theory and analysis need to shift the plane of discussion from epistemological and metaphysical preoccupations to "the empirically accessible world of social facts" (Adam & Van Loon, 2000, p. 2), or the socially embedded analyses of risks, technologies and ways in which "risks are lived, perceived, conceptualized, defined, mediated, legitimized, and/or institutionalized" (Adam & Van Loon, 2000, p. 8). To transgress the borders between realist and constructionist approaches, pragmatically or synthetically, one might need to scholarly weave together very different analyses of risk, and the concept of risk might be employed both as a tool of analysis and as a means to debate prevailing

modes of institutional affiliation and self-identification, as well as a critical vantage point to map out the social dynamics in contemporary societies (Adam & Van Loon, 2000; Rose, 1999; Wilkinson, 2010). In the domain of expert analysis, the concept of risk is used to refer to a calculation of probability, while at the level of popular understanding, risk tends to be regarded as a synonym for danger, harm or threat (Wilkinson, 2010, p. 57). Thus, an integral part of the research efforts in this investigation of the ongoing formation of Internet addiction as an emerging health risk is to go beyond the dichotomy between realist and social constructionist approaches for risk analysis.

One innovative feature of the overview of the sociology of risk in this section concerns the potential for a woven way of analysis to be adopted to bear on the ways in which risk problems are culturally represented and treated as pressing matters of social concern (Wilkinson, 2010). In general, this research was influenced by the research traditions of Douglas and Beck, and attempted to go beyond the dichotomy between realist and social constructionist approaches for risk analysis.

2.5 THE STAGING OF AND THE COPING WITH RISK

When it comes to look into the constructions of risk, the two essential factors are the staging of risks and the coping (Beck, 1992). The staging of risks presupposes their social recognition (Beck, 2009). It is usually through the continued traces of risk issue that the invisible hazards are becoming visible, but how they can be overcome, publicly and privately, is largely an open question (Beck, 1992). When it comes to

the level of individuals, priority is given to interpret how individuals actually think about and respond to the risks within their everyday social life. Apparently, the Internet has the potential to profoundly influence adolescents and young adults (Kraut et al., 1998). Hence, family coping is quite important referring to this emerging risk. In addition, there are more and mroe institutions and organizations to manage and control this health risk. Through expert authority, professional coping is usually "with the regulatory apparatus designed for managing the health and safety of populations" (Wilkinson, 2010, p. 8).

This section discusses the staging of and the coping with Internet addiction as a new health risk. The section is organized as follows: Subsection 2.5.1 highlights the staging of risk; Subsection 2.5.2 discusses the coping at the individual level; Subsection 2.5.3 focuses on the family coping with the risk of Internet addiction; Subsection 2.5.4 examines the professional coping; and Subsection 2.5.5 presents a summary of the section.

2.5.1 The staging of risk

As for risk research, an emphasis is placed upon the actual staging of risks. Beck (2009) maintains that risks are the results of staging, since "they are products of struggles and conflicts over definitions" within the specific context (p. 30). The existence of risks takes the form of scientific and alternative scientific knowledge, and their "reality" "can be dramatized or minimized, transformed or simply denied" (Beck, 2009, p. 30). Adam and Van Loon (2000) hold that the "im/materiality gives

risks an air of unreality until the moment at which they materialize as symptoms" (p.3).

Dean (1999) emphasizes that the concept of risk is used as a means to draw public attention to particular types of danger, and to highlight common worries, concerns, and problems (Wilkinson, 2010). It is difficult to resist that attention is often drawn to certain risks, which were previously anonymous, but its staging in mass media can increase to a point where they are described as "serious problems" and set alarm bells ringing (Beck, 2009, p. 145). The increased consciousness of risk can be seen from the relative importance of corresponding news and reportage in mass media (Beck, 1992). The health risks may be hypothetical, as justified, dramatized or minimized in mass media, where they are believed to have social, economic, political and legal consequences (Beck, 1992). In other words, without this kind of visual presence, the health hazards associated with the new technologies "are difficult to represent as risks, let alone sustain the existence beyond their momentary emergence" (Adam & Van Loon, 2000, p. 3). It is usually the mass media's representation that makes the invisible health risk tangible and keeps the issue alive (Adam & Van Loon, 2000).

Mass media do not simply pass on particular relations of risk definition, but constitute them, and media are hence part of the mode of risk production (Adam & Van Loon, 2000). As for the dissemination of health risk, mass media offer "overall considerable opportunities to influence the definition of social problems" (Beck, 1992, p.197). Health risks may be framed as debates in terms of medical expertise

(Adam & Van Loon, 2000). Health risks can also be seen by the reports on personal experiences, which in turn sensitize people to new symptoms (Beck, 1992). It is often the case that matters of risks are portrayed in stigmatized ways in news media (Flynn, Slovic & Kunreuther, 2001). Health risk is usually framed with a sense of urgency, thus "it is a concept geared to exercise power" (Wilkinson, 2010, p. 25). Nowadays, the emotively laden conception of risk is deployed as governmental strategies and institutional practices "designed to encourage people to adopt precautionary measures to protect themselves and others from various types of harm" (Wilkinson, 2010, p. 24).

Mass media are instrumental in the creation of a public audience for health risks, and their function in the enrolment of actors is also of huge importance (Adam & Van Loon, 2000). One might question whether the premise inherent is about media's power over the audiences from deterministic perspective. Of course, the content of media messages cannot be simply equated with public opinion (Wilkinson, 2010). Beck (1992) argues that it is not clear whether it is the health risks that have intensified, or people's view of them, because "both sides converge, condition each other, and strengthen each other" (p. 55). The influence of media reports on risk formation is in no way diminished, therefore interpreting the content of media reports may provide some kind of a window into the understanding of risk issues.

In Mainland China, the level of consensus in public opinion about the effects of Internet addiction began to consolidate in some important ways that is "the need to consider the lives of children" (Kunkel & Wilcox, 2001, p.602). Internet addiction

has been condemned to pose a risk of harmful effects on adolescents and young adults. In various media reports, "the stakes are the same as they have always been": as the public interest required, "to employ the nation's resources" "for the benefit of children and to ensure the protection of the nation's youth" (Kunkel & Wilcox, 2001, p.602). Public opinion followed right in step with the media coverage, with a strong majority holding the view that Internet addiction is harmful to young people and it is a very serious social problem now. The public concerns about the escalating violence, copycat crimes and suicides inspired by problematic Internet use also led to a call for action (Jordan, 2001). This might have prompted stronger response from policy makers as well.

2.5.2 Coping at the level of individuals

In risk society, people have to "become small, private alternative experts in risks of modernization" (Beck, 1992, p. 61). At the level of individuals, there are personal solutions to perceived risks (Scott, 2000). Among the sociological inquiry into risk phenomenon, studies have also focused on different ways in which individuals judge the severity of the risks and the kinds of behaviors they are inclined to adopt in order to stay out of harms (Wilkinson, 2010, p. 24).

Individuals being thrown out of both security and tradition due to individualization are now "forced to reflect where reflection was previously not required" and such reflection seeps deep into the most private recesses of people's lives on a routine daily basis: into their every action as parents, children, partners, colleagues, and so

on (Scott, 2000, p. 37). Beck maintains that social risk positions spring up when some people are more affected by the distribution and growth of risks than others (Beck, 1992). In this respect, for the risk groups, risk can have serious implications because it involves a whole new repertoire of apprehensions, ideas, behavioral norms, fears, hopes, and even religious conflicts for them, which in turn also closely connected with new forms of classification, interpretation and organization of everyday life (Beck, 2009).

According to previous research, Internet addicts seduced by the hypnotic screen feel out of control and suffer from significant social stresses (Stein & Sinha, 2002). Proponents of Internet addiction claim that an individual is addicted when his/her psychological state, including both mental and emotional states, as well as his/her scholastic, occupational and social interactions, is impaired by the overuse of the Internet (Byun et al., 2009). Internet addiction as a problem concerns a lot not only because of its negative psychological impact, but also because the deviant activity involved, such as delinquency (Leung, 2008). Therefore, Internet addiction as a risk can be very harmful to people's health and even moral development. That is the reason why individuals are strongly advised to pay attention to their daily use of the Internet.

2.5.3 Family coping

As the fundamental relationship to people's lives, family is also a primary social unit of coping with risks. The quality of family relationships is a crucial determinant of

the competence and confidence with which young people face the major transition from childhood to adulthood that is called adolescence (Noller, 1995). The blueprints for psychological well-being or distress are drawn to a large extent through interactions in the family, since dysfunctional family communication patterns can mix up, distort, and confuse people's thoughts and emotions, particularly when they are experienced with the challenges of adolescence (Segrin & Flora, 2005). Family-based preventive intervention has been found to have great promise in prevention of adolescent substance use, considering the communicative ways in which parents can actually facilitate their children's attempts at increased mental and physical health (Le Poire, 2006; Lochman & Van den Steenhoven, 2006). Hence, it is necessary to examine both protective and risk factors for Internet addiction in family environment, in order to develop relevant preventative strategies (Yen, Yen, Chen, Chen, & Ko, 2007).

New media are frequently seen to be harmful to those perceived to be most at risk. Many of the new media cultural forms are primarily identified with the young, most obviously the online games. Children's use of the Internet is increasing dramatically (Buckingham, 2002). In China, Netizens aged 10-19 have become the largest group of the Internet users, and 31.8% fall into the group, followed by 28.6% between 20 and 29 (CNNIC, 2010). The Internet has redefined the media habits of adolescents in just a few years (Kraut et al., 1998). Adolescents are now more likely to fight over the computer than the telephone, and they now watch less television because of the Internet (Kraut et al., 1998). However, adolescents may be more susceptible than

adults to the anonymity of the Internet, unsafe chat environment, and less-regulated online content, which raise concerns about the cognitive, emotional, social, and physical welfare of adolescents (Tarpley, 2001). It is understood that adolescents are at a point in the life cycle where they are very vulnerable to harmful addictive agents and can be easily persuaded to change their behaviors (Byun et al., 2009). Amid fears about the impact of violence, cultural decline, and Internet addiction, the Internet is condemned for taking adolescents away from more wholesome activities (Buckingham, 2002). It is children, or more accurately, the idea of childhood, that is the vehicle for many media panics, too (Buckingham, 2002).

Information communication technologies like computers and mobile phones have influenced family communication and practices (Silva, 2010). With the number of child Internet users increasing daily, parent-child conflicts increase over Internet use (Alexander, Kang, & Kim, 2006). For example, adolescent Internet users are reluctant to come to meals or go to bed. Of those teens online, the majority report that the use of the Internet takes away from the time youth spend with their families (Lenhart, Rainie, & Lewis, 2001). Nowadays many parents find that Internet may threaten to overwhelm young people, especially for the families with school aged children. Hence, Internet addiction is regarded not only as an individual issue, but also a family issue, therefore it is beneficial to involve family in solutions.

With new information and technologies being more and more within home environment, there are also kinds of informal controls, such as parental supervision, to regulate, control, limit, and shape Internet use for the children (e.g., Rasquier,

2001; Van den Bulck & Van den Bergh, 2000; Vandewater, Park, Huang, & Wartella, 2005; Woodard & Gridina, 2000). There is also commercial software available to block out unwanted or adult content, but "no blocking system is foolproof", and it tends to be less effective in chat rooms, and computer-literate children can often find codes to break through the filters (Tarpley, 2001). More and more active parents are creating and enforcing the rules (Jordan, 2001), such as potential blocking, setting explicit rules (including rules about when children can and cannot use the Internet, what children cannot do online, and how much time children can spend on the Internet), making recommendations, monitoring children's Internet use by staying together with them (Jordan, 2001). According to previous research, parental mediation of the Internet can lead their children to utilize the Internet in beneficial ways when parents are actively involved in their children's Internet use through processes such as recommending web sites and co-using; however, simply prohibiting or restricting seems ineffective for guiding children's Internet use (Lee & Chae, 2007).

In Mainland China, the only child policy even raises the importance of the child. Usually one child is all for many Chinese families. Moreover, more adult children live longer in the parental home. Investigation has been conducted to examine the relationship between family communication environment and adolescents' problematic Internet use (CYIA, 2010). Some Internet addiction clinics and other rehabilitation programs provide parental tutoring for improving family communication as well.

However, family forms are now more diverse than ever. Similar to many other countries, the traditional nuclear family in China "begin to crumble with the continuation of modernization processes", such as inclusion of women in the work place, increasing frequency of divorce, the rapid growth of different types of stepfamily, the growing number of single-parent families, and so on (Beck, 1992, p. 13). Family communication becomes more complicated as more parents have to negotiate both bread-winner and nurturing roles simultaneously (Le Poire, 2006). Family harmony is becoming more fragile in the changing dynamic of the modern-day family, with traditional forms of coping with risks in the family are failing (Beck, 1992). Therefore, individuals become more dependent on education, governmental regulations and support, and professional coping such as medical, psychological and pedagogical counseling and care (Beck, 1992).

2.5.4 Professional coping

Nowadays, individuals are forced to trust the promises of rationality of the institutions, because the risks are so different from those experienced by their previous generations (Beck, 2009). Beck (2009) argues that "over the past two centuries, the judgment of scientists has replaced tradition in Western societies" (p. 6). It is also due to the process of individualization that large numbers of people are forced by social circumstance to assume responsibility for the direction and course of their own lives (Wilkinson, 2010). Traditional forms of coping with risks in family, marriage, sex roles, and class consciousness no longer possess the power, as well as

in the institutions related to them (Beck, 1992). Therefore, people lose the example of how to live and cope with more and more new risks and the related fear and anxiety, and in turn have new demands on social institutions in therapy, education and politics (Beck, 1992). Accordingly, there are more and more social interventions, expert practices and new institutional arrangements designed to bring greater measures and more techniques relating to the health, safety and welfare of the populations (Heyman, 1998; Peterson & Wilkinson, 2008).

Some of the contemporary risks are being transformed at an implied structural level, for instance, "the medical world of health professionals and their clients" (Adam & Van Loon, 2000, p. 7). In particular, as for health risks, expert assessment and professional coping become a major focus of concern. Previous studies found that probability statements incorporating the language of risk are used to highlight the likelihood of positive outcomes from medical intervention (Heyman & Henriksen, 1998). This puts forward the possibility of objectively and sometimes obligatorily determining risks in a specialized fashion and through expert authority (Beck, 1992). People nowadays have to rely on health care professionals in reducing the symptoms of risks.

The speed at which the Internet has developed is both encouraging and alarming, and it underscores the need for researchers, educators and regulators to stay abreast of their rapid changes (Tarpley, 2001). On one hand, it is the drive to discover statistical laws governing individuals' use of the Internet; on the other hand it may be the auspices of political or moral projects to reduce rates of disease, crime, suicide

and other relevant negative outcomes (Wilkinson, 2010).

One of these risk debates arrives at a focus on the at-risk children and parenthood (Lubeck & Garrett, 1990; Parton, 1998). As a special group of people in the society, children and teenagers, or the youth, are considered innocent, dependent, vulnerable, in need of protection, and not wholly responsible for their deviant behaviors because of their immaturity (Conrad & Schneider, 1992). However, there are few firm points of agreement on how the new communications environment should be structured (Kunkel & Wilcox, 2001). Ultimately, these concerns have drawn consistent public and political scrutiny, and beg the question of whether governments can or should regulate the Internet in order to protect Internet users, especially the young (Stein & Sinha, 2002). Advocates and policy makers in China contend that new regulations and guidelines, such as anti-addiction system and anti-fatigue software can empower the parents to guide their children's Internet use and online behaviors more effectively (Jordan, 2001).

2.5.5 Summary

As some scholars argued, the "mythological constructions of childhood" aligned with parallel mythologies about technology, has made Internet addiction a pressing issue (Buckingham, 2002, p.78; Williams, 1974).

Related literature reviewed in Subsection 2.5.1 suggests that the salience of risk as a topic of social concern may grow in correspondence with the amount of space devoted to related problems in mass media (Wilkinson, 2010). Transformed into

embodied danger, the threat of health risks may then engender "widespread expression of public concern and intense academic debate", which in turn put the risks firmly on political agenda (Adam & Van Loon, 2000, p.3). Subsection 2.5.2 and Subsection 2.5.3 discussed the coping with symptoms of the risks, at the levels of both individuals and families. Due to the importance of scientific risk definitions in modern societies (Beck, 1992), Subsection 2.5.3 discussed professional coping. Therefore, specific risks need to be conceived "with reference to the person, the family, the company, the nation and their physical, mental, social and/or economic welfare" (Adam & Van Loon, 2000, p. 7). In the technologically and medically oriented culture, the knowledge of the common people is to a great extent influenced by experts (Vogler, 1993). In the case of Internet addiction, which is now defined as a mental illness in some professional institutions, some health care professionals have been recognized as experts to specify the causes and provide treatments.

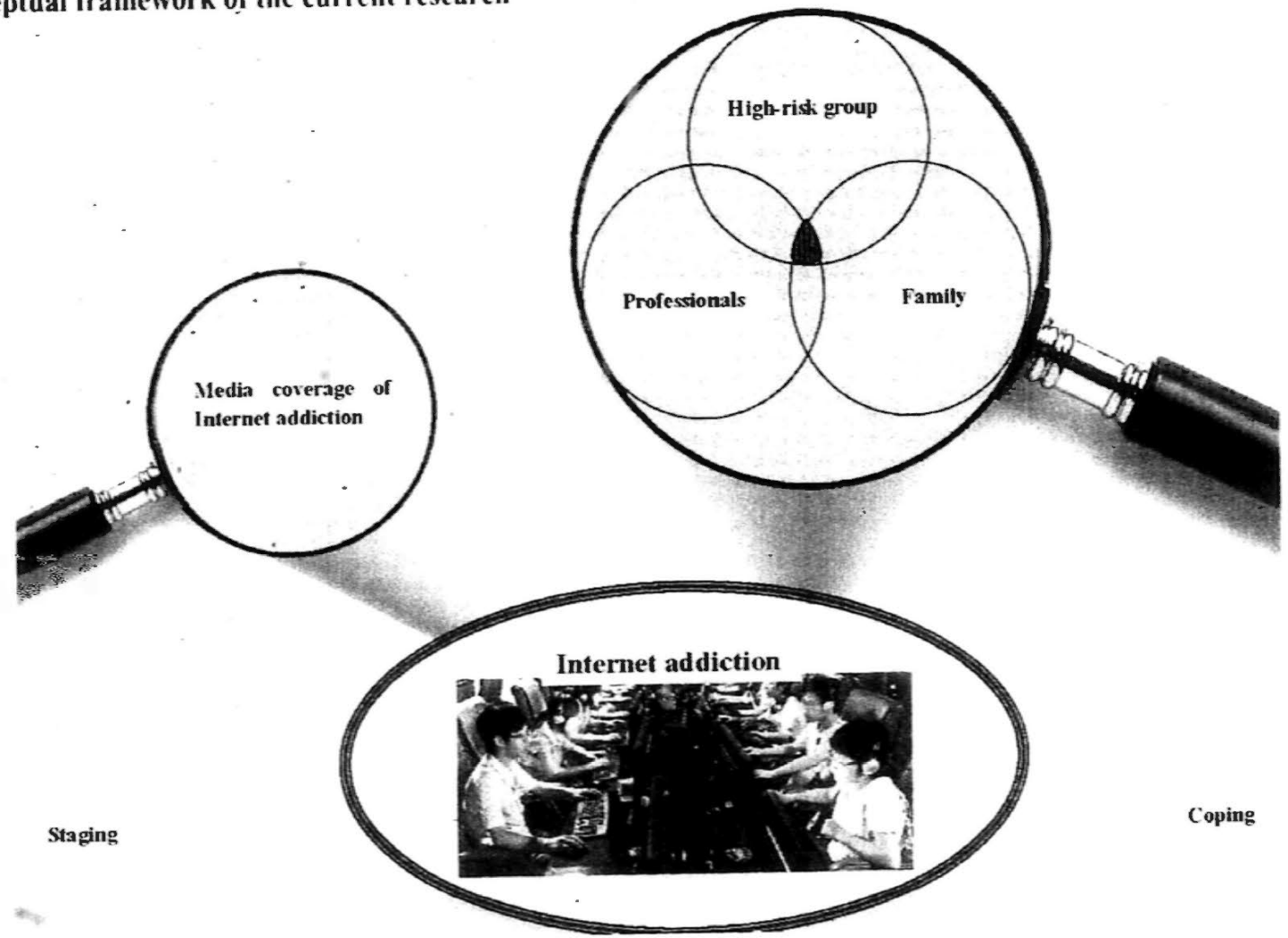
Therefore, the staging of and the coping with risks are the key for understanding the risk constructions. To better understand the process how Internet addiction as an emerging risk has come into being, researchers should examine the relevant staging and coping, which involve mass media, individuals, families, expertise and professionals, and other social groups, such as policy makers.

2.6 CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS

The theory and analysis of risk, especially those related to health risk issues, have experienced rapid growth and become increasingly important in contemporary

sociological research. With a history of sixteen years, the influence of Internet addiction as an emerging health risk is in no way diminished. Complications arising from the use of Internet now come under the umbrella term of Internet addiction with conceptualizations provided by experts and professionals. The risk constructions, basically the staging of risk and the coping with symptoms, have been discussed in preceding Section 2.5 of this chapter, which provides a way to look into the whole process. This section presents a conceptual research framework (Figure 2.1) developed for this research on the basis of related literature reviewed in preceding sections: Subsection 2.6.1 develops a research framework, and Subsection 2.6.2 presents the research questions of the current research.

Figure 2.1 Conceptual framework of the current research



Source: Developed for this research; picture source: (Komplett, 2010)

2.6.1 Research framework

When it comes to identify the specific circumstances under which social problems are translated into risks, previous research has established the importance of the staging of risks and the coping with the symptoms as two essential factors (Beck, 1992).

Nowadays, media representations make invisible health risks tangible, sound social alarms, create a public audience for the risks, and therefore become a crucial form of the staging of risks (Adam & Van Loon, 2000). Although the content of media messages cannot be simply equated with public opinion, the role of media coverage on risk staging cannot be denied (Wilkinson, 2010). Therefore, news reports of Internet addiction in Chinese newspaper were examined to investigate the staging of this new health risk in China.

Following the forming process, analyses are needed not only in the staging of risks, but also in the coping with risks. Based on the reviewed literature, individuals, family and professionals were examined as the main relevant social agencies for the coping with risks. Many scholars have emphasized the importance to investigate the risk groups. This research took on this challenge and investigated the Internet-dependent young people based on multiple data. The coping with Internet addiction within the Chinese context was investigated by using data collected at professional, individual and family levels. In this way, this research attempted to provide a more detailed picture of the ongoing formation of Internet addiction as an emerging health risk in the Chinese context. The research framework is presented in

Figure 2.1.

2.6.2 Research questions

On the basis of the theoretical research framework developed and the relevant literature reviewed in preceding sections of this chapter, three clusters of overarching research questions are proposed accordingly: 1) what are the media representations of Internet addiction in Mainland China, mainly the relevant newspaper reports, as the staging of this new health risk? 2) what are the variables which may contribute to the likelihood of an individual contracting Internet addiction identified by professional calculation in the clinical context? 3) what does Internet addiction mean to the risk group and their family and how do they cope with it in the clinic with professional treatments?

This study consists of two central interrelated theses, the staging of and the coping with Internet addiction as an emerging health risk. The first set of questions involves locating the issue of Internet addiction as an emerging health risk within Chinese context at social level, while the second set of questions involves explaining it at individual and familial levels. These questions, which concern the specific case in Mainland China, underlie a more general aim of this research, which is to examine the risk issues over the use of new communication technologies in contemporary daily life. Specific questions are further addressed within relevant studies in the following chapters.

2.7 CONCLUSION

Subsection 2.1 set out objectives for the chapter – to provide a literature review on the theory and analysis of risk in general and Internet addiction as a new emerging risk in particular, and to investigate the forming process with the two essential factors, namely the staging of risks and the coping with the symptoms. Conceptual framework and research questions are also presented in this chapter on the basis of the relevant literature.

CHAPTER THREE

RESEARCH BACKGROUND AND JUSTIFICATION

3.1 INTRODUCTION

Chapter Two presented a literature review of relevant theories and previous research, and proposed a research framework for this research. The purpose of this chapter is to provide background information on the main concern (Internet addiction in Mainland China) for this research, and justification of the current study.

Specifically, this chapter has three objectives: (1) To give an overview of Internet development in Mainland China as the research background, and present a profile of the Chinese Internet users, an overview of the Internet-related industries, and details of governmental regulations of Internet in Mainland China. (2) To provide a brief on the research area by discussing public debates, academic research, treatments, and clinical practice relating to Internet addiction in Mainland China. (3) To present a detailed justification of this research, including the research gap in previous studies, the implications of this research, and the general contribution of this study to the body of knowledge.

Accordingly, this chapter is divided into five sections. Section 3.1 states objectives and structure of the chapter. Section 3.2 presents an overview of the development of Internet, while Section 3.3 discusses the Internet addiction issue both in Mainland

China. Section 3.4 explains justification of this research and Section 3.5 provides a summary of the chapter.

3.2 DEVELOPMENT OF THE INTERNET IN MAINLAND CHINA

The Internet has emerged as an important social technology used for communication between individuals and groups, and has been regarded as an essential media channel for information exchange, academic research, and entertainment (Subrahmanyam, Kraut, Greenfield & Gross, 2001). This section provides the background of the Internet in Mainland China. Subsection 3.2.1 presents a brief timeline of the development of the Internet in Mainland China; Subsection 3.2.2 provides a profile of the Chinese Internet users; Subsection 3.2.3 presents an overview of the Internet-related industries; and Subsection 3.2.4 discusses the governmental regulations of Internet in Mainland China.

3.2.1 A brief timeline of the Internet in Mainland China

As a new medium, the history of the Internet is not long. The current design of the Internet can be traced to the U.S. Department of Defense computer network in 1969, while it was not until the development of the personal computer by International Business Machines (IBM) in 1975 that the Internet became a public domain entity (Paik, 2001). In the early 1980s, the price of PC was reduced to mass affordability, and it was in 1987 that the basic structure of the Internet was finally formed with a

network created by the U.S. National Science Foundation (Paik, 2001). Since then, the Internet has been growing rapidly.

China's connection to the Internet also dates back to 1987, when the first e-mail was successfully sent overseas on September 20th, whose title was "Across the Great Wall we can reach every corner in the world" (CNNIC, 2004). In 1994, China has been officially recognized as a country with full functional Internet accessibility, which was elected as one of China's top 10 scientific and technological events in that year by the Chinese press community and also designated as one of China's key scientific and technological achievements by the State Statistical Communiqué (CNNIC, 2004). The development of the Internet and other information and communication technologies (ICTs) applications have been put forward as a central element of the Five-Year Plan on National Economy and Social Development (CNNIC, 2008b). China made good use of the advantages as a late starter and has experienced a digital leap forward (Hughes & Wacker, 2003).

During the last two decades, China caught hold of opportunities, expedited the development of information and network technologies, and applied it to practice in economy, education, government, culture, national defense, society, law, and so on (CNNIC, 2006). Because of the implementation of the projects, such as "Every School Access the Network" and "The Project of Families Access the Internet", provinces and central cities are connected with high-speed transmitting network (CNNIC, 2006).

The fundamental Internet resources in China maintained high growth. By the end of

2010, the number of IPv4 addresses had reached 278 million, with an annual growth rate of 19.4%, ranking the second in the world after the United States (CNNIC, 2011). By December 31, 2009, there have been totally 16,818,401 domain names in China with 13,459,133 CN names, about 3,231,838 websites, and international bandwidth about 866,367.20Mbps with an annual growth rate of 35.3% (CNNIC, 2010). However, there is still a big gap between the urban area and the countryside as for the development of the Internet (CNNIC, 2008b).

3.2.2 A profile of the Chinese Internet users

In June 2008, the Netizen population in China surpassed that of the United States, ranking first in the world for the first time (CNNIC, 2009a, 2009b). The Internet penetration rate in China had already caught up with, and surpassed the average level in the world (21.9 %) by the end of 2008 (CNNIC, 2009a, p.12). China now has the world's largest number of Internet users in absolute term.

According to the statistics of China Internet Network Information Center (CNNIC), by December 31, 2010, the number of Internet users in China has reached 457 million, with an Internet penetration rate of 34.3% (CNNIC, 2011, p.5). The number of the broadband Internet users has reached 450 million, accounting for 98.3% of the total Netizens; and the size of Netizens accessing the Internet by mobile phones has reached 303 million, becoming a new growing point (CNNIC, 2011).

As for demographic characteristics, by the end of 2010, the male/female gender ratio of Chinese Internet users was 55.8: 44.2 (CNNIC, 2011). Compared with 2009,

the age categories of the Internet users aged 30 and above experienced growth in varying degree, accounting for 41.8% of the total Internet users, which showed a further optimized age structure (CNNIC, 2011). Referring to educational levels, the Internet has increasingly been popularized among people with lower education levels (CNNIC, 2011). In 2010, the largest composing group of Chinese Internet users was still students, accounting for 30.6% of the whole Netizen population (CNNIC, 2011). The proportion of Internet users without income dropped from 10.0% to 4.6% in 2010, corresponding to the drop of the proportion of unemployed Netizens, however the income levels with less than RMB 2,000 per month rose in 2010, which means more low-income people had Internet access (CNNIC, 2011). The size of rural Netizens reached 125 million, and the Internet has been continuously penetrating the rural areas (CNNIC, 2011).

Home (89.2%) and Internet cafés (35.7%) are two primary places for Internet use in Mainland China. Desktops (78.4%) are the main equipment for Internet access, while mobile phones (66.2%) and laptops (45.7%) as terminals for Internet access are rapidly growing (CNNIC, 2011). As for time of Internet access, the time on Internet per week spent by Chinese Internet users continues to increase, up to 18.3 hours in 2010 (CNNIC, 2011). Among the Internet services, the top three most used among Chinese Internet users are search engine (81.9%), online music (79.2%), and online news (77.2%) in 2010 (CNNIC, 2011).

3.2.3 An overview of the Chinese Internet-related industries

The underlying technological infrastructure is the prerequisite for the development of Internet and its related industries. Chinese government supports the proliferation of information and communication technologies (ICTs) and the development of related networks through heavy investment via the state-owned networks (Sohmen, 2001). In recent years, PC usage, broadband access, and Internet cafés in China have increased rapidly, providing the infrastructure for Internet-related industries.

Internet has showed a growing economic importance. Strategies and plans have been made at the level of national policies, such as *The Project of Enterprise Accessing the Internet* (CNNIC, 2005), *The Announcement of the Approval Situation of Nationwide Internet Accessing Chain Store Operators* (CNNIC, 2006), and the *Eleventh Five-Year Plan for the Development of E-commerce* (CNNIC, 2008b). All these initiations have shown that the government has paid much attention to the channel value of the Internet and the further integration of the traditional industries and the Internet (CNNIC, 2008b).

Linktone Ltd., Tom Online, Shanda, Tencent, KongZhong Corporate, 51job, China Finance Online, eLong, and The9 were successively listed on overseas stock market, indicating a tide of Chinese Internet firms overseas (CNNIC, 2007). Chinese Internet enterprises have ascended among the list of the largest Internet enterprises in the world (CNNIC, 2008b). For instance, BaiDu Co. Ltd. recorded the highest first day growth rate of 354% among all IPOs on NASDAQ since the year of the Internet Bubble in 2000 (CNNIC, 2007). Sina, Sohu and Netease achieved the full-year

profitability for the first time in 2003, with the reported annual profits of US$114 million, US$89 million and US$80 million respectively (CNNIC, 2007). Shanghai Giant Network Technology Ltd. was listed in the New York Stock Exchange of the United States in 2007 and became the online game enterprise with the highest market value in China (CNNIC, 2008b). In 2007, the market value of Tencent, Baidu and Alibaba successively surpassed US$ 10 billion (CNNIC, 2008b).

Internet also plays an increasingly important role as a kind of news media. Concepts like Web2.0 promoted tremendous development and marked another evolution stage of news media in China, with a series of socialized applications such as Blog, RSS, WIKI, SNS friend-making network and so on (CNNIC, 2007). The development of China's Internet media has consolidated its position, especially with its role in news releasing about earthquake relief, helping people find their missing kin, and delivering aids and soliciting donations after the earthquake on May 12th, 2008, in Sichuan Province (CNNIC, 2009b).

Internet cafés as popular venues play a significant role in facilitating digital entertainment consumption by providing ubiquitous and economical access with loosely enforced regulations (Ernkvist & Ström, 2008). As a promising industry with "markets and revenues rivalling Hollywood", game industry is overflowing with possibilities and potentialities, (Humphreys, 2005, p.36). Since May 2008, with the rapid spreading of Social Networking Service (SNS) websites such as Kaixin ("being happy") and Renren ("Everyone"), SNS has become one of the most popular Internet applications (CNNIC, 2009b). Thanks to innovative developments of technical and

interface areas, as well as broadband and high-speed Internet access with lower costs, many online entertainments like online gaming, online chatting, online video viewing and SNS have become part of the mainstream recreational activities, especially among the young people.

3.2.4 Governmental regulations of the Internet in Mainland China

Technonationalism is one aspect of the Chinese Communist Party (CCP)'s stance towards high-tech industries. One rationale is that the CCP desires to rapidly catch up with the technological leadership of the West and achieve economic growth to build and sustain its political base (Liew, 2005). Hence, the development of Internet has been supported by the government, since it has been regarded as an important deployment of conformance to the world's trend of informatization, and an important movement to achieve the goal of developing the economy and the society in the new stage (CNNIC, 2007). By examining the development of world network technology and the management of Internet culture, the Chinese government aims to actively use and effectively manage the Internet. Its main goal is to truly make the Internet a new approach for transmitting advanced socialist culture, a new platform of public cultural services, and a new space of people's healthy spiritual and cultural life, which are all related to the healthy development of the socialist cultural industry, to the cultural and information safety and the long-term stability of the country, and to the overall socialist development with Chinese characteristics (CNNIC, 2008b).

In March of 1998, the Ministry of Information Industry (MII) was established,

whose major task is to administrate the national manufacturing of IT products, national communication and software industries, facilitating the informatization of the national economy and social services (CNNIC, 2005). Later, responsibilities of MII and the former State Council Informatization Office have been transferred to the Ministry of Industry and Information Technology which now becomes the administrative authority of the Internet industry in China (CNNIC, 2009b). A series of regulation procedures, such as *The Provisional Regulations of the People's Republic of China on Managing Computer Internet Information Networks*, *Rules for the Administration of Internet Domain Names in China*, and *Seven National Standards on Information Security*, have been launched to protect and facilitate the development of the Internet, which are also a reflection of the technonationalistic focus concerning ownership of key standards (Suttmeier, 2005).

The Internet may demonstrate its great power as a media to voice public opinion. After the "Sun Zhigang Event", the function of Internet as a means of supervision by public opinions has attracted more and more attention of the government (CNNIC, 2006, 2009b). A dilemma posed by the Internet is between economic growth and political control (Sohmen, 2001), which has influenced the stance of the CCP toward Internet-related industries, reaping the economic benefits while sustaining and reinforcing the political status quo (Qiu, 2004). For instance, each profitable online shop now must obtain a business license before business operation, and the incomes obtained by individuals purchasing virtual currency from the Internet and reselling to others with premiums are subject to individual income tax, under the category of

"income from transfer of property", while the rapidly growing online lottery sales were stopped urgently (CNNIC, 2008b, 2009b . On the other hand, the development of Internet in China has marched into the legal system track, marked by a great amount of regulation, such as *The Telecommunication Regulation of the People's Republic of China*, *Rules for Administering the Internet Information Services*, *Interim Regulations for the Administration of Publishing News Materials on Websites*, *Regulations for the Administration of the Internet Electronic Bulletin Services*, *Interim Regulations for the Administration of Internet Medicine Information Services*, *Measures for the Management of Internet Cafés*, *Regulations for the Management of Places of Internet Accessing*, *Provisional Regulations for Administering Internet Culture*, and so on (CNNIC, 2005, 2006).

MII is the primary body responsible for telecommunications and high-tech industry in China, playing a major role in legislation and regulation of the Internet. However, companies engaged in Internet business face the daunting task of compliance with the web of agencies and regulatory regimes at different levels with conflicting interests (Sohmen, 2001). Many ministries and administrative offices often jointly issue the regulations, laying a foundation for strengthening the administration of the Internet (CNNIC, 2007).

The phenomenon of different bureaucratic agencies with overlapping jurisdiction is neither unique to China nor to the Internet, but the situation is exacerbated by lack of separation between state-owned operation and regulation. It is the complex and unpredictable regulatory environment that leads to self-censorship and internalization

of the regulations (Sohmen, 2001). The self-discipline mechanism is built on a series of projects and activities, including *Self-discipline Treaty of Internet Industry in China, the Internet Trust and Self-discipline Alliance, the Network Copyright Alliance of Self-discipline Steering Committee, the Blog Service Self Discipline Convention with the real name registration system, Sunshine Green Network Campaign*, and *the Internet Manners and Culture Project* with the theme of "civilized website accessing, civilized network establishment and civilized Internet environment" (CNNIC, 2005, 2006, 2007, 2008b). There are also websites such as Illegal and Inappropriate Information Report Center, providing a channel for the public to report suspected illegal or offensive Internet activity and material, and to strengthen self-discipline and public supervision of the Internet industry (CNNIC, 2007). These projects help strengthen the self-discipline and impel the Internet industry to healthy and orderly development (CNNIC, 2007), but the inhibiting nature of government-fostered environment may also curb the innovation and diversity (Ernkvist & Ström, 2008).

With the rapid development of digital entertainments and online leisure activities, the CCP realizes their great influence on young people. For example, on February 15, 2007, fourteen ministries and commissions including the Ministry of Culture issued the *Circular Concerning Further Strengthening the Management of Internet Cafés and Online Games* (CNNIC, 2008b). Moreover, *The Civilized Internet Pact of All Country Teenagers* was also released as a set of criteria for millions of Chinese teenagers to regulate their behaviors when using the Internet (CNNIC, 2006).

3.3 INTERNET ADDICTION IN MAINLAND CHINA

Behind the boom, the Internet is still seen ambivalently as both an economic opportunity and a social threat in China. With more and more public concern, academic research, and professional treatments, Internet addiction has become a hot issue in recent years. Subsection 3.3.1 discusses the public concern about Internet addiction in Mainland China. Subsection 3.3.2 gives a general overview of Internet addiction among Chinese adolescents, and Subsection 3.3.3 describes the current Internet addiction treatments in Mainland China.

3.3.1 Public concern about Internet addiction in Mainland China

With the rapid development of Internet in China, public attention has also been drawn to some downsides of this new media technology. One concern is that Internet use may lead to declines in social involvement, since many of the online relationships represent "relatively weak ties with strangers, acquaintances, or non-intimate kin" (Subrahmanyam et al., 2001, p.94). These types of social contact online are found to provide less social support than more intimate ties do. Therefore, Internet use has been regarded to be associated with declines in the psychological well-being, such as depression, loneliness, etc. (Subrahmanyam et al., 2001).

The violent and sexually explicit content on the Internet is another major concern among parents, educators, and policy makers. "Most commercially available

entertainment software involves aggression and competition", and violence is an integral part of many online games (Subrahmanyam et al., 2001, p.86). Issues are addressed surrounding the aggressive content and their impact on children's behavior. Given the amount of violence in online games, the amount of time children spend playing these games, and their liking for the games, questions are raised whether the games have a deleterious impact on children, and whether playing aggressive or violent online games can increase children's aggressive behavior in other situations (Subrahmanyam et al., 2001).

These questions are especially relevant in the context of various incidents reported in the mass media. With the rapid and great development of the Internet in China, many social problems related to Internet activities and online entertainments have been heavily portrayed in the Chinese media. Adolescents and young adults like college students are particularly susceptible to the lure of the Internet, and they are described as being obsessed with the Internet. People can easily come across kinds of news about tragedies related to the Internet in mass media, and the theme is overwhelmingly about academic failure, reduced work performance, decreased efficiency, juvenile delinquency, social alienation, and other social and psychological disorders. Relevant news reports included: a boy beat his parents for not letting him go to Internet café, and their neighbor called the policeman to pacify the family (Yang, 2002); a thirteen-year-old boy was stuck with the pornographic materials online (Yang & Dang, 2003); a previous excellent student was flunked out due to Internet addiction (Zhou, 2004); a man killed another online game player for theft of

his virtual items (Watts, 2005); a teenager committed suicide after meeting his online lover in real life, only to find she was a middle aged housewife (Xinhua News Agency, 2006); an exhausted students ended in sudden death after his online gaming marathons (Lei, Zhang & Wang, 2007); a child leaped to his death in Tianjin, leaving behind a four-page confession detailing his deeply emotional ties to the characters in a famous online game (Golub & Lingley, 2008); a gang of youths became knife robbers to get money for their Internet use (Tao, Yu, Peng & He, 2009); and a junior high school student smashed the home computers and ran away from home during the Chinese New Year because his mother did not let him play online games (Tu & Wang, 2010). In light of these tragic examples, public concerns continue to mount regarding the risks of Internet use.

With kinds of bizarre and anecdotal stories being featured, Internet addiction has become a social problem more and more prominently (Golub & Lingley, 2008), which lingers on throughout the proliferation and development of the Internet and related online entertainments in China.

3.3.2 Current situation of Internet addiction among Chinese adolescents

In this way, the Chinese society witnessed the birth of a new health risk – Internet addiction disorder (IAD), or pathological Internet use (PIU). China is now struggling with this new plight: It is estimated that approximately 11% of the Chinese Internet users have Internet dependence (CNNIC, 2009a, p.41), and 27.1% of the adolescent Internet users in China have an inclination to Internet addiction, to the detriment of

work, study, and social life (CNNIC, 2008a).

The Internet users under 30 now account for 61.5% of the total Netizen population (CNNIC, 2010), and young people have become the main body of the Chinese Internet users. In massive news coverage, Chinese media metaphorically frame online games and some other online entertainments as Internet opium, electronic heroin, especially for the youth who are more vulnerable. It is adolescents that are the at-risk group as for Internet addiction. Based on Young's (1998a) classic conceptualization of Internet addiction, nationwide investigations have been conducted to find out the current situation of Internet addiction among Chinese adolescents. According to the latest version of research report on Internet addiction among Chinese adolescents conducted by China Youth Internet Association (CYIA), 14.1% of the adolescent Internet users in urban China are suffering from Internet addiction, which is about 24 million of them (CYIA, 2010, p. 7). The rate in rural area is close to this one, therefore the total approximated figure can reach 33 million, almost twice as many as the number in 2005 (CYIA, 2010). There are also about 18.6 million adolescent Internet users in urban China show their tendency toward Internet addiction (CYIA, 2010, p. 8). As for the Internet addicts, there are 5.6% more males than females, but the female group experienced a growth in the latest two years. There is also a growth in the proportion of Internet addicts aged 6 to 23, among which the largest group are those aged 18 to 23 (15.6%), followed by those aged 24 to 29 (14.6%), and those aged between 13 and 17 (14.3%) (CYIA, 2010). Therefore, Internet addiction is an important issue not only among adolescents, but

also among young adults.

As for the degree of Internet addiction, 35.1% of the Internet addicts are of mild degree, followed by moderate degree (34.6%) and severe addiction (30.3%) (CYIA, 2010). On average, the adolescent Internet users in urban China spend 80.2 minutes online everyday, while those with severe Internet addiction stay on average 135.5 minutes online a day, almost double of the time spent by those without Internet addiction tendency (72.7 minutes) (CYIA, 2010). Along with the increase of degree of Internet addiction, Internet users spend more time online. Moreover, 60.4% of the adolescent Internet addicts have tried to go online via mobile, while only 49.4% of those without Internet addiction have tried to use mobile as their Internet access (CYIA, 2010).

Internet addiction can also be divided into different types according to different purposes in using Internet, basically for recreational or practical purposes. The adolescent Internet users with Internet addiction tend to use Internet for recreational purposes, and those without Internet addiction tend to go online for practical purposes. To be specific, 47.9% of the adolescent Internet addicts suffer online game addiction, who spend most of the time online playing games; followed by 13.2% of the total suffering from online relationship addiction, who spend most of the time chatting or making friends online (CYIA, 2010).

The content online is difficult to control, therefore people usually are worried about the violent and sexually explicit information online may harm the adolescents. According to the findings, adolescent Internet addicts show more tolerance of

misconduct, such as playing truant, smoking, drinking, and kinds of violent behaviors (CYIA, 2010). In addition, it is also more difficult for adolescents with Internet addiction to get along well with others, for example peers and teachers. The adolescent Internet addicts usually feel more reluctant to associate themselves with others, and with a rate of 38.0% among adolescents with Internet addiction and 42.2% among those with severe Internet addiction (CYIA, 2010). Accordingly, as the degree of Internet addiction increases, the adolescents show more reluctance to associate with others.

3.3.3 An overview of China's coping with Internet addiction

The increasing public concern about Internet addiction is always accompanied by how to define and cope with the problem. As for conceptualization and diagnostic criteria, academic research on Internet addiction in Mainland China is mainly based on previous foreign studies as reference. The diagnostic criteria of Internet addiction as a mental illness released in Beijing in the fall of 2008 was regarded as a breakthrough in clinical practice in China. The criteria echo Young's (1998a) eight-item Diagnostic Questionnaire based on the criteria for pathological gambling in *DSM-IV*. Dr. Ran Tao, who proposed the criteria, claimed that there was a sufficient sample of patients to carry out proper scientific analysis (Macartney, 2008). The criteria put China at the forefront of this growing field, and led the effort by registering Internet addiction with the World Health Organization (Macartney, 2008).

The diagnostic criteria include four domains: symptom, severity, course and

exclusion (Tao et al., 2010). As for symptoms, there are seven items, including preoccupation, withdrawal, tolerance, difficult to control, disregard of harmful consequences, loss of social communications and interests, and alleviation of negative emotions (Tao et al., 2010). As for the cut-off point, Tao and his colleagues employed a 2 + 1 rule, in which the respondents had only to endorse the first two symptoms, i.e. preoccupation and withdrawal, as well as one or more of the other five symptoms (Tao et al., 2010). Attempts have also been made to define Internet addicts by the amount of time they spent online. As the course criteria, duration of Internet addiction must have lasted for three straight months, with at least six hours of consecutively non-essential Internet use per day (Jiang, 2009; Tao, Huang, Wang, Zhang, & Zhang, 2009).

Although the diagnostic criteria is still pending official endorsement by the Ministry of Health (MOH) and has aroused widespread skepticism in Chinese cyberspace (Jiang, 2009; MOH, 2009), related media reports, research projects, therapeutic clinics, psychiatric counseling centers, and self-help groups have mushroomed in urban areas all over the country, and relevant changes have also been made in related regulations and laws, such as the nationwide anti-addiction system, the regulation of online game industry and Internet cafés, and the amendment to *the Law of the People's Republic of China on the Protection of Minors*.

China was also among the earliest to set up Internet addiction clinics. There are more than three hundred institutions offering treatment of Internet addiction, including clinics, special schools and so on, but only dozens of them are well

developed (CYIA, 2009). The Internet addicts in these institutions are mainly junior high school and high school students, and also some college students (CYIA, 2010). Most of them are deceived or forced by their parents to enter the institutions, and quite few of them go there willingly. These institutions help to prevent and treat Internet addiction, but there are also many problems. The institutions distinguish one another by different higher authorities, and the regulation is now in confusion, with a series of controversial circumstances such as the forty hours per week diagnostic criteria, the application of electroconvulsive therapy, the death of an adolescent Internet addict beaten by staff in an institution, and so on.

There are no generally acknowledged or accepted diagnostic criteria among the institutions treating Internet addiction. At the present time, the diagnosis of Internet addiction is based on observation, counseling interview, or criteria proposed by different researchers, but mainly include time of Internet use as a key factor (CYIA, 2010). Some of the institutions are clinics, and Internet addiction is treated as a new mental illness, while others cope with Internet addiction as a kind of deviant behaviors among adolescents, or a form of escapism for growing pains.

As for treatment or therapeutic measures, psychological counseling, affective communication, study coaching, pedagogical activities, physical exercises, military training, walking trips, and medication are used in combined ways. Closed management is adopted in almost all the institutions (CYIA, 2010; CYRC, 2010). Although these institutions use different therapeutic measures, they are all dedicated to fostering the adolescents' self-control ability and good behavioral habits.

According to the investigation report from the Chinese Youth Research Center (CYRC), more and more Internet clinics tended to provide multiple coping strategies and family communication was regarded as the key element for Internet addiction treatment (CYRC, 2010). However, among so many Internet addiction clinics established in almost every province in Mainland China, the good and bad ones are intermingled. The majority of the clients thought that the treatments were expensive, and the evaluations of therapeutic efficiency varied greatly (CYRC, 2010).

3.4 JUSTIFICATION OF THE RESEARCH

Although there is a heated controversy over the issue of Internet addiction, there has been limited rounded analysis of Internet addiction in the Chinese context. To fill a gap in previous studies, this research examines Internet addiction as an emerging health risk in Mainland China. Subsection 3.4.1 discusses the theoretical significance of this study. Subsection 3.4.2 explains applying the research model to China's Internet development, Internet addiction clinics, and people's everyday health risk assessments. Subsection 3.4.3 outlines implications of the research for future comparative studies. The final subsection shows how the research contributes to the body of knowledge.

3.4.1 Filling a research gap

There is an emerging body of studies on risk, new media technologies,

lifestyle-related behaviors and mental health. However, a gap still exists in the literature concerning risk debate in general and Internet addiction research in particular. This research fills the gap.

As for contemporary sociological research, risk issue has become one of the central preoccupations. However, "priority is given to interpreting the wider cultural and/or political meanings of risk" rather than establishing inquiry into the social representations, professional coping, and people's respond to risk phenomena (Wilkinson, 2010, p. 59). More risk research is in need to grasp how particular risks are defined, mediated, legitimated, experienced, perceived, and/or ignored as a matter of everyday social routine (Adam & Van Loon, 2000, p. 6). Using Internet addiction as a case study, this research can play a role both in understanding works of theory and in the conduct of empirical research.

Internet addiction has received great amount of attention, however, attempts to understand how it works as a health risk have been scarce. Previous studies often assume or try to prove the existence of Internet addiction, failing to incorporate social process into the dynamics of the disorder (Scheff, 1984), therefore they cannot totally encompass the underlying structure of the term "Internet addiction". Different from the currently mainstream studies on Internet addiction, this study offers an opportunity to broaden level of analysis, and therefore increase our awareness in Internet addiction as a complex and confusing area of inquiry (Scheff, 1984).

3.4.2 Applying research model to China's Internet environment

Within less than two decades, Internet addiction has undergone a remarkable metamorphosis, from psychiatric curiosities to publicly known health emergencies. Thus, the pieced together process of Internet addiction as a new health risk in China is of great research significance both theoretically and practically. This study takes a stance by regarding Internet addiction as an emerging health risk, and depicts the staging of and the coping with this risk. In this way, this research may provide clues to institutions and individuals coping with the new and emerging plight

This study does not discard the findings and insights that are available in psychiatry and clinical psychology. Studies of this kind are based on intimate and detailed knowledge, and therefore are clearly of great value. The findings of this study may be transformed into opportunities for future expansions of Internet addiction clinics, and may provide guidance for policy makers to formulate programs in the areas of regulation, prevention, and intervention in the future development of Internet-related health care services.

The expert domain of risk analysis, with statistically documented effects, has been shown to be systematic events calling for political regulation, as well as an incentive for businesses (Beck, 2009). Chinese Internet project was listed on the construction agenda of the State Information Infrastructure. The study on the health risk of Internet addiction may influence the construction and management of Internet culture in China, with people's daily Internet use brought under social scrutiny and medical intervention.

However, this kind of studies is not enough by itself. A high value is usually placed on research which "reveals the character of society in lived experience and makes clear the conditions under which this is fixed in place or made to change" (Wilkinson, 2010, p. 103). The present health risk research can also fulfill the task of categorizing individuals in terms of dealing with Internet addiction as a new health risk in their everyday experiences (Wilkinson, 2010).

3.4.3 Implications of the research for future comparative studies

China is currently in a transitional period, furnishing the study of risk with a different social context. The development of the Internet in China is integrated into the tasks in China's advance toward an industrialized, information-based, urbanized, market-oriented and internationalized country (CNNIC, 2008b). Thus, China also strengthens the efforts to develop and manage Internet culture and foster a good cyber environment (CNNIC, 2008b).

As a country with an authoritarian government and the highest absolute number of Internet users in the world, China provides an interesting context to study the case of Internet addiction as an emerging health risk. The theoretical framework makes possible not only the case study of Internet addiction as a new health risk, but also the concrete historical-empirical analyses of the related risk definitions and people's lives (Adam & Van Loon, 2000). Based on the current research, other researchers may generate patterns of public concern which seem to replicate the proliferation of pressure groups, expert advisers, scientific and political debate as well as extensive

media coverage previously associated with Internet addiction in Mainland China (Adam & Van Loon, 2000).

Internet has such a critical impact on human health that can no longer be understood and analyzed in a purely national context: it needs to be observed at a regional and even global level. Internet addiction is becoming a prominent issue both in China and in many other societies. In addition to the globalization of potential risks, the perception of Internet addiction as a specific health risk may be subject to cultural variation, or independent of national contexts; thus, this study brings fresh perspectives to the understanding of health risk issues in a non-Western social background, making future comparison across study findings meaningful.

3.4.4 Contribution to the body of knowledge

The findings of this study may serve as a basis for those looking forward to expanding the field of Internet addiction research not only as a basis of formulating a more sustainable foundation for the development of treatment approaches, but also as an interesting vantage point to think about social dynamics in current China, as well as an accumulation of relevant knowledge.

Sociological interests of risk research can be framed via the realist and social constructionist accounts (Adams, 1995; Denney, 2005; Lupton, 1999), however, nowadays, the dualistic way of thinking is becoming incapable of grasping reality under the conditions of the current societies (Beck, 2009). This study attempts to go beyond the dichotomy between realist and social constructionist approaches and

scholarly weave together very different analyses of risk (Adam & Van Loon, 2000). Consequently, this involves shifting the plane of discussion from epistemological and metaphysical preoccupations to socially embedded analyses of risks, technologies and ways in which "risks are lived, perceived, conceptualized, defined, mediated, legitimized, and/or institutionalized" (Adam & Van Loon, 2000, p. 8).

Surrounding the dominant risk paradigms, there are pluralisti· debates and studies, through the growth of disciplines, sub-disciplines and schools of thought vigorously competing for recognition and ascendancy in the interpretation and management of the risks of modern technological society (Beck, 1992, p. 4). Accordingly, researchers who want to conduct the study of risk have to adopt inter-discipline approach. Thus, an integral part of the research efforts is to search for ways to engage with risk relations as social practices in a variety of fields (Adam & Van Loon, 2000), for instance the staging and coping process in this study. In the domain of expert analysis, the concept of risk is used to refer to a calculation of probability, while at the level of popular understanding, risk tends to be regarded as a synonym for danger or harm experienced in various domains of people's lives (Wilkinson, 2010).

3.5 SUMMARY

This chapter provided insights in the research case issue (Internet addiction in Mainland China) for this study. The chapter met its objectives by providing a profile of Internet development in Mainland China, the emerging social problem and health

risk of Internet addiction, and justification of the research. This chapter highlighted the implications of this research for China's Internet development, Internet addiction clinics, and people's everyday health risk assessments. A brief on contribution to the body of knowledge of this study was also presented.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 INTRODUCTION

Chapter Three provided the background information on Internet addiction in Mainland China and justification for the present research. The objectives of this chapter are to discuss the research methodology and provide a brief of methods and techniques applied in this research. Research is a process of investigating, scrutinizing or studying an issue, and is usually systematically conducted by using a set of established guidelines and procedures according to appropriate scientific methods (McQueen & Knussen, 2002). Accordingly, following the introductory Section 4.1, subsequent sections discuss the overall research methodology, research design, data collection methods and the techniques of data analysis.

4.2 RESEARCH METHODOLOGY

There are a number of ways to address a research issue, the choice of which approach to take usually involves a number of factors. In many cases, the research area and research questions point to a particular type of study, while in other cases, practical or ethical issues may play a part (McQueen & Knussen, 2002). Subsection

4.2.1 discusses the case study inquiry; and Subsection 4.2.2 presents the logic of triangulation used in this research.

4.2.1 Case study inquiry

The focus on the conjunctions between risk and health care provides room for a broad range of research agendas and methodological approaches (Wilkinson, 2010), and only through case studies can researchers find out how a particular risk is defined, mediated, legitimated, experienced, perceived, and/or ignored (Adam & Van Loon, 2000). In this research, the case is considered Internet addiction as a new risk in the Chinese context.

According to Yin's (1984) definition, a case study is an empirical inquiry that "investigates a contemporary phenomenon with its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (p. 23). Thus, case study inquiry is particularly valuable to introduce the researcher to a new research situation, such as Internet addiction as an emerging risk in China.

There are four key aspects of case studies, namely in-depth investigation of a small number of cases, examination in context, multiple data sources, and emphasis on qualitative data and analysis (Chamberlain, Camic, & Yardley, 2004; Lazar, Feng & Hochheiser, 2010, p. 147). Case study inquiry usually concentrates on a single unit of interest, which could be an individual, a family group, organization, institution, event, issue, or some type of phenomenon, where the focus of the research is the unit itself

and usually over a period of time (McQueen & Knussen, 2002; Poindexter & McCombs, 2000). Therefore, case study inquiry provides researchers the opportunity to contextually examine issues related to process and experience, to utilize data collection and analysis methods from multiple perspectives to the complexity of the situation or environment, and to produce a holistic and comprehensive understanding of the issue under study (Baker & Charvat, 2008; Patton, 2002).

To put it in another way, a case study is a research endeavor in which data collected by multiple methods are used to develop an intensive, detailed, holistic, and multi-perspective understanding of a single case or set of cases in order to generalize those findings to other similar cases (Baker & Charvat, 2008, p. 218). For the purpose of this research, case study will be considered the lens of a research approach, which incorporate both quantitative and qualitative data, and will be looked at as a holistic methodology in which to approach research questions about Internet addiction as a new health risk.

4.2.2 Triangulation

As a research approach in social science, case study inquiry utilizes a triangulated research strategy in which data are collected from multiple sources and different methods converge (Baker & Charvat, 2008). The term triangulation originally comes from navigation, where "multiple reference points are used to locate an exact position" (Williams, Rice & Rogers, 1988). Triangulation describes the idea that looking at something from multiple points of view improves accuracy, as a second

point of view on a phenomenon creates a triangle (McQueen & Knussen, 2002). As the name suggests, triangulation as a multi-method research approach uses more than one research method to answer a research question (Poindexter & McCombs, 2000). On this account, using triangulation, researchers can reveal different dimensions or aspects of the phenomenon being investigated and depict it more accurately and completely, and therefore, bias of the researcher can be minimized and the validity of the findings can be enhanced (Denzin & Lincoln, 1998). Thus, researchers gain more confidence in the findings since they are supported through multiple methods and multiple sources (Baker & Charvat, 2008).

Each method has its advantages and limitations, therefore researchers sometimes use multiple methods in combination to reduce the shortcomings of data collected by a single method (Dorsten & Hotchkiss, 2005). The rationale of triangulation is that each method will contribute more information and the weakness of any single method can be balanced by the strengths of other methods (Williams, Rice & Rogers, 1988). In research, the use of multiple tools or methods to explore a phenomenon, or the employment of multiple interpretive perspectives, are all examples of triangulation (VanderStoep & Johnston, 2009). Another advantage is that triangulation permits comparison of the results from each method to see whether different methods yield consistent results (Dorsten & Hotchkiss, 2005).

There are several types of triangulation, including triangulation of observers, measures, theories and methods, sequentially or simultaneously (Poindexter & McCombs, 2000). For instance, the extent to which different methods provide

consistent information, and the extent to which different theories or explanations provide adequate accounts of the same data (McQueen & Knussen, 2002). The combinations may be endless, but the real purpose of the approach is to strengthen the research design and increase the validity of the results (Poindexter & McCombs, 2000). The study adopts a multi-method approach, and the data are gathered by both quantitative and qualitative methods.

4.3 RESEARCH DESIGN

Research design is the network of steps that a researcher takes to conduct a research project. Research design usually starts with an initial interest idea or theoretical expectation, and proceeds through a series of interrelated steps to make concepts, methods and procedures well defined.

Whilst a large amount of research is devoted to understanding different kinds of risk issues relating to communication technologies and health care, there is no consistency in approaches to research design, data collection and analysis (Wilkinson, 2010). The major focus of this research is to uncover Internet addiction as a health risk in Mainland China. In particular, this research looks into how Internet addiction has been reported as an emerging health risk to raise public concern; how is the social and psychological well-being of the Internet-dependent group, and what are the predictors of Internet addiction and other relevant risk behaviors; additionally, in clinical practice, what are the signs of Internet addiction showed by the young people on admission and what are the treatments provided by the Internet clinic to help

restore health.

Accordingly, content analysis was conducted, combined with secondary research and ethnographic research in Internet addiction clinic. This section presents the research design. Subsection 4.3.1 discusses content analysis applied in this research. Subsection 4.3.2 provides a brief on the secondary research of medical records collected within an Internet addiction clinic. Subsection 4.3.3 illustrates the ethnographic research conducted to examine the symptoms of and treatments for Internet addiction in the clinical setting.

4.3.1 Content analysis

Mass media play an important role in the staging of health risks, especially for the new emerging ones, such as Internet addiction. As for this research, examining the media coverage of Internet addiction can generate more information about the context of the case under study. To investigate media reports of Internet addiction, content analysis is conducted.

Content analysis is a multipurpose research method developed specifically for systematic investigation of texts, particularly in mass communications research. Krippendorff (1980) defines content analysis as a unobstrusive research technique "for making replicable and valid inference from texts to the context of their use" (p.21).

Content analysis is appropriate to analyze not only words, sentences, paragraphs, images, but also the whole text of news reports. Content analysis can be used to

describe the characteristics of texts, and then the characteristics can be compared over time to identify trends or across sources to detect similarities and differences (Poindexter & McCombs, 2000; Williams, Rice & Rogers, 1988). In previous research, content analysis has been used to assess the image of particular groups in society (e.g., Kim & Lowry, 2005; Harwood & Anderson, 2002; Signorielli, 1989, 2004, 2009), establish a starting point for studies of media effects (e.g., Gerbner, Gross, Morgan, Signorielli & Jackson-Beeck, 1979; Gerbner, Morgan, Gross, Signorielli & Shanahan, 2002; Lowry, Ching, Nio & Leitner, 2003), compare media content to the "real world" (e.g., Lowry, 1981; Signorielli, 2009), and so on.

Content analysis is context sensitive and therefore can help depict the backdrop of the case under study, but it also has some limitations. For example, content analysis cannot deal with subtle things such as process and ideologies; it cannot serve as the sole basis for claims about media effect; and researchers who use different tools of measurement may arrive at different conclusions. Therefore, secondary research and ethnographic research are also adopted as research methods.

4.3.2 Secondary research

As for risk issue, one focus of this research is on the at-risk group or individuals. In the expert domain of risk analysis, studies are conducted with "the average individual" in mind, which creates opportunities to document effects statistically (Beck, 2009; Wilkinson, 2010). Conducting within the Internet addiction clinic environment, this research also attempts to take care of the expert or professional

domain of risk analysis, for instance, the key variables specified by the health care professionals, and the relationships among these variables. Accordingly, as part of the investigations, this research performs analysis on the data previously collected by the professionals in the Internet addiction clinic.

Whenever the research data are reused by the original researcher or by someone else not associated with the project, the research is termed "secondary research" and the data "secondary data" (Poindexter & McCombs, 2000). There are many instances in which the data required to answer the research questions have been already collected by others (McQueen & Knussen, 2002). Secondary research, is the re-analysis of data collected by prior researchers, in which one obtains a copy of someone else's data and undertakes his/her own statistical analysis.

It is possible and indeed quite acceptable to rely on secondary data for a study (McQueen & Knussen, 2002). Many previous studies exploring changing trends are based on the information already available in governmental and non-governmental statistics, obviating the need to carry out a lengthy study again (McQueen & Knussen, 2002). Similarly, research into health risk and treatment can be well served by using the data collected by the health care professionals at regular intervals in the clinic. Therefore, this research attempts to explore and analyze the existing data in the clinic to answer part of the research questions.

Secondary data analysis, or analysis of existing statistics, as another kind of unobtrusive research method, guarantees that the researcher is not intervening in the topic of study through the data-gathering process (Williams, Rice & Rogers, 1988).

Another advantage is that the scope of secondary data exceeds what an individual researcher might achieve (McQueen & Knussen, 2002). As for this study, the secondary data offer more cases with a longer time range, which can provide a historical or conceptual context to locate the following deeper investigations. Moreover, secondary data is at least a supplemental source of data (VanderStoep & Johnston, 2009).

Secondary data analysis is of great potential value to social science research, however, it also has weakness. Secondary data may not be in a form exactly suited for the researcher's goals, since they are usually collected in their original format to meet a particular research purpose (McQueen & Knussen, 2002). Thus, the secondary data may not perfectly cover the secondary researcher's interest, and the measurements of the variables and concepts may not be altogether reflect the secondary researcher's exact concerns (Williams, Rice & Rogers, 1988). By conducting secondary research, these disadvantages must be understood.

4.3.3 Ethnographic research

Whilst medical and psychological research tends to explain risk issue as a matter of brain function or personal aptitude, social science research brings emphasis to the ways in which individuals' understandings about risk are shaped by social environments of everyday life (Wilkinson, 2010). Sociologists focus on how social relationships in specific institutional settings influence people's perception and experience of specific risk, and a great deal of sociological research is "committed to

exposing the ordinary and situated ways in which individuals and groups perceive, talk about and respond to risk" within the institutional context and social settings (Wilkinson, 2010, p. 59).

By reviewing previous risk studies, Wilkinson (2010) argues that researchers venturing into the field with the empirical task of detailing the ways in which problems of risk feature in lived experience face the methodological problems. There is a great concern with establishing the social meaning of risk in people's daily life based on more ethnographic and qualitative approaches to document the bearing of a health risk issue upon specific health behaviors and patient-practitioner interactions (Wilkinson, 2010). In order to piece together an adequate understanding of how and in what ways people's everyday life is being transformed due to Internet addiction as an emerging health risk, this study focuses on the actual dynamics of subjective and biographic experiences on a very grounded and ethnographic plane within the clinic settings.

As for this part, clinically oriented ethnography is adopted as the research method. Literally, ethnography means a portrait of a people, which is a written description of a particular culture, the customs, beliefs, and behavior, based on information collected through fieldwork (Harris & Johnson, 2003). When used as a method, ethnography typically refers to fieldwork conducted by an investigator living with and living like those who are studied (Van Maanen, 1996). This approach allows the researcher "to experience events with group members while maintaining the professional distance necessary to conduct research (Roper & Shapira, 2000, p. 2).

Accordingly, Roper and Shapira (2000) point out that "this blend of knowing from both an insider's perspective and an outsider's analysis allows deep and rich insights about the behaviors and beliefs of individuals as they navigate their social world" (p. 2).

Ethnographic research is one of the central qualitative approaches, and it employs a variety of techniques that emphasize revealing the meanings attached to social settings by the participants and functions of human actions and interactions (McQueen & Knussen, 2002). Typically, ethnographic approach depends on intensive open-ended interactions with the individuals under study (Dorsten & Hotchkiss, 2005).

As a social science research method, ethnography relies heavily on observation, participation, and up-close personal experiences. Typically, the ethnographic researchers go into the field, join a group of people and live with them in the natural settings for a long enough period of time in order to understand how they construct meaning and identify significant categories with reference to the social context (McQueen & Knussen, 2002; Potter, 1996). Ethnography is concerned with describing social groups or situations, for instance, delineating behaviors and shared beliefs of a particular group of people, and through this gaining an understanding of how and why the participants function and behave as they do within their culture (McQueen & Knussen, 2002).

An ethnographic approach might be employed to study what happens in particular well-defined environments, such as a hospital ward, or in a particular group with a

common purpose (McQueen & Knussen, 2002). This research approach is essentially phenomenological, and there is an assumption that researchers should put aside their own beliefs and values before exploring the target group (McQueen & Knussen, 2002). In previous studies, ethnography has been widely used in studying many human arenas, including public health, schooling, urban development, and so on. It is particularly suited to exploratory research, like this one dealing with a new health risk or unsaid residual deviance.

4.4 DATA COLLECTION

The present research relies upon multiple methods and techniques to act as sources of corroborating data (Lazar, Feng & Hochheiser, 2010). This section provides details of the data collection methods applied in the three parts of this research. Subsection 4.4.1 discusses the data collection for content analysis; followed by Subsection 4.4.2 gives a brief on the secondary data collected by health care professionals, Subsection 4.4.3 discusses the data collected by ethnographic methods, and Subsection 4.4.4 outlines the ethical issues considerations.

4.4.1 Internet addiction representation in Chinese newspapers: 1998-2009

Poindexter and McCombs (2000) provide a brief outline of the research phase of content analysis. After conducting in-depth literature review and background search, the researchers come up with research questions, and then locate materials to be

content-analyzed. Followed by the step to figure out time period, unit of analysis, codebook, budget and ethical standards; training of content analysis coders and pretesting codebook on small sample of content are needed to be done. The inter-coder reliability is then calculated, if below 80 percent, codebook needs to be revised and coders are retrained to improve inter-coder reliability. After that, the researchers test revised codebook on new sample of content and calculate new inter-coder reliability. Once inter-coder reliability reaches 80 percent or higher, the researchers can go finalize codebook and make copies of the guide for coders to use as coding sheets, then code all materials, process data, analyze data using appropriate statistics and ethical standards, and finally write report (Poindexter & McCombs, 2000, p. 190).

As for content analysis, WiseNews is chosen as the database, which is the main product offered by Wisers, one of the largest Chinese news content providers in the world, maintaining a news archive of over 1,600 key sources and covering the Greater China area including Mainland China, Hong Kong, Macau, and Taiwan, with an unmatched breadth of local newspapers, dating back to 1998 (Wisers, 2010). The first news report about Internet addiction in Greater China was in 1998, therefore the content analysis examines the representation of Internet addiction in samples of news reports from 1998 to 2009. The study attempts to investigate the reporting themes or frames about Internet addiction in the newspapers as the staging of this health risk, and pays particular attention to overall representation and trends.

In content analysis, media texts can be organized into various categories, which

then can be counted. Content analysis also examines and interprets which categories occur in which context, the purpose, and implications (Hansen, Cottle, Negrine & Newbold, 1998). On one hand, the purpose of the study and the unit of analysis dictate the categories that are developed for coding (Poindexter & McCombs, 2000). On the other hand, the categories can be treated as indicators of some phenomenon in wider social context. This analysis explores the frames and frequency of Internet addiction portrayals, and the coding categories also reflect this research purpose. These categories can be employed to analyze as the staging of this emerging health risk and also provide a broad picture of Internet addiction in Mainland China.

The codebook is key to producing valid results in content analysis, therefore reliable coding is required for valid results. In content analysis, special attention is required to evaluate categories. The researchers should be able to achieve a high level of agreement between coders. Inter-coder reliability tests the levels of agreement among independent coders who code the same content using the same coding instrument, and Intra-coder reliability tests the same individual codes a set of data twice, at different times, and the reliability statistics are computed using the two sets of results. The reliability tests on samples of the coding will help to achieve a high degree of reliability for the variables and the study as a whole (Poindexter & McCombs, 2000). The discrepancies should be discussed to improve inter-coder reliability. Some of the discrepancies are due to routine or clerical errors and some are due to differences in opinion as to how to categorize the content, thus researchers should pay attention to both types of discrepancies (Poindexter & McCombs, 2000).

4.4.2 Secondary data collected by health care professionals: 2005-2010

Secondary data are the data collected and organized by other researchers, but forming the basis for new, or current research (McQueen & Knussen, 2002). In this research, the data used for secondary research are collected by health care professionals in Internet addiction clinic. After securing permission and access to the data and codebook from the primary researchers in Internet addiction clinic, the researcher re-analyzes the data according to the research interest of this study.

Many of the steps in the research phase, including sampling, questionnaire writing, and hiring and training interviewers, can be skipped in this part of research. However, secondary data analysis does not mean that the standards for scientific research are any less stringent. The responsibility for thoroughly checking out the quality of the data and methods for collecting the data rests on the shoulders of the secondary data analysis researcher. Even though the secondary data analyst is stuck with the original question phrasing, sampling frame and procedures, if the overall quality of the work is acceptable, the researcher can proceed with the analysis (Poindexter & McCombs, 2000, p. 282). Thus, after double checking the data, analyses are conducted to examine the variables and the relationships among them, highlighted by the professionals in the expert domain of Internet addiction as a health risk.

4.4.3 Ethnography in the Internet addiction clinic

In practical terms, ethnography entails a researcher "spending considerable time at the location", for instance, program site, cottage, hospital, home, and so on, "conducting interviews as well as extended observations of individuals and interactions among the relevant parties for as long as it takes to develop what is perceived to be a valid understanding of the case" (Baker & Charvat, 2008, p. 218). As the setting for the ethnography, this study chooses an in-patient ward of a hospital or clinic center designed to treat patients who are hospitalized for Internet addiction disorder.

The ethnographic research starts as soon as the researcher enters the new situation, and "once group access is attained and the researcher's role is determined, the process of observation begins" (VanderStoep & Johnston, 2009, p. 239). The researcher of this study entered the clinical setting as an intern, and got the permission to attend and observe their daily events on the ward. At first, the researcher simply observed, attending to the details of the setting, people, and activities. Next, the researcher strived to describe the settings, the patients, the staff, and their activities. The third step is to attempt to understand the meaning of these activities for individual participants and/or the group identity. Throughout these three stages the researcher is taking copious field notes, which are usually characterized by "thick description" (VanderStoep & Johnston, 2009, p. 239). Moreover, the ethnographic researcher must continually negotiate the tension and keep "an elusive balance between involvement, sensitivity, empathy, and perspective-taking, on the

one hand, and analytic distance, on the other" (VanderStoep & Johnston, 2009, p. 202).

Ethnographic research is not confined to any method of data collection (Dorsten & Hotchkiss, 2005). The methods adopted to collect data are varied and suited to the context. For instance, the researcher observes what happened, keeps field notes, interviews the people involved both formally and informally, reads any available documentation, and in fact any method that might offer an insight into the context, the target group, and what happens (McQueen & Knussen, 2002). Accordingly, data for this study are collected from a combination of observations, field notes, interviews, archival materials, examination of documents, and so on.

Particularly, observation is a procedure for gathering data in which the researcher does not manipulate key elements of a study, but instead records behavior as it occurs naturally; and participant observation required that the researcher becomes involved with, indeed becomes a part of, the society he/she is studying (McQueen & Knussen, 2002). Only by developing a history of experience within a particular social context would it be possible to provide a form of in-depth and holistic analysis of the structure and processes of the culture (McQueen & Knussen, 2002). The significance of participant observation is involvement and experience with the object of study (McQueen & Knussen, 2002). This study adopts participant observation as one of the methods to collect data. The researcher keeps records of observations, makes them as detailed as possible, including details of participants, times, events, activities, situation, context, and anything else that was going on at the time of observation, as

well as researcher's own reflections, thoughts and feelings.

Interview is another central research instrument for data gathering in this part. As a method, interviews are conducted not only to gain information, but also to discover and understand in a systematic way the subject's everyday life world as it relates to the topic of interest and the meaning of the issue for them, in a qualitative rather than quantitative form and with an emphasis on the description of specific experiences (Baker & Charvat, 2008). There are many types of interviews for research purpose, and the most important distinction is between structured and unstructured. In qualitative research, interviews are generally semi-structured at most, using open-ended questions and encouraging free expression on the part of the interviewees. In-depth interview is a common approach in ethnographic studies and the aim is to learn about and describe "the personal accounts and constructed meaning of events and experiences of individuals" (Baker & Charvat, 2008, p. 274). Thus, in-depth interview is used as data collection method to further answer the research questions about the felt or lived perspective of the individuals who have had a particular experience of going through Internet addiction treatment. The interviewer has a set of topics or questions but goes into the interviews prepared to deviate from that set, and later follow up with more semi-structured interviews, to further probe, explore and clarify.

4.4.4 Ethical issues consideration

The question of ethics is important in research with human populations. Although

most social research is comparatively benign, there are still three mostly identified ethical principles need to be kept in mind, namely "respect for persons, beneficence, and justice" (Dorsten & Hotchkiss, 2005, p. 32). Accordingly, three types of activities are designed to ensure protection of the human subjects, "informed consent, risk and benefits assessment, and equitable selection of subjects" (Dorsten & Hotchkiss, 2005, p. 33). There are more general principles and ethical standards, such as fidelity and responsibility, integrity, and respect for people's rights and dignity (Spatz & Kardas, 2008). There is the issue of protecting personal and organizational privacy in research, when data are recorded or observed from a private communications network (Williams, Rice & Rogers, 1988).

In this research, the organizational and personal privacy is protected with full respect and consideration of confidentiality agreement. Other ethical issues surrounding the proposed research are also considered. Working as an intern, the researcher discloses the identification to the staff and patients in the Internet addiction clinic, tells them that the data collected will be used for academic research on Internet addiction disorder, and respects their rights and choices.

4.5 TECHNIQUES OF DATA ANALYSIS

Having collected the data, the final stage of the research process consists making sense of the data, first for the researcher himself/herself, then for a wider audience (Barker, Pistrang & Elliott, 2002). This stage can itself be broken down into analysis and interpretation. Data analysis means establishing what the findings are, and how

the data answer the research questions (Spatz & Kardas, 2008). Interpretation involves understanding the meaning of the results, and their scientific, professional, and even broader implications (Barker, Pistrang & Elliott, 2002). Multiple research methods and data-collecting techniques are used in the present research, thus triangulation is the principle by which the meaning is revealed through a convergence in the data.

The tension between the generality of approach in causally-driven quantitative research and the individuality of particular cases is not only in communications studies, but indeed in the social sciences in general (Chaudhary, 2007). Quantitative/qualitative distinction is a mistaken dichotomy between the two kinds of justifications of research designs, and for data analysis, both are indispensable (Spatz & Kardas, 2008). This section presents a brief on the techniques of data analysis used in the current research for both kinds of data. Subsection 4.5.1 discusses the quantitative data analysis, and Subsection 4.5.2 illustrates the qualitative data analysis techniques.

4.5.1 Quantitative data analysis

Quantitative data analysis usually involves preparing the data, exploring the properties, conducting statistical tests to address the research questions, and evaluating statistical significance (Barker, Pistrang & Elliott, 2002).

As for the content analysis of newspaper coverage of Internet addiction issue, it is partially quantitative, resulting in a numerical description of features of the texts

within the given time range. Content analysis involves establishing categories and then counting the number of instances used in the texts (Joffe & Yardley, 2004). The content is analyzed quantitatively as frequencies or percentage of the occurrence of particular categories, or to determine the reliability of coding (Joffe & Yardley, 2004; Williams, Rice & Rogers, 1988). However, not all content analysis results in counting, and a qualitative assessment of the materials is also used.

As for the secondary data in this research, it is basically quantitative analysis. The steps involved in the quantitative analysis are data entry, data checking, data reduction, exploratory analyses, statistical significance testing for answering research questions, and analyzing the strength and clinical significance of effects. Firstly, the data are entered into the SPSS data editor. Data errors can arise either from typing mistakes at data entry or from incorrect computer commands, thus it is important to check for both possibilities (Barker, Pistrang & Elliott, 2002). Some simple descriptive analyses are performed to check whether the data are being processed correctly (Tabachnik & Fidell, 2001). These also provide some basic statistics for the results section (Barker, Pistrang & Elliott, 2002). Data reduction involves condensing the data, to make them more manageable and easier to analyze. One obvious approach consists of simply dropping some of the variables from the data set, which are collected by original researchers but not related to the research interest of this study (Barker, Pistrang & Elliott, 2002). Once the basic variables have been decided, the data can be further reduced by summing or averaging the items of some multi-item scales to provide a total score or subscale scores by using the SPSS

Compute command and analyzing the scale's reliability (Barker, Pistrang & Elliott, 2002). A third method of data reduction is factor analysis, a multivariate statistical technique designed to determinc the structure of a set of variables (Tabachnik & Fidell, 2001). Then, broad research questions are addressed with exploratory analyses, some of which may not be precisely planned in advance; instead, the researcher follows up interesting leads as the analysis progresses. More focused research questions or hypotheses call for confirmatory analyses. For some research questions, simple descriptive or correlational statistics can suffice, while others may require complex multivariate methods (Barker, Pistrang & Elliott, 2002).

4.5.2 Qualitative data analysis

The analysis of qualitative data is an ongoing process that can begin as early as the data collection begins (McQueen & Knussen, 2002). Qualitative analysis is an inductive procedure, which involves three related processes: identifying meaning, categorizing, and integrating. The data analysis and writing up are also closely intertwined in qualitative studies (McQueen & Knussen, 2002).

Both quantitative and qualitative techniques are appropriate for interpreting content analysis data. Compared with quantitative data analysis, qualitative analysis allows research questions and answers to arise together in the course of the involvement with the texts. Thus, qualitative approaches to text interpretation should not be considered incompatible with content analysis. The newspaper reports are also analyzed qualitatively to develop an understanding of the use and form of various

texts (Williams, Rice & Rogers, 1988).

Ethnographic data are the main body of the qualitative data of this research. Ethnographic data are usually highly descriptive, and come in various forms, such as field notes, observations, transcripts from interviews and other kinds of materials, as well as personal introspections, narrative and psychometric measurements, in fact, anything at all that can offer an insight (McQueen & Knussen, 2002). This means that the data are often rich, fascinating, and can provide the researcher and the audience with the "felt shared experience" of the participants located in a particular time and place (Baker & Charvat, 2008, p. 219), but they are also unstructured and voluminous. The central tenet of the ethnographic research is that the researcher must try to understand a culture from the perspective of the members of that culture (VanderStoep & Johnston, 2009). Qualitative researchers are faced with finding ways of systematically analyzing the data (Barker, Pistrang & Elliott, 2002). Starting with preparing and organizing the data, the analysis involves three related processes, namely identifying meanings in the data, grouping ideas into categories, and integrating them into a set of themes or conceptual framework (Barker, Pistrang & Elliott, 2002).

As for ethnographic data analysis, the materials may be presented by organizing them chronologically into a narrative (Barker, Pistrang & Elliott, 2002). Ethnographic researchers may also look across individuals in order to identify common themes or patterns about the phenomenon being studied, and describe variations within the phenomenon (Barker, Pistrang & Elliott, 2002). In the

descriptive approach, the researchers restrict themselves to arranging the materials into a story, which is allowed to speak for itself (Barker, Pistrang & Elliott, 2002). However, researchers usually go beyond the descriptive level to understand the meaning of individuals' situations by using a particular theoretical framework to interpret the data (Barker, Pistrang & Elliott, 2002).

VanderStoep and Johnston (2009) maintain that the sign of a good qualitative data analysis is that the analysis provides a new and compelling interpretation of the data. By new, it means "novel, unique, and engaging"; and by compelling, it means "logical and supported by rich descriptive examples that persuade the reader to adopt the researcher's interpretation" (VanderStoep & Johnston, 2009, p. 170). As for good ethnographic research, "the interpretation of the data speaks to the lived experience of the research participants and others who identify with them" (VanderStoep & Johnston, 2009, p. 170).

4.6 SUMMARY

This chapter discussed various types of research methodology. An overview of research design, data collection methods and techniques of data analysis used for this research was also provided in the chapter. The following chapters will provide analyses of the data collected for this research.

CHAPTER FIVE

STUDY I: CONTENT ANALYSIS OF MEDIA COVERAGE OF INTERNET ADDICTION

5.1 INTRODUCTION

To better investigate the issue of Internet addiction in China, studies were conducted at different levels. As the beginning, this chapter dealt with the macro level, to provide the context for the following studies. The objective of this chapter is to depict an overall picture of Internet addiction in media reports and the variations over time. Specifically, this study examines the media coverage of Internet addiction in the Region of Greater China, especially the Mainland Chinese newspapers in the past twelve years. This study combines the diffusion approach (Rogers, 2003) and the functions of frames (Entman, 1993), and thus gives a more detailed picture of how media coverage of Internet addiction changed over time. Employing a content analysis of newspaper articles from 1998 to 2009 in Mainland China, this chapter showed that the trend of media coverage regarding Internet addiction manifested itself following the classic S-shaped diffusion curve. The associations between phases, frames, prominence, and reporting variables were also tested. The findings revealed the role of media frames in constructing public consciousness about a specific issue (Pan, 2009).

Following this introductory section, subsequent sections review the relevant literature, elaborate the conceptual framework, and propose the research questions of Study I, discuss related research methods, show the results and provide further discussion. Based on the results, limitations and suggestions for future studies are also provided.

5.2 CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS

The theory of diffusion of innovation is one of the classical approaches to the studies of the diffusion process of new ideas, therefore it is quite appropriate to be adopted for investigation of the staging of Internet addiction as an emerging risk. This study focused on newspaper reportage, hence the concept of "frame" was used for data analysis. The relevant literature was reviewed and research questions were proposed accordingly.

5.2.1 Diffusion of innovations

This chapter is based on the application of a well-researched theory with a long history, i.e. diffusion of innovations. "Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003, p.35). Diffusion of innovations is a special type of communication, in which the messages are perceived as new ideas (Rogers, 2003). As its definition suggests, diffusion theory examines how new ideas, practices or

objects are introduced and adopted, and has a special focus on the information flows and communication relations (Lievrouw, 2002).

Rogers (2003) has provided a broad set of insights into the diffusion of innovations, which cover both macro and micro levels, and the demand side as well as the supply side (van de Wijngaert & Bouwman, 2011). The main elements of the framework are an innovation, communication channels, time, and social system (Rogers, 2003). Rogers and Shoemaker (1972) incorporate the well-known Lasswell (1948) formula, or the SMCRE model (Source-Message-Channel-Receiver-Effect) into diffusion of innovations theory (Karnowski, Von Pape, & Wirth, 2011). Communication channels refer to the means by which a message gets from a source to a receiver. In diffusion studies, communication channels usually are categorized as either mass media or interpersonal in nature (Rogers, 2003). Mass media channels are more effective in creating knowledge of innovations (Rogers, 1986). As means of transmitting messages, mass media channels are those involving a mass medium such as newspaper, radio, television, and so on, which can reach a large audience rapidly, and create knowledge and spread information (Rogers, 2003).

By definition, innovations diffuse through time (Rogers, 2003). The diffusion process begins with the knowing about an innovation, to forming an attitude toward it, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision (Rogers, 2003). Thus, there are five steps in the process, namely knowledge, persuasion, decision, implementation, and confirmation (Rogers, 1986). An individual seeks information at various stages in the process to decrease

uncertainty about the innovation (Rogers, 1986). Communication of information (knowledge) and communication of influence (persuasion) together represent a dual-process model of inputs (Bandura, 1986) which can result in a ripple of positive adoption decisions among the units of adoption (Dearing & Meyer, 2011). Most previous diffusion studies report that mass media are most important in creating awareness-knowledge of innovations, particularly at the first stage of the diffusion process (Rogers, 1986).

Since the seminal study of the diffusion of hybrid seed corn in Iowa conducted by Ryan and Gross (1943), the S-shaped diffusion curve has grown to be the classic model to explain types of innovation diffusion (Danowski, Gluesing, & Riopelle, 2011). Based on diffusion research carried out on a variety of innovations by communication scholars and other social scientists, the diffusion of information and innovations through society over time resembles an S-shaped curve. That is, the diffusion process usually begins slowly, then accelerates, reaching its maximal rate of adoption, when half of the population has adopted, the process begins to decelerate, eventually leveling off when it reaches an upper asymptote (the limits of the population), and the diffusion process is complete when there are no new individuals to adopt the new product or practice (Barnett, 2011).

For the past seven decades, the theory of diffusion of innovations has guided various studies of the spread of new ideas, products, and services. The diffusion research tradition is multidisciplinary, including anthropology, general sociology, rural sociology, public health/medical sociology, communication, marketing,

education, and geography (Rogers, 2003). Although most of the new ideas discussed in the diffusion studies are technological innovations, the theory is also widely used in the spread of new health ideas and services. When American rural sociologists were exploring diffusion of innovations in farming, a parallel tradition was developing among medical sociologists. Early medical sociological studies were on spread of family planning methods in developing countries (Rogers & Kincaid, 1981) and adoption of public health innovations (Becker, 1970a, 1970b), focusing on some powerful new drugs, such as antibiotics in the mid twentieth century (Greenhalgh, Robert, Bate, Macfarlane & Kyriakidou, 2005).

Since classic investigation of drug diffusion, diffusion research has been popular in health promotion, covering a diverse range of public health, health education, and healthy lifestyles initiatives (Greenhalgh et al., 2005). Nowadays, moved from domination of the body by artificially developed pharmaceuticals to the promotion of new medical ideas, diffusion research in medicine has rested centrally on the concept of social marketing, such as the application of basic communication and marketing principles to persuade individuals to change their behavior towards healthier lifestyles and choices. It has been widely used in medical campaigns, including contraception, smoking, breast-feeding, sexual health, drug abuse, safer driving, etc. As applied to health promotion, it is about creating awareness among the audience that they have a problem and then offering a solution (Greenhalgh et al., 2005).

As for diffusion research in communication studies, one of the early concerns of communication researchers was the diffusion of news events carried by the mass

media (Rogers, 2003). Many such studies have been completed, dealing with news items such as scientific events, political events, and natural disasters (Rogers, 2003). Communication researchers also pay attention to the transmission of new ideas, especially health, educational, agricultural, and family-planning innovations, often in developing countries (Rogers, 2003). This study focused on the dissemination of Internet addiction. By adopting the theoretical and methodological approaches as well as the relevant perspectives in diffusion research, this study tried to depict how the mass media created awareness-knowledge of Internet addiction as a health risk among the public.

5.2.2 Entman's four functions of frames

The concept of frame has been widely used in social sciences and humanities, interchangeably with other related terms such as theme, schema, script, or package (Zhou & Moy, 2007). Frames are regarded as the central organizing idea for larger unit of discourse or package (Gamson & Modigliani, 1989). According to Goffman (1974), frames are the cognitive schemata of interpretation, which are used to "locate, perceive, identify, and label" information or relevant events (p. 21). Entman (1993) further elaborates that to frame "essentially involves selection and salience", which means to "select some aspects of a perceived reality and make them more salient in a communicating text" (p. 52). Entman (1993) classifies four functions of frames: (1) problem definition, or the clarification of key facts related to the problem; (2) causal interpretation, the identification of underlying forces of the problem; (3) moral

evaluation, or judgments made of parties implicated in the problem; and (4) treatment recommendation, the proposing of solutions and the discussion of possible results.

Mass media play an important role in shaping public opinion by connecting occurrences with the relevant images in people's minds (Lippmann, 1922). Frames call attention to particular aspects of the issue described, which may lead audiences to have different reactions (Entman, 1993). Therefore, how an issue is structured and characterized in news coverage can influence how it is understood by the public (Wang & Shoemaker, 2011). Different news frames may shape people's perception of a particular issue (Brewer, Graf, & Willnat, 2003; Wanta, Golan, & Lee, 2004). Based on combination of content-analytic data and survey data, previous studies show the significant impact of media frames on public opinion (e.g., Allen, O'Laughlin, Jasperson, & Sullivan, 1994; Jasperson, Shah, Watts, Faber, & Fan, 1998; Soroka, 2003; Wanta & Hu, 1993). According to Gamson and Modigliani (1987), a media frame is a "central organizing idea or story line that provides meaning to an unfolding strip of events", and "suggests what the controversy is about" (p. 143). Gitlin (1980) elaborates that frames package information for audiences. Evolved from various definitions, framing theory essentially explains how the media frame stories (Segvic, 2005).

Framing is the process by which a communication source defines and constructs a public controversy (Nelson, Clawson, & Oxley, 1997). Communication scholars argue that framing and agenda setting are two theories inherently connected, with the

commonality resting in salience (McCombs & Shaw, 1972; Zhou & Moy, 2007). Salience "means making a piece of information more noticeable, meaningful, or memorable to audiences" (Entman, 1993, p. 53). An increase in salience can enhance the probability for receivers to perceive the information, discern meaning, process it, and store it in memory (Fiske & Taylor, 1991; Entman, 1993). Therefore, framing researchers pay attention to the salience of different media frames of a single issue (Zhou & Moy, 2007).

The understanding of frames can help illuminate many empirical and normative controversies (Entman, 1993). Thus, as an empirical approach, framing has showed its popularity in mass communication research. For example, Chomsky used framing to discuss *New York Times* coverage of the crisis in Kuwait prior to the Gulf War (Szykowny, 1990). Framing was used by Shaw (1990) in the discussion of news coverage of abortion. Framing has also been used in comparative studies. For instance, Bantimaroudis and Ban (2001) examine both the *New York Times* and the *Manchester Guardian* to compare the U.S. and British news coverage of the crisis in Somalia. Follow the framing research tradition, this study adopted content analysis as the methodology to investigate media coverage and media frames regarding a specific issue "Internet addiction".

The various definitions of frame provide subtle variations in the framing theory, while the present study utilizes Entman's (1993) definition and four functions of frames. A news report may include frames perform more than one of the four framing functions, while an article may not necessarily include all four functions.

Visual images, metaphors, exemplars, depictions, catchphrases, consequences, roots, and appeals to principle are often used as framing devices to fulfill the aforementioned functions (Gamson & Lasch, 1983; Tankard, 2001; Zhou & Moy, 2007). The purpose of this study is to discover what the media were reporting, with regard to Internet addiction, and how they were reporting it.

In his paper classifying the four functions of frames, Entman (1993), one of the leading scholars on framing, challenged communication scholars to synthesize related theories and concepts and expose them to the rigorous and comprehensive exploration and statement. This study answers that call, by adopting both diffusion of innovations paradigm and analyses of frames to examine the rise and fall of a particular issue across time (Winter & Eyal, 1981). Different from mainstream framing research, which focuses on either frame-building or frame-setting, this study tried to identify and describe the change of media coverage regarding Internet addiction and the variations in relevant news frames over time.

5.2.3 Research questions

This exploratory study aims to depict the media coverage of Internet addiction and the relevant variations of frames over time. Based on the review of related theories and previous studies, the following research questions are addressed:

RQ_1: How is the media coverage of Internet addiction in Greater China (including Mainland China, Hong Kong, Taiwan, and Macau) over time?

RQ_2: What is the trend of reports on Internet addiction in Mainland China across

time? Are there any phases throughout the whole process? If so, how different are the reports in different phases?

RQ_3: How are the four functions fulfilled by the framing devices, to promote the definition, causal interpretation, moral evaluation, and treatment recommendation?

RQ_4: How different are the frames used by the reports in different phases, or with different attributes?

RQ_5: How different are the reports with different frames?

RQ_6: What are the relationships among the four frames?

5.3 METHODS

One weakness of diffusion research is its dependence upon recall-typed data (Rogers, 2003). Rogers (2003) reviews past diffusion studies and points out that mainly relied upon several one-shot surveys and recall data, previous research provided still photos instead of moving pictures of the diffusion process. Survey research on the diffusion process is a convenient methodology for the investigators, but it is intellectually destructive of the temporal aspects of the diffusion process (Rogers, 1986, 2003). If data about a diffusion process are only gathered at one point in time, the researcher can only measure time through respondents' recall, and therefore no more findings about the process of diffusion over time can be provided, other than those reconstituted from respondents' recall data (Rogers, 2003). To overcome the recall problem, this study adopt a more appropriate research design for gathering data about

the time dimension in the diffusion process, by using archival data. In this way, this study may reflect the time dimension more accurately.

This exploratory study adopted content analysis as the research methodology. As reviewed in the methodology chapter, content analysis is a systematic, objective and quantitative method of measuring the meaning and/or physical characteristics of symbols.

5.3.1 Data collection

To explore the media coverage of Internet addiction in Chinese newspapers, the Wisenews database was used for data collection. As a leading database of news from Greater China, Wisenews is updated daily with news reports that appeared originally in traditional media. Wisenews provides access to newspapers, magazines, journals and newswires published in Mainland China, Hong Kong, Macau, and Taiwan, including all the important newspapers, such as *People's Daily*, *China Business Times*, *Economic Daily and Xinhua Economic News* in the Mainland; *Hong Kong Economic Times*, *Mingpao Daily* and *Apple Daily* in Hong Kong; *China Times*, *Commercial Times* and *United Daily News* in Taiwan; and *Macao Daily*, *Vakio Daily* and *Shimin Daily* in Macau. As a result, the data of media coverage, albeit many not be exclusive, can validly represent the population. By using the function of "select source", only newspaper articles were retrieved for this study.

The Wisenews database was used to retrieve relevant news articles by using

"Internet addiction" (*wangyin* in Chinese) and its synonyms (網癮=網路成癮/互聯網成癮/上網上癮/上網成癮/網路上癮) as search terms in both headline and body text of the news reports from January 1, 1998, to December 31, 2009 in Greater China. The amount of coverage was measured by counting the total number of the news articles about Internet addiction in the Chinese newspapers. In total, 12,180 news articles were retrieved from Mainland China, 836 from Hong Kong, 209 from Macau, and 152 from Taiwan.

As for content analysis, only the articles from Mainland China were used. Considering the large amount of news coverage in Mainland Chinese newspapers, not all articles were coded for data analysis. The 12-year sample was created from a stratified sampling procedure with proportionate allocation. News articles were randomly selected at intervals of ten with the seed value equal to four. Totally, 1,218 news articles were selected for coding, and the sample size was 10 percent of the universe.

5.3.2 Coding

The articles were categorized using an empirically derived coding scheme (see Appendix 1). One postgraduate student at the Chinese University of Hong Kong and the author did the coding. The coders were trained for one week, using articles that were not in the original sample but were also randomly selected from the pool. To assure the intercoder reliability, two coders coded a randomly chosen 20 percent of the sample (n=244) independently. The rest of the coding was split between the two

coders. Calculated by using Syntax to match files in the software SPSS, the overall intercoder reliability was .94. The variables were all examined separately for reliability, and the results were all above .90.

News stories retrieved from Wisenews were firstly screened by including one variable called "whether Internet addiction is the theme or not" to distinguish those stories with direct and strong connections with Internet addiction from others. According to the coding scheme, the media coverage of Internet addiction was analyzed in terms of the prominence (source, placement and length), other reporting attributes of the coverage, such as headline, context, visual images, and metaphors, as well as frames.

As for the frames, Tankard (2001) argues that media frames can be measured systematically and empirically. Specifically, the following steps are recommended: (1) make the range of possible frames explicit, (2) put the possible frames in a manifest list, (3) develop keywords, catchphrases and symbols to help detect each frame, (4) use the frames in the list as categories in a content analysis, and (5) get coders to code articles into the categories (Tankard, 2001). The four frames (definition, causal interpretation, evaluation, and treatment recommendation) were coded accordingly.

5.3.3 Measures

This study took each news report as the unit of analysis. Various reporting attributes and functions of frames were coded for analysis. Firstly, regarding theme, "Internet addiction" was coded as 1, and "not Internet addiction" was coded as 0.

Each news story was also coded for its source. National newspaper was coded as 1, local newspaper was coded as 2, and governmental bulletin or industrial newspaper was coded as 3. Placement was defined as the page on which the article appears, with first ten pages coded as 1, and not first ten pages coded as 0. The prominence of coverage was also measured by the length of headline and body text (total number of words the headline or body text contains). Those articles with Internet addiction in the headline were coded as 1, otherwise were coded as 0. As for context, "Mainland China" was coded as 1, "abroad" was coded as 2, and "both home and abroad" was coded as 3. Similarly, the news reports using visual images were coded as 1, those not using were coded as 0. Metaphor was measured in the same way, with "yes" being coded as 1, and "no" as 0.

After thoroughly reviewing the articles, coders chose to code which of Entman's (1993) four functions of frames – problem definition, causal interpretation, moral evaluation, and treatment recommendation – was/were fulfilled, and also determined which specific frame(s) was/were used. Definition was measured on how Internet addiction was defined in the news report, include whether Internet addiction is a risk or not, whether it is a medical issue or not, whether is Internet addiction is an illness or not, and whether symptoms are mentioned or not. "Yes" was coded as 1, and "no" was coded as 0. Causal interpretation included four variables: the cause, scapegoat, high-risk gender group, and high-risk age group. Those mentioned causes were coded as 1, while those not mentioned were coded as 0. The scapegoat was measured similarly. High-risk gender group was coded with male as 1, female as 2, and not

mentioned as 0. As for high-risk age group, "adolescents and young adults" were coded as 1, other age groups were coded as 2, and those not mentioned high-risk age groups were coded as 0. Evaluation associated with harm caused by Internet addiction, with those mentioned harm being coded as 1, and those not mentioned being coded as 0. Finally, treatment recommendation was measured on "whether solution has been proposed" and "whether treatment has been mentioned". "Yes" was coded as 1, and "no" was coded as 0.

5.3.4 Sample overview

The media coverage of Internet addiction in Greater China began in 1998. The media coverage of Internet addiction began with four news reports in 1999 in Mainland China, and greatly increased each year, up to 3,143 articles in 2009. Totally, there were 12,180 articles from 1998 to 2009. Based on the 1,218 randomly selected news articles that have been coded, news stories about Internet addiction in Mainland China have an average length of 1,012 words, and are usually not in first ten pages (see Table 5.1).

The prominence of coverage was measured by source, placement and length. As for source, 17.1% (208) of the news stories were from national newspaper, 77.0% (938) were from local newspapers, and 5.9% (72) were from governmental bulletin or industrial newspapers. In terms of placement, 607 (49.8%) articles were in the first 10 pages, and 611 (50.2%) were not. The length of headline was between 4 to 65 words (Mean=16.71, *SD* =8.73), and the length of body text was within the range of

74 to 6241 words (Mean=1011.98, *SD* =862.66).

As for the reporting attributes, most reports (1,142, 93.8%) were just in text, but some 76 (6.2%) included visual images. There were 774 (63.5%) news reports with "Internet addiction" in the headline, and 444 (36.5%) without it in the headline. Among all the articles, 192 (15.8%) used various metaphors to report Internet addiction, such as drugs or drug addiction (142, 11.7%), alcohol or alcoholics (7, 0.6%), pathological gambling (5, 0.4%), and more than one of these (38, 3.1%). In addition, 1,036 (85.1%) stories happened within Mainland Chinese context, 40 (3.2%) were about Internet addiction in foreign countries, and 142 (11.7%) were about both home and abroad.

Referring to the content, these news reports mentioned different aspects of Internet addiction. Most reports 1,210 (99.3%) regarded Internet addiction as a risk, 805 (66.1%) reported Internet addiction as a medical issue, 753 (61.8%) treated it as an illness, and 704 (57.8%) mentioned symptoms. As for the high-risk groups, males (464, 38.1%) were mentioned much more than female (37, 3.0%), and adolescents or young adults (1,049, 86.1%) were among the high-risk age group, followed with other age groups (34, 2.8%).

As for the negative outcomes of Internet addiction, there were various harms mentioned by the stories, including academic or work failure (98, 8.0%), physical problems (13, 1.1%), psychological problems (82, 6.7%), delinquency or crimes (65, 5.3%), other social problems (5, 0.4%), and multiple problems (665, 54.6%).

Many reports (764, 62.7%) mentioned the causes of Internet addiction, namely

personal reasons (133, 10.9%), family reasons (187, 15.4%), schooling or education (13, 1.1%), social environment (142, 11.7%), the characteristics of the Internet (67, 5.5%), and multiple causes (222, 18.2%). Some reports (837, 68.7%) even pointed out some scapegoats, such as Internet café (140, 11.5%), online games (395, 32.4%), both Internet café and online games (269, 22.1%), and other online activities (33, 2.7%).

In the news articles, different kinds of solutions were provided, such as self-help program (62, 5.1%), family support (211, 17.3%), professional help (325, 26.7%), governmental regulation or policies (118, 9.7%), and multiple methods (291, 23.9%). As for treatment, those articles (514, 42.2%) mentioned this showed different attitudes, namely supportive (288, 23.6%), doubting (131, 10.8%), and neutral (95, 7.8%).

The detailed sample overview is presented in Table 5.1.

Table 5.1 Sample overview

Variables	*Mean*	*SD*
Prominence		
Length		
Headline	16.71	8.73
Body text	1,011.98	862.66
	Freq.	**%**
Source		
National	208	17.1
local	938	77.0
Governmental or industrial	72	5.9
Placement		
First 10 pages	607	49.8
Non-first-10 pages	611	50.2
Theme		
Yes	1,135	93.2
no	83	6.8
Reporting attributes		
Headline		
With Internet addiction	774	63.5
Without Internet addiction	444	36.5
Context		
Mainland China	1,036	85.1
Outside Mainland China	40	3.2
Both home and abroad	142	11.7
Visual images		
Yes	76	6.2
No	1,142	93.8
Metaphor		
No	1,026	84.2
Yes		
Drugs/ Drug addiction	142	11.7
Alcohol/Alcoholics	7	0.6
Pathological gambling	5	0.4
More than one above	38	3.1
Definition		
Risk		
Yes	1,210	99.3
No	8	.7
Medical issue		
Yes	805	66.1
No	15	1.2
Not mentioned	398	32.7
Illness		
Yes	753	61.8
No	31	2.5
Not mentioned	434	35.6
Symptoms		
Yes	704	57.8
No	514	42.2

Table 5.1 continued

Variables	Freq.	%
Causal interpretation		
Causes		
No	454	37.3
Yes		
Personal reasons	133	10.9
Family reasons	187	15.4
Schooling/education	13	1.1
Social environment	142	11.7
The Internet	67	5.5
More than one above	222	18.2
Scapegoat		
No	381	31.3
Yes		
Internet café	140	11.5
Online game	395	32.4
Both Internet café & online game	296	22.1
Other applications	33	2.7
High-risk gender group		
Male	464	38.1
Female	37	3.0
Both or not mentioned	717	58.9
High-risk age group		
Adolescents or young adults	1,049	86.1
Other age groups	34	2.8
Not mentioned	135	11.1
Evaluation		
No harm	290	23.8
Harm		
Academic/work failure	98	8.0
Physical problems	13	1.1
Psychological problems	82	6.7
Delinquency/crimes	65	5.3
Other problems	5	0.4
Multiple problems	665	54.6
Treatment Recommendation		
Solution		
No	211	17.3
Yes		
Self-help program	62	5.1
Family support	211	17.3
Professional help	325	26.7
Regulation/policies	118	9.7
More than one above	291	23.9
Treatment		
No	704	57.8
Yes		
Support	288	23.6
Doubt	131	10.8
Neutral	95	7.4

Notes: N =1,218.

5.4 RESULTS

To answer the research questions, relevant statistical analyses were conducted. All the analyses were done among the 1,218 newspaper articles. The results are presented as follows:

5.4.1 Descriptive statistics

Media coverage of Internet addiction in Greater China from 1998 to 2009

The media coverage of Internet addiction began in 1998 in Greater China. There were three news articles from Hong Kong newspapers, and one story from Taiwan. News reports on Internet addiction began in 1999 in Mainland China, and in 2000 in Macau. During the twelve year from 1998 to 2009, 12,180 articles about Internet addiction were retrieved from Mainland Chinese newspapers, 836 from Hong Kong, 209 from Macau, and 152 from Taiwan.

Compared with the classic S-shaped curve of diffusion of innovation theory, the twelve-year media coverage in Mainland China can be divided into three phases, with four years for each phase. Specifically, from 1998 to 2001 is the incipiency of the process (awareness-knowledge); from 2002 to 2005 it accelerated and the take-off occurred, which can be called the attitude-forming period; and after that, it slowed down from 2006 to 2008 but showed another take-off in 2009. The last period can be identified as the confirmation for the existence of Internet addiction as a social concern. In order to visualize the trend of media coverage, Figure 5.1 and

Figure 5.2 show the ups and downs in the amount over the years. The yearly media coverage of Internet addiction in all four areas within Greater China and the media coverage outside of Mainland China (Hong Kong, Macau, and Taiwan) are presented in Figure 5.1 and Figure 5.2 respectively.

One finding is that the trend of news reports on Internet addiction in Hong Kong showed an interesting resemblance to the media coverage in Mainland China. The media reportage in Hong Kong echoed its counterpart in the Mainland, because there were comparatively fewer stories happened locally in Hong Kong and a large proportion of the articles in Hong Kong newspapers were actually about stories in Mainland China. Therefore, the two showed similar trend of yearly media reports on Internet addiction. Remaining analyses will be solely on the 12,180 articles in Mainland Chinese newspaper, since the focus of this study is Internet addiction in Mainland China.

Figure 5.1 Media coverage of Internet addiction in Greater China: 1998-2009

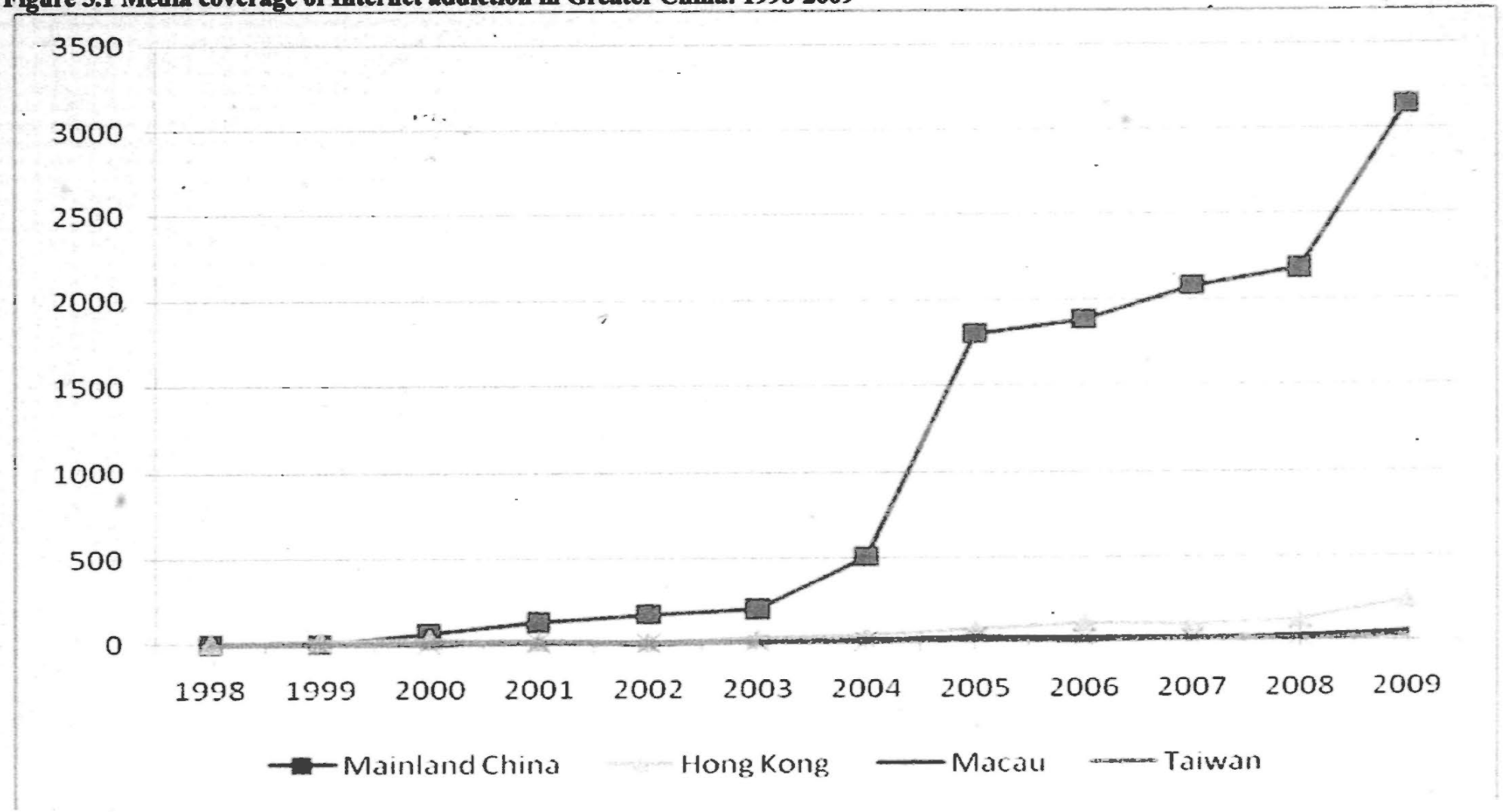
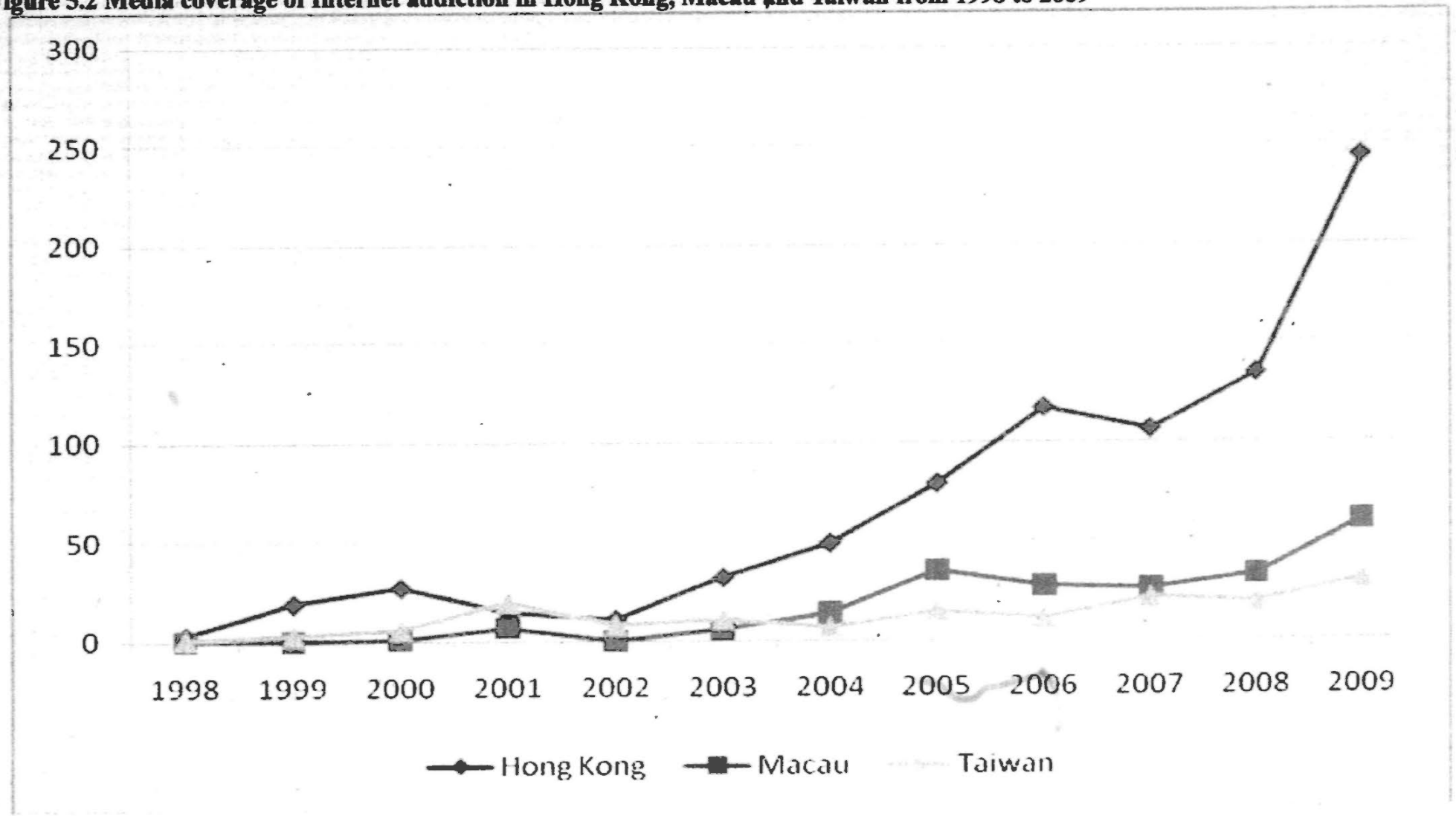


Figure 5.2 Media coverage of Internet addiction in Hong Kong, Macau and Taiwan from 1998 to 2009



Frames used in the reports of Internet addiction in Mainland China: 1998-2009

The framing devices together fulfilled the four functions. In total, as shown in Figure 5.3.1, there were 820 articles with framing devices for definition, 764 articles for cause, 928 for evaluation, and 1,007 for solution. Thus, most of the newspaper reports tried to propose solutions to Internet addiction. In addition, the use of these four functions also varied in the three different phases. The total amount in each phase (see Figure 5.3.2), and the percentage of the four frames across the three different phases (see Figure 5.3.3) are also presented. Accordingly, in the first phase, more frames functioned as definition and evaluation, while in the second phase "solution" leaped to the first among the four functions followed by "evaluation", and frames of "solution" continued holding the lead in the third phase with "evaluation" ranking the second. Hence, after educating the public with the definition of Internet addiction, more newspaper reports tended to propose solutions in the latter two phases.

Figure 5.3.1 Amount of the frames used in Mainland Chinese newspaper from 1998 to 2009

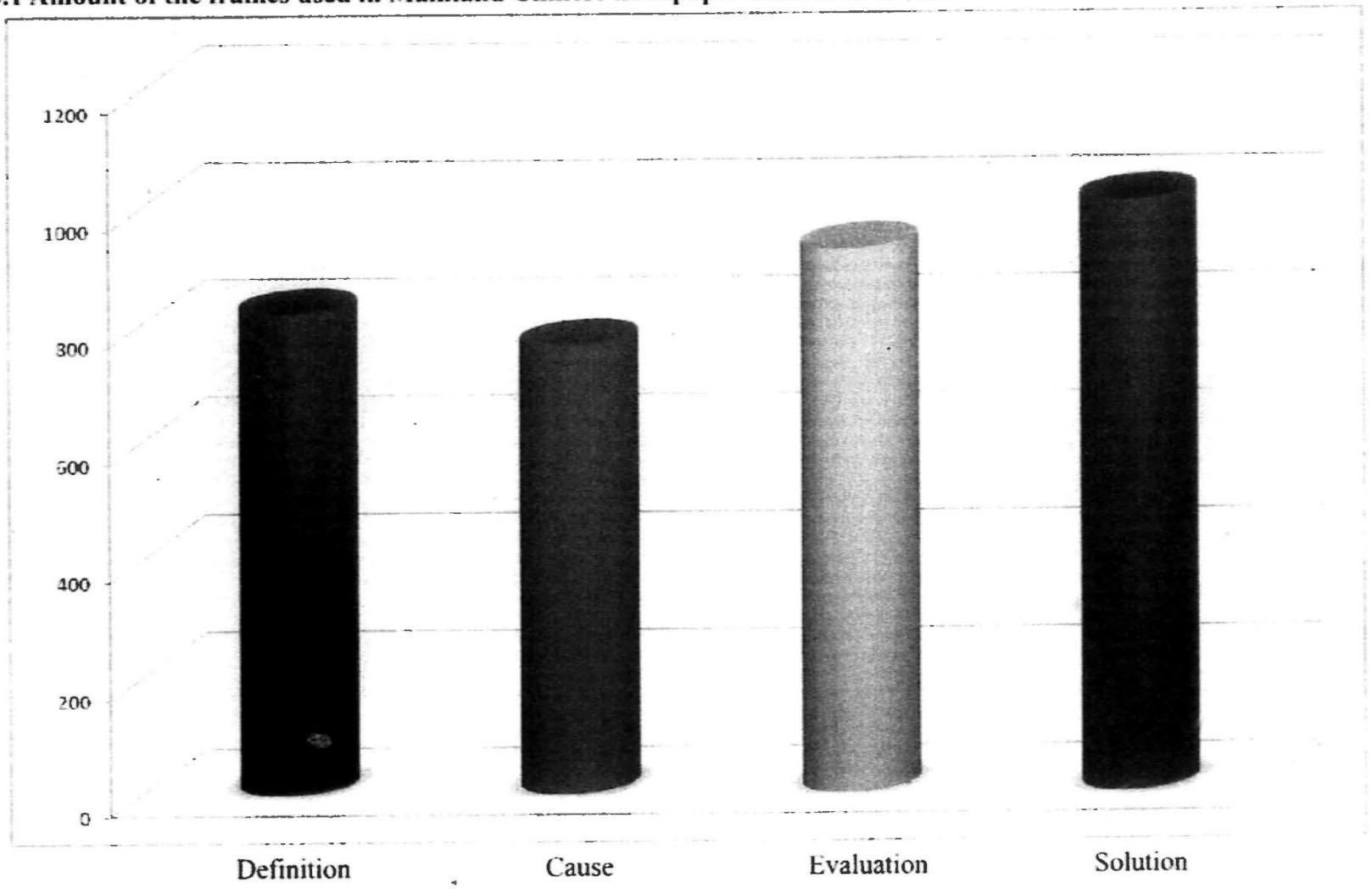


Figure 5.3.2 Amount of the frames used in different phases: 1998-2009

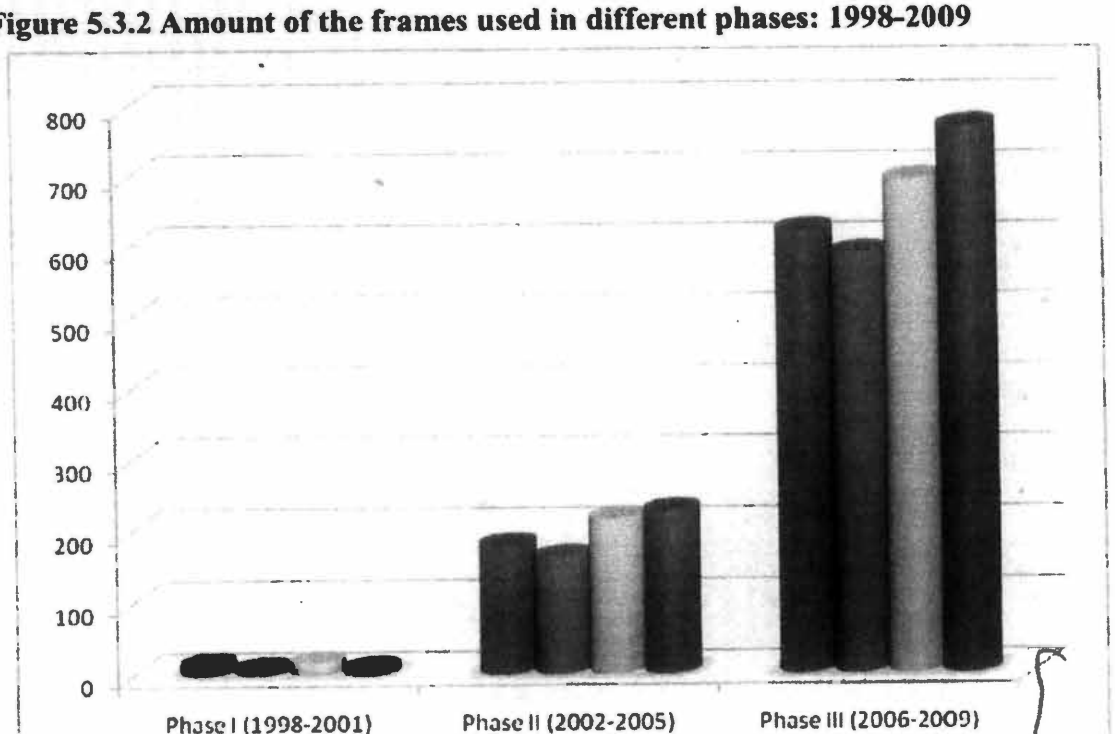
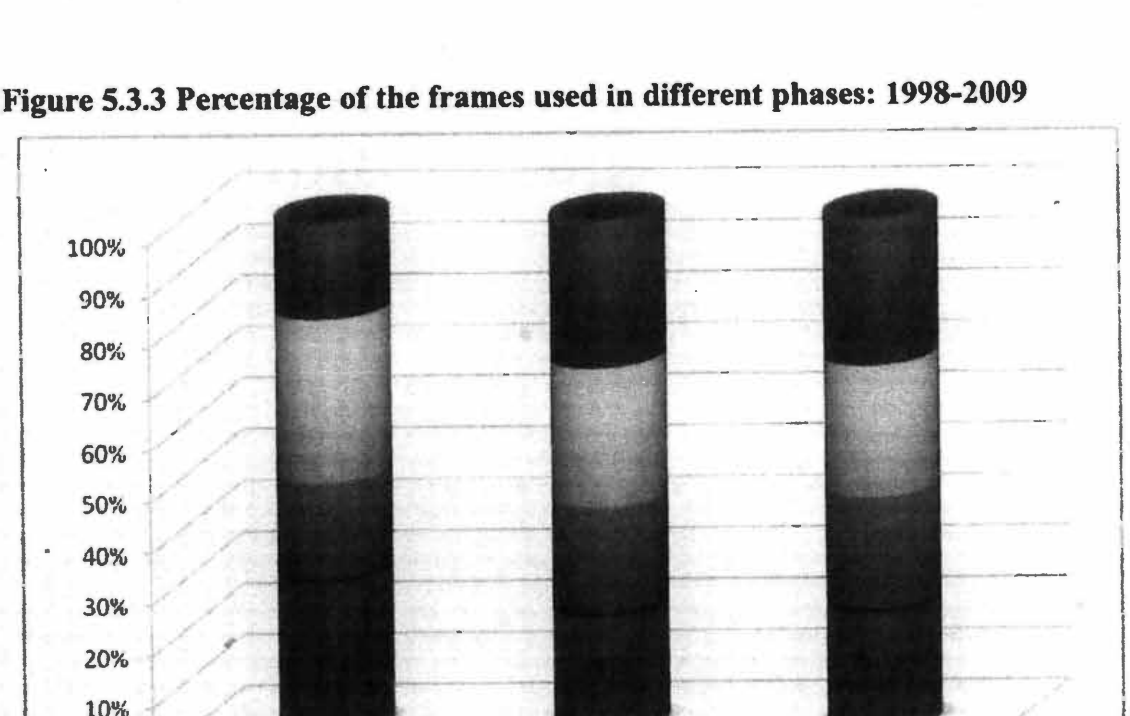


Figure 5.3.3 Percentage of the frames used in different phases: 1998-2009



5.4.2 Multivariate analysis

Prominence and reporting attributes in different phases

To answer the fourth research question, Chi-square tests were performed to examine the association with different phases (see Table 5.2). Results showed that the relationship between theme and phase was significant, $\chi^2(2, N = 1,218) = 17.65$, $p < .001$. Those news reports with Internet addiction as theme increased significantly as time went on. As for reporting attributes, the percentage of different contexts differed significantly in different phases, $\chi^2(2, N = 1,218) = 32.98$, $p < .001$. In process of time, the stories happened in Mainland China increased, and the stories happened abroad or both accounted for less proportion. The findings reveal that the use of metaphors also varied significant in different phases, $\chi^2(2, N = 1,218) = 26.85$, $p < .001$. News reports about Internet addiction changed to use more precise wording rather than metaphors as time went by. However, the percentage of headlines with Internet addiction did not differ by phase, $\chi^2(2, N = 1,218) = 3.98$, $p = .14$.

In addition, the minimum expected cell frequency must be 5 or greater for chi-square to be valid, therefore source, placement, and visual images were excluded for analyses.

Table 5.2 Prominence and reporting attributes in different phases

	Phase I		Phase II		Phase III		
	Freq.	%	Freq.	%	Freq.	%	χ^2
Theme							**17.65*** **
Yes	15	71.4	246	91.8	874	94.1	
No	6	28.6	22	8.2	55	5.9	
Reporting attributes							
headline							3.98
Yes	9	42.9	170	63.4	595	64.0	
No	12	57.1	98	36.6	334	36.0	
Context							**32.98*** **
Mainland	11	52.4	229	85.4	769	85.7	
Abroad	5	23.8	7	2.6	28	3.0	
Both	5	23.8	32	11.9	105	11.3	
Metaphor							**26.85*** **
Yes	8	38.1	64	23.9	120	12.9	
No	13	61.9	204	76.1	809	87.1	

Notes: ***p<.001; N =1,218

Prominence and reporting attributes of different frames

As for the fifth research question, T-tests were performed to examine possible difference in length of headline and body text of those articles using different frames (see Table 5.3). As for the length of headline, significant differences were found in the solution function. The means for reports with the frames for "solution" and those without it were M = 16.92 (SD = 8.91) and M = 15.69 (SD = 7.77) respectively, $t(1,216) = -2.04$, $p < .05$. Thus, headlines were longer in those articles with the frames for the solution function. As for the length of body text, significant differences were found in "cause", "evaluation" and "solution" functions. The means for reports with "cause" frames and those without were M = 1,199.98 (SD = 916.07)

and $M = 695.60$ ($SD = 652.58$) respectively, $t(1,216) = -11.18$, $p < .001$. The means for reports with "evaluation" frames and those without were $M = 1,115.09$ ($SD = 917.14$) and $M = 682.04$ ($SD = 540.71$) respectively, $t(1,216) = -9.90$, $p < .001$. The means for reports with "solution" frames and those without were $M = 1,071.99$ ($SD = 889.79$) and $M = 725.60$ ($SD = 648.28$) respectively, $t(1,216) = -6.57$, $p < .001$. Therefore, the stories were longer to fulfill the function of "cause", "evaluation", and "solution".

To examine the relationship between other prominence variables and frames, Chi-square tests were conducted (see Table 5.3). Referring to source, the results showed that the percentage of reports from different newspapers differed significantly in "definition", $\chi^2(2, N = 1,218) = 14.97$, $p < .001$. There was a greater percentage of "definition" frames in national newspapers, or governmental/industrial newspapers. However, newspapers of different sources did not differ by "cause", "evaluation" and "solution". As for placement, articles in first 10 pages and in non-first-10 pages differed in "solution", $\chi^2(2, N = 1,218) = 5.27$, $p < .05$. In first 10 pages, there were a significantly greater percentage of reports proposing solutions for Internet addiction. No differences were found for other frames in different pages.

Table 5.3 Prominence of the articles with different frames

		Definition			Cause			Evaluation			Solution		
		Yes	No	*t*	Yes	No	*t*	Yes	No	*t*	Yes	No	*t*
Prominence													
Length													
Headline	Mean	16.50	17.13	1.19	16.35	17.30	1.83	16.68	16.77	.15	16.92	15.69	-2.04*
	SD	8.52	9.14		8.64	8.86		8.77	8.62		8.91	7.77	
Body text	Mean	1,032.12	970.49	-1.17	1,199.98	659.60	-11.18***	1,115.09	682.04	-9.90***	1,071.99	725.60	-6.57***
	SD	867.56	852.04		916.07	652.58		917.14	540.71		889.79	648.28	
		Yes	No	χ^2	Yes	No	χ^2	Yes	No	χ^2	Yes	No	χ^2
Source				14.97***			.63			.75			1.13
National	Freq.	153	55		131	77		155	53		175	33	
	%	73.6	26.4		63.0	37.0		74.5	25.5		84.1	15.9	
Local	Freq.	607	331		591	347		720	218		770	168	
	%	64.7	35.3		63.0	37.0		76.8	23.2		82.1	17.9	
Governmental/industrial	Freq.	60	12		42	30		53	19		62	10	
	%	83.3	16.7		58.3	41.7		73.6	26.4		86.1	13.9	
Placement				.81			.32			.76			5.27*
First 10 pages	Freq.	416	191		376	231		456	151		517	90	
	%	68.5	31.5		61.9	38.1		75.1	24.9		85.2	14.8	
Not first 10 pages	Freq.	404	207		388	223		472	139		490	121	
	%	66.1	33.9		63.5	36.5		77.3	22.7		80.2	19.8	

Notes: *$p < .05$; ***$p < .001$; N =1,218

The findings also showed the differences in reporting attributes. As shown in Table 5.4, the articles with Internet addiction in the headline were more likely to appear in the frame for definition function, $\chi^2(2, N = 1,218) = 17.46, p < .001$, while no differences were found for other frames. In terms of visual images, they were more often used for cause function, $\chi^2(2, N = 1,218) = 5.22, p < .05$, but did not differ for other frames, and cell frequency were fewer than five in "solution". As for context, results showed that reports differed significantly in cause and solution functions, $\chi^2(2, N = 1,218) = 5.99, p < .05$, and $\chi^2(2, N = 1,218) = 16.54, p < .001$ respectively. There was greater percentage of "cause" and "solution" in the stories about both China and abroad. Stories in the Chinese context included "cause" and "solution" more often than purely foreign stories. However, there was not enough cell frequency in "definition", and no significant differences were found in "evaluation". As for those stories with metaphors, as an important reporting attribute, metaphor was found more often to be used in the articles with each of the four frames, "definition", $\chi^2(2, N = 1,218) = 18.62, p < .001$, "cause", $\chi^2(2, N = 1,218) = 7.26, p < .01$, "evaluation", $\chi^2(2, N = 1,218) = 7.38, p < .01$, and "solution", $\chi^2(2, N = 1,218) = 7.59, p < .01$. In addition, reports with frames of "cause" and "evaluation" were more tend to point out some scapegoats, $\chi^2(2, N = 1,218) = 147.39, p < .001$ and $\chi^2(2, N = 1,218) = 203.39, p < .001$ respectively. Moreover, articles with any of the four frames tend to mention the symptoms of Internet addiction, namely "definition", $\chi^2(2, N = 1,218) = 6.15, p < .05$, "cause", $\chi^2(2, N = 1,218) = 28.39, p < .001$, "evaluation", $\chi^2(2, N = 1,218) = 382.72, p < .001$, and "solution", $\chi^2(2, N =$

1,218) = 34.01, $p < .001$. The relationship between reporting attributes and frames are presented in Table 5.4.

Table 5.4 Reporting attributes of the articles with different frames

		Definition		χ^2	Cause		χ^2	Evaluation		χ^2	Solution		χ^2
		Yes	No		Yes	No		Yes	No		Yes	No	
Reporting attributes													
Headline				**17.46*****			.31			.14			3.04
Yes	Freq.	554	220		481	293		587	187		651	123	
	%	71.6	28.4		62.1	37.9		75.8	24.2		84.1	15.9	
No	Freq.	266	178		283	161		341	103		356	88	
	%	59.9	40.1		63.7	36.3		76.8	23.2		80.2	19.8	
Visual images				.00			**5.22***			2.87			8.23
Yes	Freq.	51	25		57	19		64	12		72	4	
	%	67.1	32.9		75.0	25.0		84.2	15.8		94.7	5.3	
No	Freq.	769	373		707	435		864	278		935	207	
	%	67.3	32.7		61.9	38.1		75.7	24.3		81.9	18.1	
Context				20.81			**5.99***			5.42			**16.54*****
China	Freq.	672	364		639	397		777	259		859	177	
	%	64.9	35.1		61.7	38.3		75.0	25.0		82.9	17.1	
Abroad	Freq.	36	4		23	17		33	7		24	16	
	%	90.0	10.0		57.5	42.5		82.5	17.5		60.0	40.0	
Both	Freq.	112	30		102	40		118	24		124	18	
	%	78.9	21.1		71.8	28.2		83.1	16.9		87.3	12.7	
Metaphor				**18.62*****			**7.26****			**7.38****			**7.59****
Yes	Freq.	155	37		137	55		161	31		172	20	
	%	80.7	19.3		71.4	28.6		83.9	16.1		89.6	10.4	
No	Freq.	665	361		627	399		767	259		835	191	
	%	64.8	35.2		61.1	38.9		74.8	25.2		81.4	18.6	

Notes: *$p < .05$; **$p < .01$; ***$p<.001$; N =1,218

Table 5.4 continued

		Definition		χ^2	Cause		χ^2	Evaluation		χ^2	Solution		χ^2
		Yes	No		Yes	No		Yes	No		Yes	No	
Content													
Scapegoat				.53			**147.39*** **			**203.39*** **			.00
Yes	Freq	558	279		620	217		736	101		692	145	
	%	66.7	33.3		74.1	25.9		87.9	12.1		82.7	17.3	
No	Freq	262	119		144	237		192	189		315	66	
	%	68.8	31.2		37.8	62.2		50.4	49.6		82.7	17.3	
Symptoms				**6.15***			**28.39*** **			**382.72*** **			**34.01*** **
Yes	Freq	494	210		486	218		680	24		544	160	
	%	70.2	29.8		69.0	31.0		96.6	3.4		77.3	22.7	
No	Freq	326	188		278	236		248	266		463	51	
	%	63.4	36.6		54.1	45.9		48.2	51.8		90.1	9.9	

Notes: *$p < .05$; ***$p<.001$; N =1,218

Relationship among different frames

To explore how the four frames were related to one another, Chi-square tests were performed, as shown in Table 5.5. "Definition" was significantly associated with non-"evaluation" and "solution", $\chi^2(2, N = 1,218) = 11.11$, $p < .001$, and $\chi^2(2, N = 1,218) = 35.77$, $p < .001$ respectively. "Cause" was also found to be significantly associated with "evaluation" and "solution", $\chi^2(2, N = 1,218) = 62.68$, $p < .001$, and $\chi^2(2, N = 1,218) = 25.66$, $p < .001$ respectively. The results showed that those causes and solutions were more likely to be proposed based on the framing devices of definition or causes. However, no other relationships were found among the frames. The results of the Chi-square tests among the frames are presented in Table 5.5.

Table 5.5 Relationship among different frames

	Definition				χ^2
	Yes		No		
	Freq.	%	Freq.	%	
Cause					1.81
Yes	525	64.0	239	60.1	
No	295	36.0	159	39.9	
Evaluation					**11.11*** **
Yes	172	21.0	280	70.4	
No	648	79.0	118	29.6	
Solution					**35.77*** **
Yes	715	87.2	292	73.4	
No	105	12.8	106	26.6	

	Cause				χ^2
	Yes		No		
	Freq.	%	Freq.	%	
Definition					1.81
Yes	525	68.7	295	65.0	
No	239	31.3	159	35.0	
Evaluation					**62.68*** **
Yes	639	83.6	289	63.7	
No	125	16.4	165	36.3	
Solution					**25.66*** **
Yes	664	86.9	343	75.6	
No	100	13.1	111	24.4	

	Evaluation				χ^2
	Yes		No		
	Freq.	%	Freq.	%	
Definition					**11.11*** **
Yes	648	69.8	172	59.3	
No	280	30.2	118	40.7	
Cause					**62.68*** **
Yes	639	68.9	125	43.1	
No	289	31.1	165	56.9	
Solution					3.31
Yes	757	81.6	250	86.2	
No	171	18.4	40	13.8	

Notes: ***p<.001; N =1,218

5.5 DISCUSSION

This study focused on the staging of Internet addiction as a new health risk. Guided

by diffusion of innovation theory and Entman's (1993) four functions of frames, the overall trend of the newspaper reports as well as the variations in terms of amount and frames were examined.

This study adopted content analysis based on archival data to deal with the spread of Internet addiction. The data consist of news reports released by various newspapers in China from 1998 to 2009. Instead of examining the interactions between the media and the public, this study focused on the trend of media coverage. Employing the diffusion of innovations theory and Entman's (1993) four functions of frames, this study examined the media coverage of Internet addiction and the relevant frames variations in the past twelve years focusing in Mainland China. The findings showed an overall picture of Internet addiction in media coverage. The dynamic process involved variations of frames and other reporting attributes. The examination of such process allows us to conceptually and empirically link the diffusion process and the functions of frames. Specifically, this research examined how media frames contributed to the construction of diffusion of Internet addiction as a health risk in media coverage.

Diffusion is a process of an innovation over time within a social system, so there is no way to avoid including time when one studies diffusion (Rogers, 2003). However, as for most previous studies, time is one of the main methodological enemies in studying a diffusion process (Rogers, 2003). To trace the sequential flow of Internet addiction as it spreads in mass media, news articles were retrieved from database. This study depicted the overall distribution of media reports over time, which can be

divided into three phases: Phase I (1998-2001), Phase II (2002-2005), and Phase III (2006-2009). This research design can allow us to more clearly understand the over-time aspects of diffusion.

In accordance with previous studies, the curve rose slowly at first when there were few reports. In the second phase, the slope of the curve was steeper, and the rate then began to climb rapidly. It accelerated and reached its maximal rate in 2005. Moving into the third phase, the diffusion increased at a steady but gradually slower rate. However, there was some dissonance in the last phase. The S-shaped diffusion curve did not level off in 2009, but took off again. The slowly growing S-shaped curve still explains certain phases of the dissemination of Internet addition as a new health risk in media coverage (Danowski, Gluesing, & Riopelle, 2011). The first phase was the range for awareness-knowledge, which means that the public were exposed to the existence of Internet addiction and gained an understanding of how it functions. In the second phase, the public reached the maximal rate of knowledge, and the process began to decelerate. Usually, the diffusion eventually levels off when it reaches the limits of the population, and then the diffusion process is complete (Barnett, 2011). However, in the third phase, the diffusion experienced another take-off in 2009. This may be explained by closely examining the reports that several tragedies happened in some Internet addiction clinics became the twist for rethinking about the Internet addiction issue. Another explanation of the second take-off may lie in the Netizen. According to the statistics of China Internet Network Information Center (CNNIC), by 31 December 2010, the number of Internet users in China has reached up to 457

million (CNNIC, 2011, p. 5). Although China is now the country with the world's largest Netizen population in absolute term, there is still a larger proportion of the Chinese population who do not use the Internet. The Netizen population is still growing and has not arrived the peak point yet, thus the diffusion of the idea of Internet addiction may be still underway. In addition, there are also some external or environmental conditions, such as marketing of clinics, governmental regulation, and cultural climate (Rogers, 2003; Tutzauer, Kwon, & Elbirt, 2011; Wejnert, 2002). Such in-process diffusion research design allows a scholar to investigate less successful as well as more successful cases of innovation diffusion, and therefore partly helps to overcome the pro-innovation bias (Rogers, 2003).

To certain extent, the media mirror public opinion, while they also try to shape public's interpretation of a given issue (Schoenbach & Becker, 1995; Zhou & Moy, 2007). As for the innovation-decision process, it is the mental process through which the decision-making unit passes from awareness-knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of the decision (Rogers, 1986). Previous studies show that the more coverage a specific issue received from mass media, the more likely the public were to think the issue was vitally important (Wanta, Golan, & Lee, 2004). Therefore, this study helped illuminate how mass media promoted the idea of Internet addiction. At the very beginning, the media focused on awareness-knowledge about Internet addiction. Awareness is mainly about attentiveness or interest to the existence of Internet addiction, establishing the

knowledge base. Awareness and knowledge usually intermingle with each other. Passing from the stage of awareness-knowledge, the public may go on to form an attitude toward this idea. The second phase was the period of taking off for public education, and the third was the period mainly for sustaining, for people to confirm or rethink.

Throughout the whole process, different media frames were used to suggest what is at issue (Zhou & Moy, 2007). According to Gamson and Modigliani (1987), media frames are the "central organizing idea or story line that provides meaning to an unfolding strip of events" (p. 143), and suggests what is the essence of the issue. The function of frames are selecting and highlighting different elements, and using "the highlighted elements to construct an argument about problems and their causation, evaluation, and/or solution" (Entman, 1993, p. 52). Typically, the frames diagnose, evaluate, and prescribe. In this way, the frames reflect the subtle differences that a specific issue can be presented in different ways (Tankard, 2001). When the diffusion occurred, informational messages preceded persuasive messages since the public first had questions about what Internet addiction is (knowledge-based questions), and then later had questions about the details and, in particular, its negative aspects (evaluation-based questions) as they moved nearer to forming an attitude (Dearing & Meyer, 2011).

The significant associations between frames and phases lend strong support to the importance of frames in the diffusion process. The finding show that in the later phases, there were less proportion of "definition" but more frames of evaluation and

solution, which were provided for people's cognitive process and final choice (Vishwanath & Chen, 2011). The news frames provided multiple remedies, such as self-help program, family support, school education, governmental regulation, etc. While, as for problem definitions and causal analyses, the frames became more homogeneous in the last phase. Moreover, during the second take-off in the third phase, the news texts exhibit more competing frames at one another, such as support, doubt, and neutral attitude to the treatments. By identifying and examining the frames, this study reveals the ability of a media presentation to define issues, diagnose causes, make moral judgments, and to suggest remedies (Entman, 1993; Tankard, 2001; Zhou & Moy, 2007).

Along with frames, the prominence and story components, such as headlines, visual images, metaphors, and exemplars were also used differently over time. For example, the take-off occurred when so many reports were about experts like Hongkai Tao and Ran Tao who debated and proposed different solutions for Internet addiction. In this way, the diffusion was promoted and pushed by these experts as charismatic opinion-leaders, or visible role models, who showed great influence in knowledge change (Singhal, 2011). In this way, media frames have impacts on individuals' attitudes and opinions (Pan & Kosicki, 1993).

One major criticism of diffusion research is the individual-blame bias (Rogers, 2003). Individual-blame is the tendency to hold an individual responsible for the problems, while system-blame is the tendency to hold a system for the problems of individual members of the system (Rogers, 2003). The findings reveal that the

problem of Internet addiction was defined in terms of individual-blame as well as system-blame. In the illustration, the social problem of Internet addiction was initially defined in terms of individual-blame, in some cases, system-blame factors were also recognized. Thus, when came to propose solutions, the media sought for both individual-blame and system-blame solutions. Instead of using individual as the unit of analysis as it was in many previous diffusion studies, this study investigated the media coverage, which to certain extent may overcome the individual-blame bias.

Briefly speaking, in Study I, the media reportage portrayed Internet addiction as an emerging risk in contemporary China with adolescents and young adults as the high risk groups, highlighted family reasons among other risk factors, and proposed various solutions, such as professional treatments. More about causes of Internet addiction and related treatments will be further investigated and discussed in the following chapters.

Suggestions for future studies

Previous studies show that media coverage is significant in predicting public opinion (Wang & Shoemaker, 2011). Especially, knowledge is largely gained through the mass media communication channel (Dearing & Meyer, 2011). Given the impact of mass media on public opinion, this study examined the dissemination of Internet addiction in newspapers. Future studies on public opinion regarding Internet addiction should be conducted to supplement the findings of this study. Based on the findings of this research, further studies may continue to investigate how the public

interpret the issue of Internet addiction. In addition, a conceptual and analytical strength is gained by incorporating time as an essential element in the analysis (Rogers, 2003). One can understand the social change process more accurately, since the spread of Internet addiction as a new idea was examined over time. Based on the move beyond the prior methods and models of diffusion studies, this study may serve to expand the scope of diffusion theory. Moreover, by following Entman's (1993) classification of frames, the findings of this study may be conducive and generalizable to future studies, such as the influences of media frames. One thing needs to be noticed is that Chinese media's coverage of Internet addiction was also influenced by the real world factors, such as the role of Chinese media in the Chinese context. Different from that in Western societies, external pressure from the Party and the government may play an even greater role than internal beliefs of journalistic professionalism in building media frames (Zhao, 1998, 2000; Zhou & Moy, 2007). Therefore, the findings can be used for comparative studies of other issues over time and across different social contexts (De Vreese, Peter, & Semetko, 2001; Zhou & Moy, 2007). However, different newspaper may have different characteristics, and exert different influences on the public, therefore, future study should further look into this issue by locating it into specific newspaper or several newspapers instead of all kinds of newspapers as a whole. In addition, different terms or discourse might be used to discuss the phenomenon of Internet addiction in the four areas within Greater China, therefore detailed analyses on this issue might be conducted by using textual analysis or discourse analysis.

CHAPTER SIX

STUDY II: SECONDARY RESEARCH ON CLINICAL DATA OF INTERNET ADDICTION

6.1 INTRODUCTION

In previous chapter, the media reportage of Internet addiction pointed out the negative outcomes in social, physical and psychological levels. including academic/work failure, physical problems, psychological problems, delinquency/crimes, etc., identified multiple causes, such as personal, family, interpersonal and environmental reasons, and proposed multiple solutions accordingly, for example self-help program, family support, and professional help (see Table 5.1). In order to further investigate Internet addiction, this study evaluated the profile of the Internet-dependent respondents and tried to identify the influential factors associated with Internet addiction based on clinical data. The present investigation among the respondents in the clinic revealed that Internet addiction was also associated with other risk/problem behaviors. The results suggested that specific personality traits and family communication are significant predictors for Internet addiction, risk/problem behaviors, as well as social and psychological well-being. The present study suggested that Internet addiction should be intervened and prevented when grouped with other risk/problem behaviors, by adopting the

family-based approach. Finally, the limitations involved in this study are addressed.

Specifically, following the introductory Section 6.1, Section 6.2 reviews relevant theoretical framework and previous research, and also presents research questions and hypotheses based on the reviewed literature. Section 6.3 discusses the research methods adopted in this study. Section 6.4 provides the results of Study II. Discussion, limitations and suggestions for further studies constitute Section 6.5.

6.2 CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS

Previous studies have presented multiple and conflicting claims regarding the reasons for people to become addicted to the Internet. Based on clinical record, the aim of this study was to evaluate the clinical profile, and identify predictors of Internet addiction by constructing a model elucidating the relationships among symptoms of Internet addiction disorder (IAD), risk/problem behaviors, Internet connectedness, online gaming, personal variables, family communication environment, interpersonal relationships, academic performance and psychological well-being.

6.2.1 IAD symptoms

According to the Internet addiction literature reviewed in the second chapter, it has been alleged that excessive Internet use can be pathological and addictive, which is treated as Internet addiction disorder (IAD) in clinical settings (Widyanto & Griffiths,

2006).

Previous analysis of Internet addiction revealed numerous symptoms shared by other forms of addiction, including substance-based addictions, such as tolerance, withdrawal, pre-occupation, numerous unsuccessful attempts to cut down use of the Internet, and feeling restless without Internet (Widyanto & Griffiths, 2006).

Scholars have developed various scales to study IAD symptoms, such as Morahan-Martin and Schumacker's (2000) 13-question scale, Scherer's (1997) 10-item checklist of IAD symptoms, Young's (1998a) eight-item questionnaire, and *Chinese Internet Addiction Scale* (*CIAS*) by Chen and Chou (1999).

In summary, current assessment instrument for IAD symptoms is presented in a variety of formats (criteria, checklists, or scales), with different item numbers, and using various methods (paper-based survey, online survey, interviews, case studies, etc.) (Chou, Condron, & Belland, 2005). Generally speaking, Young's (1998a) classical eight-item Internet Addiction *Diagnostic Questionnaire* (*DQ*), which was modified from *DSM-IV* criteria for pathological gambling, is widely used to examine IAD symptoms. In this study, IAD symptoms were measured based on Young's (1998a) *DQ*.

6.2.2 Internet connectedness

Young's (1998a) *DQ* is a set of eight questions related to the individual's preoccupation with the Internet, amount of time spent on the Internet, and effects of the Internet in one's life (Chou, Condron, & Belland, 2005). Therefore, in order to

investigate Internet addiction, specific instrument is needed to measure an individual's overall relationship with the Internet. Internet connectedness index (ICI) is such a measure.

Conventional dichotomous ownership and time-based measures introduce an element of technological determinism which ignores the social context (Jung, Qiu & Kim, 2001). Based on media system dependency theory, Internet connectedness was developed to capture a person's overall relationship to the Internet (Jung, Qiu & Kim, 2001; Loges & Jung, 2001). Facing the limitations of established binary measure (access/nonaccess) or a time-based measure (number of hours spent on the Internet), Jung, Qiu and Kim (2001) developed the multi-dimensional concept of Internet connectedness index, which incorporates conventional measures such as time, history, and context, and also goes beyond to capture scope, intensity, and centrality of Internet in one's life.

The ICI is composed of nine factors, which are Internet use history, task scope, site scope, goal scope, activity scope, time scope, evaluation of the Internet, Internet dependency and computer dependency. Specifically, Internet use history was operationalized as the number of years a person has used the Internet. Task scope referred to the number of tasks for a person to use Internet. Site scope concerned the places where a person connects to the Internet, such as home, Internet café, school, a community center, or a public library; Goal scope adopted the six media-system dependency goals by Ball-Rokeach (1985, 1998), including two understanding goals (social understanding and self-understanding), two orientation goals (action

orientation and interaction-orientation), solitary play, and social play. Activity scope was about the online activities people participating in, such as bulletin boards (BBS), chat rooms, weblog, game playing, social network sites (SNS), video/audio viewing/downloading, research/information, shopping, and surfing the Web. Time scope indicated the intensity of Internet use. Evaluation indicates how the Internet affects individuals' personal life. Internet dependency was measured by asking 'Imagine that you woke up tomorrow to find that the Internet had vanished. Using the 10-point scale where 1 means you wouldn't miss it at all and 10 means you would miss it an extreme amount, how much would you miss being able to use the Internet?' Computer dependency was measured by asking similar question above, but instead awaking to find that computer had vanished.

As a measure with multiple items, ICI may capture more aspects of people's Internet use. The revised version of ICI includes some updated items, such as broadband access and 3G mobile Internet access (Leung, 2010). Moreover, ICI should have a greater likelihood than the conventional single-item measures of producing significant outcomes, simply on statistical grounds. In this study, although Internet use was not measured in exactly the same way, questions about these nine dimensions were asked and they may be considered as a slight variation of the original ICI conceptualized by Jung, Qiu and Kim (2001). As a result, it is reasonable to predict the following:

H_1: The respondents with higher degree of Internet connectedness tend to show more IAD symptoms.

6.2.3 Online gaming

According to the results of Study 1 presented in the previous chapter, online games were regarded as one of the most problematic Internet applications related to Internet addiction. Thus, this following study aimed to further investigate the relationship between online gaming experience and Internet addiction.

As Young (1998b) stated, the Internet itself is not addictive. Prior research has speculated that specific applications, especially those entertainment applications with immersive or interactive features, appeared to play a significant role in the development of pathological Internet use, and pose great threat to the well-being of the users (Kim, LaRose, & Peng, 2009; Wan & Chiou, 2006). Young and Rodgers (1998) argue that dependents are less likely to control their use of highly interactive features than other online applications. In particular, online games are such entertainment applications online.

Worldwide, the fast-growing online games have attracted millions of players into the virtual worlds on the Internet (Hart, Johnson, Stamm, Angers, Robinson, Lally, & Fagley, 2009; Hsu & Yu, 2007). These online games are more intensive, more complex, more graphic, more violent, and more bloodthirsty than those earlier computerized games, and also with a larger and more thriving social network (Chuang, 2006). Thus, online gaming has been widely recognized as a popular leisure activity and unarguably become an ever-increasing part of daily life for both adults and children around the world (Grüsser, Thalemann, & Griffiths, 2007).

Similar to other places in the world, online gaming as one of the major digital entertainments has become part of everyday lifestyle in China. According to the statistics of China Internet Network Information Center (CNNIC), by 31 December 2010, the number of Internet users in China has reached up to 457 million, and 304 million are online game players, who spend quite a considerable amount of time playing online games (CNNIC, 2011). As for the market, Chinese online game market was worth US$ 3.04 billion in 2008, about 27.1 percent of the world online game market (iResearch, 2009). At the end of 2009, the revenue gained by Chinese online game industry was about RMB 30 billion with average growth rate up to 50 percent (Sun, 2009).

Coupled with this phenomenon, reports of excessive online gaming denominated as online game addiction increased in the popular press as well as in scientific research (Grüsser, Thalemann, & Griffiths, 2007). Studies in the area of online games have been growing rapidly, which focuse on the demographic makeup of gamers (e.g., Griffiths, Davies, & Chappell, 2003, 2004; Yee, 2006a), motivations of online game players (e.g., Hussain & Griffiths, 2009; Yee, 2006b), game-related psychological impacts (e.g., Funk, Baldacci, Pasold, & Baumgardner, 2004; Lo, Wang, & Fang, 2005; Whang & Chang, 2004; Whang, Lee, & Chang, 2003), and online gaming addiction (e.g., Charlton & Danforth, 2007; Chou & Ting, 2003; Grüsser, Thalemann, & Griffiths, 2007; Ng & Wiemer-Hastings, 2005).

There are various kinds of online games, and many young people show strong interests in massive multi-player online role-playing games (MMORPGs) (Kelly,

2004). Many recent games domain is the networked three-dimensional fantasy-themed first-person-view games with clear gaming narratives, where gamers are represented as versatile avatars who can walk, talk, take part in hunting, combat or various economic activities, and may also make friends, form communities, and fall in love which all offer a sense of belonging (Chuang, 2006; Jiang & Huang, forthcoming; Whang & Chang, 2004). Players interact with other players, virtual objects, and virtual environments, for more online property and endless achievements. Certain specific aspects of online games appear to facilitate excessive play to a high extent, such as role-playing, immersion, competition, interaction, realistic scenarios, and various in-game tasks (Hussain & Griffiths, 2009). Online games also contain a degree of teamwork, either forced by the game plot or arranged voluntarily by a group of players. A player has to collaborate with other players in the game to succeed in more complex goals, and he/she usually need join a "guild" or "clan" to advance further in the game (Ng & Wiemer-Hasings, 2005), while the online community membership, in-game friendship and guild dynamics also facilitated excessive play (Chen, Sun, & Hsieh, 2008; Hussain & Griffiths, 2009).

Addiction to online games has become one of the most discussed aspects of recent cyberpsychology, mainly for the potentially adverse effects associated with online gaming behaviors (Hussain & Griffiths, 2009; Smahel, Blinka, & Ledabyl, 2008). Psychologically, it has players' attention captured, and children have comparatively high expectations of such environments. However, in the long run, it can be quite problematic for children's psychological development after excessive exposure to

such games. Playing online games was reported as many young people's hobby, and even as the focus of those addicted players' life, more important and satisfying than the real-life activities (Wan & Chiou, 2006). Online game players often blur the distinction between fantasy and reality (Anand, 2007). Previous studies found that many players appeared to display the core components of addiction, such as salience, mood modification, tolerance, craving, conflict, withdrawal symptoms, and relapse (Grüsser, Thalemann, & Griffiths, 2007; Hussain & Griffiths, 2009). Thus, online gaming has become one of the most addictive activities on the Internet, and some scholars even proposed it as one subtype of Internet addiction (Wan & Chiou, 2006; Young, 1998b). Online gaming can be extremely engaging and time-consuming and some gamers invest so much time and effort that they even neglect eating, sleep, hygiene, exercise, school and work in order to stay longer in the pleasant, satisfying and persistent worlds (Hsu & Yu, 2007; Hussain & Griffiths, 2009). Thus, physical manifestations may also arise from online gaming, such as sleep disturbances, dietary problems, dry eyes, back and neck aches, headaches, and carpal tunnel syndrome (Anand, 2007). Besides adverse health effects, excessive and addictive online game use can result in a number of negative outcomes regarding players' social and psychological well-being, with a significant amount of anecdotal and clinical evidence of academic failure, interpersonal alienation, emotional disturbance, anxiety, depression, loneliness, obsessive thoughts, aggression, violence and crimes (Chak & Leung, 2004; Funk, Baldacci, Pasold, & Baumgardner, 2004; Lo, Wang, & Fang, 2005; Scott. 1995). Unsurprisingly, researchers, parents, educators, counselors,

psychologists and policymakers have been concerned about the effects on those who play them (Hart, Johnson, Stamm, Angers, Robinson, Lally, & Fagley, 2009).

Previous game studies adopted both qualitative and quantitative methods to study players' gaming behaviors, especially those heavy users. Previous research suggests many other health risks in the context of extensive online game playing, for example, online gamers may smoke more (Smyth, 2007). Moreover, online game players are more likely to visit Internet cafés when invited by friends, or perceived themselves to be good at playing games (Yates & Littleton, 1999). In addition, many previous studies have investigated the relationship between online gaming engagement and academic achievement among adolescents and university students, and the results show that the addicted players had lower school grades than their non-addicted peers (Leung & Lee, 2011; Skoric, Teo, & Neo, 2009). Therefore, the present study investigated the addictive potential of online gaming as well as the possible deleterious effect on young people's school performance and psychological well-being.

Based on the previous research reviewed, following research questions and hypotheses were proposed:

RQ_1: What are the differences in terms of Internet connectedness and levels of online gaming between different demographic groups, specifically different (a) gender groups and (b) age groups?

H_{2a}: Those who have more online game usage tend to show higher degree of Internet connectedness.

H_{2b}: Those who have more online game usage tend to show more IAD symptoms.

Additionally, this study also tested the moderating effect:

RQ_2: How can online gaming moderate the relationship between Internet connectedness and IAD symptoms?

6.2.4 Personality traits

With the increased awareness of Internet addiction as a legitimate concern, more scholars begin to investigate the personal characteristics linked to the "at risk" populations causing such a dependence upon the Internet (Loytsker & Aiello, 1997). Significant correlations have been found between Internet use and personality traits (Ebeling-Witte, Frank, & Lester, 2007). Internet use may play a role which can both increase and decrease social relationships, and that personality factors affect such outcomes (Swickert, Hittner, & Harris, 2002). In their preliminary analysis, Young and Rodgers (1998) discuss how some personality traits may act as triggers of addiction to fulfill an unmet psychological need through online stimulation, for example introverted persons may form new relationships online with greater ease than in real life circumstances.

Some previous research examined the personality traits of addiction-prone individuals, such as increased shyness, introversion, and social withdrawal (e.g., Douse & MeManus, 1993; Pratarelli, Browne, & Johnson, 1999; Shotton, 1991; Young, 1996). Despite the current lack of consensus of diagnostic criteria (Byun et al., 2009), similarities have been suggested between problematic use of the Internet

and other sorts of addiction, such as gambling, alcohol, smoking, and drug (Caplan, 2007). Previous studies suggest that the measurement of personality traits can be helpful in the screening and intervention of potential problematic use of the Internet (Takao, Takahashi, & Kitamura, 2009; Yang, Choe, Baity, Lee, & Cho, 2005).

Some personality traits are shown to be related to addictive Internet use (Takao, Takahashi, & Kitamura, 2009). For example, previous studies have been conducted to identify specific personality types and characteristics, especially neuroticism, which play important roles in the area of computer deviance (Seigfried, Lovely, & Rogers, 2008; Seigfried-Spellar & Rogers, 2010). Moreover, the Internet offers introverted individuals a medium through which to communicate with the world around them. They tend to stay online longer and think more about the Internet, which may be viewed as "problematic" according to some psychological measures (Ebeling-Witte, Frank, & Lester, 2007). Internet use generally predicted better outcomes for extraverts but worse outcomes for introverts, in terms of self-esteem, community involvement, and time management (Kraut, Kiesler, & Boneva, 2002). In addition, aggression, low self-control, and narcissistic personality traits are closely associated with certain types of Internet addiction, such as excessive online gaming (Griffiths & Dancaster, 1995; Kim, Namkoong, Ku, & Kim, 2008). These specific personality traits may place an individual at a greater risk to develop problematic Internet use (Young & Rodgers, 1998).

There are vigorous debates regarding the dimensions of personality (Costa & McCrae, 1992a, 1992b; Eysenck, 1991, 1992b, 1992c; Eysenck & Eysenck, 1975;

Eysenck, Eysenck, & Barrett, 1985). As one of the well-established and widely used scales, the Eysenck Personality Questionnaire (EPQ) is an instrument designed to assess three fundamental dimensions of personality – extraversion, neuroticism, and psychoticism. An introvert personality is characterized by individuals who control their feelings very tightly and hesitate to get into close communication with others (Eysenck, 1978), while extraversion is defined as the traits sociable, lively, talkative, energetic, active, assertive, dominant, sensation-seeking, carefree, and venturesome (Eysenck, 1990; Teng, 2008). Neuroticism includes various characteristics of negative feelings, such as anxiety, depression, guilt, shyness, low self-esteem, tense, or anger (Eysenck, 1990; Goldberg, 1999). Neurotic personality defines an individual as sensitive to all kinds of stimulations, sentimental, irritated, anxious or mostly depressed (Eysenck, 1978; Issever, Onen, Sabuncu, & Altunkaynak, 2002). Finally, psychoticism is defined by the degree to which a person is restless, irritated, aggressive, cold, egocentric, impersonal, impulsive, antisocial, unempathic, and tough-minded (Eysenck, 1990; 1992a). After decades of studies, the revised Eysenck Personality Questionnaire (EPQ-R) and the short-form Eysenck Personality Questionnaire (EPQ-S) are widely used in examining cyberpsychology and behaviors. By adopting EPQ, this study hopes to yield a further understanding of the personality traits associated with the development of Internet addiction

6.2.5 Family communication environment

In many countries, home becomes the primary place for Internet use, especially for

children (National Internet Development Agency of Korea, 2004; Rideout, Roberts, & Foehr, 2005). With Internet use skyrocketing in China, at the end of 2010, it was 89.2% of the Chinese Netizen had access to the Internet at home (CNNIC, 2011). Thus, family factors may influence the use of the Internet (Ni, Yan, Chen, & Liu, 2009; Nichols & Nicki, 2004). Many researchers have identified that adolescents particularly risk developing a problematic use of the Internet partly owing to the inadequate parental supervision and monitoring (Hall & Parsons, 2001; Kandell, 1998). In contrast, well-functioning family environment, such as high conversation and moderate conformity orientations, will be more likely to produce healthy attitudes toward online communication in the children (Ledbetter, 2010).

As the current situation in urban China, family is defined in a narrow manner, which means parents and the target child. The parent–child relationship has been found as a primary experience of the child, as parental child-rearing style and social support from the family retain a substantial influence on the development of children's social relationships (Bell, Cornwell, & Bell, 1988; Feldman & Wentzel, 1990). Studies in both communication and psychology have delineated a clear detrimental effect of negative family communication and parent-child conflicts; and conversely, positive psychological consequences of open and warm family communication (Orrego & Rodriguez, 2001). If the parents do not allow their child enough independence at home, the child may have problems and turn to risk/problem behaviors or excessive Internet use as a coping mechanism (Kandell, 1998; Koesten, Miller, & Hummert, 2002; Ni, Yan, Chen, & Liu, 2009). Another explanation is that,

with declines in communication with household family members, people may spend more time and attention on weak ties on the Internet and less time and attention on strong ties, substituting weak ties for strong ones (Kraut et al., 1998). In addition, Mesch (2006) found that frequency and type of Internet use are negatively related to family time and positively related to family conflicts, yielding a low overall perception of family cohesion.

Since the family communication environment plays a central role in adolescents' socialization (Barker & Hunt, 2006), family factors are reported to be one of the major risk factors of adolescent risk/problem behaviors (Jacob & Johnson, 1999). Previous studies have found the contribution of family communication environment on adolescents' healthy lifestyle choices for the risky health domains of sexual activity, alcohol use, and tobacco use (Baxter, Bylund, Imes, & Routsong, 2009; Baxter, Bylund, Imes & Scheive, 2005). Many studies revealed positive correlation between parental rejection and high scores on risk/problem behaviors, and parental emotional warmth was identified as the factor that protects most against the development of dysfunctional behaviors (e.g., Andersson & Eisemann, 2003; Toda, Kawai, Takeo, Rokutan, & Morinoto, 2008). For example, compared with non-dependent substance users, young addicts were found more often to have broken parenting, problematic family conditions, intra-family conflicts and ineffective parental discipline, and display a broader number of vulnerability factors (e.g., Eitle, 2005; Emery, Waldron, Kitzmann, & Aaron, 1999; Hughes, 2001; Parker & Benson, 2004; Niaz, Siddigui, Hassan, Husain, Ahmed, & Akhter, 2005; Roberts, Fuemmeler,

McClemon, & Beckham, 2008).

Poor family function has also been reported to correlate with Internet addiction in adolescents (Yen, Yen, Chen, Chen, & Ko, 2007). Families with higher conflict have lower levels of parent-child involvement, which might result in inadequate parental monitoring, and in turn may predict adolescents being predisposed to Internet addiction (Ary, Duncan, Biglan, Metzler, Noell, & Smolkowski, 1999; Yen, Yen, Chen, Chen, & Ko, 2007). In contrast, children feel obligated to act in non-deviant ways to please their parents when they feel close to their parents (Rankin & Kern, 1994; Wright & Cullen, 2001). Therefore, young people with higher conflicts with parents may refuse to conform to the parental supervision, including rules set for Internet use, and they might also seek social support online due to the lack of family support (Tichon & Shapiro, 2003; Yen et al., 2007). Moreover, excessive Internet use by children usually results in further conflict with their parents, making the problem of adolescent Internet addiction more difficult to resolve (Yen et al., 2007). Thus, without effective parental supervision and discipline, adolescents usually have difficulty in controlling time spent on the ongoing online activities, such as online gaming (Yen et al., 2007). Other risk/problem behaviors, such as smoking, drinking, drug use, delinquent behaviors, and precocious sexual intercourse might be grouped as a syndrome of risk/problem behaviors in adolescents (Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988).

Personal well-being is regarded as one valuable element of family communication research (Segrin, 2006). Floyd (2004) argues that physiological markers can be

incorporated into existing research paradigms in the field of family communication, and such a move would be fruitful for those researchers wishing for a more complete understanding of how people experience various communicative events. There have been plenty of such family communication studies on mental health issues conducted by researchers outside of the field of communication (Segrin, 2006). The parental rearing practices are found to be associated with the development of children's mental health problems (Pedersen & von Soest, 2009). Based on their study of young adult children from both first-marriage and post-divorce families, Schrodt, Ledbetter and Ohrt (2007) found that parental confirmation and affection mediate the associations among family communication patterns and young adult children's mental health and well-being. Specifically, Miller and Day (2002) assess the influence of maternal and paternal family communication orientation, by analyzing mothers and fathers separately.

Among the elements of family life, parenting styles have been identified to have profound influence on children's behaviors, psychological development and social adjustment (Pereira, Canavarro, Cardoso, & Mendonca, 2009). For decades, parenting has been described by two main dimensions, responsiveness and demandingness (Huang, Zhang, Li, Wang, Zhang, & Tao, 2010; Pereira et al., 2009; Tao, Huang, Wang, Zhang, & Zhang, 2009). Responsiveness refers to warmth, acceptance, and care, and demandingness includes discipline, supervision and overprotection (Cummings et al., 2000; Maccoby & Martin, 1983). Accordingly, four classical types of parenting styles can be classified as authoritarian (high

demandingness, low responsiveness), authoritative (high demandingness, high responsiveness), permissive-indulgent (low demandingness, high responsiveness), and neglectful or uninvolved (low demandingness, low responsiveness) (Baumrind, 1991; Huang et al., 2010; Tao et al., 2009). Previous studies suggested that negative parenting styles were consistently associated with children's externalizing and internalizing problems (e.g., Caron, Weiss, Harris, & Catron, 2006; Chen, Liu, & Li, 2000; Javo, Ronning, Heyerdahl, Rudmin, 2004; Muris, Meesters, & van der Berg, 2003) as well as low academic and social competences (e.g., Chen et al., 2000; Morrison & Cooney, 2002).

Although home Internet access has continued to increase in Mainland China, little is known about the association between family communication and actual Internet usage in homes (Bricolo, Gentile, Smelser, & Serpelloni, 2007; Huang et al., 2010; Tao et al., 2009). The family-based approach suggests that inadequate or ineffective parental discipline and supervision, and poor intra-family relationships are the first step in the development of problematic behaviors and poorer psychological outcomes (Lochman & Van den Steenhoven, 2006). Thus, the aim of this study was to identify the patterns in parenting styles and investigate the associations of Internet addiction, risk/problem behaviors and relevant well-being, with family-correlated factors, including parental marital relationship, and parenting styles.

Regarding the popularity of online gaming among the respondents, this study also tested its moderating effect between family communication and Internet addiction:

RQ_3: How can online gaming moderate the relationship between family

communication environment, specifically parental marital relationship and IAD symptoms?

6.2.6 Interpersonal relationship

The lack of good interpersonal relationships has been confirmed to be stably associated with the possibility of developing problematic behaviors in the interaction with various new technologies of communication (e.g., Cheng & Peng, 2008; Douglas, Mills, Niang, Stepchenkova, Byun, Ruffini, Lee, Loutfi, Lee, Atallah, & Blanton, 2008; Ha, Kim, Bae, Bae, Kim, Sim, Lyoo, & Cho, 2007; Lu, 2008). According to current Internet addiction literature, a stable negative correlation has been identified between interpersonal relationships and Internet overuse (Milani, Osualdella, & Blasio, 2009; Shepherd & Edelmann, 2001). The lack of social support has been found to be associated with mental impairment (Ybarra, 2004), which may increase susceptibility to Internet addiction (Kraut et al. 1998; Yeh, Ko, Wu, & Cheng, 2008).

Previous research indicates that interpersonal factors have influence upon individuals' overall well-being (Miczo, Miczo & Johnson, 2006). Several studies have identified that people who have poor social skills or experience more interpersonal problems might be drawn to online relationships (Kraut et al., 1998; LaGreca & Harrison, 2005). Other studies have showed that cyberspace relationships substitute for the unmet need in real-life relationships (Lo, Wang, & Fang, 2005; Young, 1998b). Therefore, individuals with problems in the area of interpersonal

relationship tend to show higher level of Internet use (Caplan, 2007). In other words, when the level of interpersonal interaction is perceived as inadequate, a parallel high dependency on excessive Internet use is found (Milani, Osualdella, & Blasio, 2009; Ni, Yan, Chen, & Liu, 2009; Özcan & Buzlu, 2007; Swickert, Hittner, & Harris, 2002). As a whole, previous studies indicate that a low quality of interpersonal relationships can expose people to an increased risk of developing Internet addiction (Milani, Osualdella, & Blasio, 2009).

Based on his study of interpersonal processes, Sullivan (1953) proposed the interpersonal theory, which suggests that individuals can never be isolated from the interpersonal relations in which they live (Stephen & Black, 1995). As for adolescents and young adults, interactions with peers and teachers constitute important predictors of social acceptance and support other than family members. Thus, adolescents with poor interpersonal relationships with peers and teachers might be at a greater risk of developing Internet addiction. This process can be explained in terms of a reciprocal influence between the low quality of interpersonal relationships and the tendency to react to situations of psychological stress by avoiding the source (Milani, Osualdella, & Blasio, 2009). Anderson and Harvey (1988) point out that the unpleasant interpersonal experiences during childhood and adolescence might play a causal role in the emergence of social anxiety, and a considerable number of studies have confirmed this relationship (e.g., Inderbiten, Walters, & Bukowski, 1997; LaGreca & Harrison, 2005; Vernberg, Abwender, Ewell, & Beery, 1992). To avoid the source of stress, some individuals tend to engage in Internet use as an alternative

to real-life relationships (Whang & Chang, 2004). With anonymity, those who suffer from poor real-life interpersonal relationships may feel more comfortable to speak without strict emotional control, anxiety, and fear (Liu & Kuo, 2007). In this way, Internet might be used as a substitute for real-world social contacts or as an escape when people feel anxious about establishing real interpersonal relationships (Liu & Kuo, 2007; Shepherd & Edelmann, 2001).

Illuminated with Sullivan's (1953) interpersonal theory, this study examined whether interpersonal relationship may influence Internet addiction, risk/problem behaviors, and a person's social and psychological well-being (Stephen & Black, 1995). With advancing age, children increasingly turn to peers for emotional support (Burleson & Kunkel, 2002). Moreover, as students, a great portion of time is spent at school. Nowadays, great changes have been witnessed on educational philosophy, school atmosphere and relationships between teachers and students (Lei & Chen, 2005). Therefore, besides family communication, this study specifically assessed the influence of two socialization agents, peers and teachers (Burleson & Kunkel, 2002).

6.2.7 Risk/problem behaviors

Some scholars proposed that Internet addiction can be regarded as a newly emerged risk/problem behavior of adolescents, since adolescents with other risk/problem behaviors also spend much time on Internet activities at home or in cyber cafés (Holden, 2001; Ko et al., 2008). According to the problem-behavior theory (Hays, Stacy, & DiMatteo, 1987), smoking, alcohol, illicit substance use, and other

risk/problem behaviors can be grouped as problem behaviors of adolescents which have similar psychosocial proneness, including social environment, perceived environment, personality, and behavior (Jessor, 1991; Ko, Yen, Yen, Chen, Weng, & Chen, 2008). These risk/problem behaviors usually coexist as a lifestyle, and can result in many negative outcomes, concerning the educational system, present living conditions, marital status, and relationship with identified attachment figure (Andersson & Eisemann, 2003; Ko et al., 2008).

Previous research highlighted that addicts exhibited considerably more problematic behaviors (Andersson & Eisemann, 2003). In addition, young people with some risk/problem behaviors may lower the threshold to develop another (Holden, 2001). Therefore, it is important to reveal the mechanism of Internet addiction grouped with other risk/problem behaviors (Ko et al., 2008). Besides, comorbidity of disorders may indicate common etiology or causal relationship (Mueser, Drake, & Wallach, 1998). Thus, evaluating and comparing associated factors of other risk/problem behaviors, such as smoking, drinking, and gambling, may shed light on the inherent psychopathology of Internet addiction and may also provide more evidence for further intervention (Jessor, 1987; Ko et al., 2008).

Based on the risk/problem behavior theory, the personality trait that determine risk-taking propensity was a proximal proneness for many risk/problem behaviors, and those factors such as poor family function, peer influence, and lower life satisfaction also have been reported to be associated with adolescents' risk/problem behaviors (Jessor, 1987; Yanish & Battle, 1985). As aforementioned literature, the

association between psychosocial proneness and Internet addiction has been reported in many studies (e.g., Ko, Yen, Chen, Chen, & Yen, 2005).

There is a positive association between Internet behavior and daily social behavior that problematic Internet use is likewise associated positively with delinquent daily social behavior (Ma, Li, & Pow, 2011). Some characteristics of Internet use may explain its function on the risk/problem behaviors (Ko et al., 2008). First, social contact over the Internet can be anonymous and fluid, which may lower inhibitions (Leung, 2004; Morahan-Martin & Schumacher, 2000). Some Internet users tend to engage in free expression, develop new online personas, and flame others because of the anonymity on the Internet (Young & Rodgers, 1998). Thus, outbursts of anger, over-sexualized comments, or blunt remarks which are typically self-monitored thoughts in real life may be less filtered on the Internet (Young & Rodgers, 1998). Second, the role playing games online can provide the pleasure of control which may be utilized to cope with lower self-esteem, helplessness and poor life satisfaction in real life (Ko et al., 2008). Third, it is much easier to make friends and find companions online, which can provide compensation for poor real-life support. Last, the lack of monitoring on the Internet provides more freedom, so many risk/problem behaviors can be recognized, rationalized, shared, and even mutually encouraged online (Ko et al., 2008). Therefore, the accessibility of the Internet has allowed people even adolescents unprecedented access to various materials. Hence, numerous studies have explored the problematic online experiences, such as risky or inappropriate sexual relationships, online pornography, or cybersex, and the potential

negative impact on individuals' psychological well-being (Mitchell, Sabina, Finkelhor, & Wells, 2009). For example, online activities like online gaming was found to be associated with more aggressive behaviors, rule breaking, and thought disturbances (Jackson, Fitzgerald, Zhao, Kolenic, von Eye, & Harold, 2008). Moreover, individuals with Internet access reported significantly earlier ages for sexual intercourse initiation than participants without Internet access, especially due to the accessibility of sexually explicit materials online (Kraus & Russell, 2008; Wolak, Mitchell, & Finkelhor, 2007).

Another factor needs to be noticed is the vigorous development of Internet café as one of the physical locations for Internet use, a third place for interaction, or an Internet-mediated public sphere (Steinkuehler & Williams, 2006). Similar to the situations in South Korea and Taiwan, the rise of the Internet and online games are the main drivers of the rapid growth of Internet cafés in Mainland China (Hsu & Chuang 2008). Internet cafés provide 24-hour rapid Internet access at low prices. Different from many Western countries, adolescents and students constitute major patronages in Mainland China, who are lack of self-control and usually stay unconsciously longer time in Internet cafés, mostly for the indulging in online games (Wu & Cheng, 2007). Usually, Internet cafés are masculine gaming spaces full of males playing various online games (Hsu & Chuang, 2008). Internet cafés, together with some virtual reality (VR) environments have previously shown their efficacy as tools for eliciting smoking craving (García-Rodríguez, Ferrer-García, Pericot-Valverde, Gutiérrez-Maldonado, Secades-Villa, & Carballo, 2011). There are

also many illegal Internet cafés, which are dark, narrow, and stuffy, and some of them even sell cigarettes and wine to teenagers (Yang, 2006). Thus, Internet cafés have brought about many unexpected social problems and negative effects on society. Internet cafés in China have been portrayed as physically unsafe and morally unsuitable gathering places full of young people with various risk/problem behaviors (Golub & Lingley, 2008).

Therefore, this study aimed to evaluate the association between Internet addiction and other risk/problem behaviors, with specia ttention paid to Internet café patronage. Based on risk/problem behavior theory, the present study aimed to explore whether Internet addiction as well as other risk/problem behaviors correlated with some psychosocial proneness of risk/problem behaviors among young people. Thus, this study examined risk/problem behaviors among the respondents:

H_{3a}: Those who show higher degree of Internet connectedness tend to have more risk/problem behaviors.

H_{3b}: Those who have more online game usage tend to have more risk/problem behaviors.

H_{3c}: Those who have more risk/problem behaviors tend to show more IAD symptoms.

RQ_4: What is the relative influence of family communication environment, personality traits, Interpersonal relationship, Internet connectedness, online gaming, and demographics on (a) IAD symptoms and (b) risk/problem behaviors?

In addition, since risk/problem behaviors are regarded as developmental problems during the period of adolescence, the following research question was proposed:

6.2.8 Social and psychological well-being

Scholars from multiple disciplines have conducted research to examine the social and psychological impact of the Internet. Studies show that Internet use predicts subsequent well-being, such as academic performance and psychological well-being (Jackson, Samona, Moomaw, Ramsay, Murray, Smith, & Murray, 2007). Excessive use of the Internet and Internet addiction can lead to many negative outcomes, such as poor performance at school, social isolation, and impediment of the adolescent's psychosocial development (Clark, Frith, & Demi, 2004; Özcan & Buzlu, 2007). Therefore, problematic Internet use can cause declines in social and psychological well-being.

As for social well-being, many studies have been conducted to examine how academic performance is related to young people's Internet use. Previous studies find that the Internet has produced mixed results (Jackson, Samona, Moomaw, Ramsay, Murray, Smith, & Murray, 2007, Roschelle, Pea, Hoadley, Gordin, & Means, 2000). On one hand, some studies suggest that the Internet provides tremendous educational benefits, such as more information access, better visual intelligence skills and enhancement of teacher-student communication (Ni, Yan, Chen, & Liu, 2009; Subrahmanyam, Greenfield, Kraut, & Gross, 2001; Subrahmanyam, Kraut, Greenfield, & Gross, 2000). On the other hand, many negative impacts are listed,

such as most non-school hours are spent on the Internet or playing online games, not keeping up with assignments, missing classes, falling asleep in school, declining grades, failing a course, missing a social engagement, and dropping out of other social groups (clubs or sports) (Anand, 2007; Kim, LaRose, & Peng, 2009; Orzack, 2003). Research on the relationship between Internet use and the ability to focus attention showed that amount of time spent using the Internet by young people was significantly related to higher ratings of distractibility for academic tasks (Levine, Waite, & Bowman, 2007). Excessive Internet use also caused deficient self-regulation (LaRose, Lin, & Eastin, 2003). According to their findings, Chou and Hsiao (2000) report that Taiwanese students might develop some academic problems, such as dropping out or losing learning interest in school, owing to excessive use of the Internet. Hence, the following hypothesis and research question were asked:

H_4: Those who show more IAD symptoms tend to have poorer academic performance.

RQ_5: How can IAD symptoms mediate the relationship between online gaming and academic-related problems?

The relationship between psychological well-being and Internet usage is an enduring question in computer mediated communication research (Kim, LaRose, & Peng, 2009). However, current studies indicate that the relationship between Internet use and psychological or mental well-being is even more equivocal (Jackson, 2008; Özcan & Buzlu, 2007). With a preponderance of evidence, researchers argue that uncontrolled or compulsive Internet use negatively affects the state of psychosocial

well-being (Caplan, 2007; Kraut, Kiesler, & Boneva, 2002; Özcan & Buzlu, 2007). For example, excessive Internet use may contribute to the reclusive behavior of the young people (Ni, Yan, Chen, & Liu, 2009). Individuals with problematic Internet use have been reported to have high rates of social withdrawal, loneliness, and depressive symptoms (even when previous depression scores were controlled for) (e.g., Davis, Flett, & Besser, 2002; Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998; Moody, 2001; Morahan-Martin, 2005; Morahan-Martin & Schumacher, 2000; Morgan & Cotton, 2003; Shapira, Goldsmith, Keck Jr., Khosla, & McElroy, 2000; Shaw & Grant, 2002; Whang, Lee, & Chang, 2003). However, another group of studies turn the relationship around, arguing that psychosocial dysfunctions cause addictive, habitual, or problematic Internet use (Caplan, 2007; Kim, LaRose, & Peng, 2009; LaRose, Lin, & Eastin, 2003). In regard to premorbid conditions, some researchers proposed that preoccupation with Internet addiction may be related to various psychosocial or clinical problems that predate Internet use, such as anxiety, depression, loneliness, and low self-esteem (Davis, 2001; Yang, Choe, Baity, Lee, & Cho, 2005). Individual with these problems may perceive online communication as the "Prozac of social communication" because of its greater anonymity, and have higher preference for online interactions (Leung, 2011; Morahan-Martin & Schumacher, 2000, p. 25). Recently, based on their longitudinal study, some scholars argue that the relationship between Internet use and psychological well-being might be bidirectional (van den Eijnden, Meerkerk, Vermulst, Spijkerman, & Engels, 2008). Thus, current literature suggests that

excessive Internet use can have potential negative effects on a person's well-being, while certain symptom clusters may also predispose some individuals to preoccupation with the Internet (Yang, Choe, Baity, Lee, & Cho, 2005).

To examine how excessive Internet use influenced people's psychological health, psychological symptoms were investigated in previous studies, by using well established scales such as the Symptom Check List-90 (SCL-90) (Issever, Onen, Sabuncu, & Altunkaynak, 2002). The SCL-90 (Derogatis, 1994; Derogatis, Lipman, & Covi, 1973) was designed to assess psychological problems and symptoms of psychopathology, and is comprised of 90 items organized within nine symptom dimensions: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. Adopting SCL-90, some Korean scholars report that Korean senior high school students with excess Internet use subsequently exhibit significantly more psychiatric symptoms than those who use the Internet less frequently (Yang, Choe, Baity, Lee, & Cho, 2005). In this study, the young people entered the Internet addiction clinic due to various social or psychological problems. During the days in the clinic, they received systematic treatments but did not have access to the Internet. To find out possible improvement in psychological well-being, the following research question was proposed:

RQ_6: What are the differences regarding psychological well-being of the respondents on admission and discharge? Or is there any significant improvement in terms of psychological well-being?

In addition, this study also tested the following hypotheses:

H_{5a}: The degree of Internet connectedness tends to have significant relationship with academic performance.

H_{5b}: Those who have more online game usage tend to have poorer academic performance.

H_{5c}: Those who have more risk/problem behaviors tend to have poorer academic performance.

H_6: Those who go to Internet café for Internet use tend to have (a) higher degree of ICI, (b) more online game usage, (c) more IAD symptoms, (d) more risk/problem behaviors and (e) worse psychological well-being.

H_7: Those who have online gaming hobby tend to have (a) higher degree of ICI, (b) more IAD symptoms, (c) more risk/problem behaviors, and (d) worse psychological well-being.

Based on the reviewed literature, this study attempted to address the relationship between Internet use, especially the specific Internet activity of online gaming, and individuals' well-being. To assess well-being, both academic performance markers and psychological well-being measurement were adopted. Thus, the following research questions were proposed:

RQ_7: How do family communication environment, personality traits, Interpersonal relationship, Internet connectedness, online gaming, IAD symptoms, risk/problem behaviors, and demographics predict social well-being, in terms of (a) academic assessment and (b) academic-related problems?

RQ_8: How do family communication environment, personality traits, interpersonal relationship, Internet connectedness, online gaming, IAD symptoms, risk/problem behaviors, and demographics predict (a) psychological well-being and (b) possible psychological improvement?

The detailed conceptual mapping of this study is presented in Appendix 2.

6.3 METHODS

The data were based on the clinical records of in-patients enrolled at the Chinese Youth Psychological Development Base (hereafter referred to as "the Base"). The Base is an Internet addiction clinic situated in the southern suburb of Beijing, which is affiliated to the Addiction Medicine Center (AMC) in the General Hospital of Beijing Military Region. Firstly opened within the AMC building in March 2005 and later moved to southern suburb of Beijing from April 6, 2006 on, the Base is one of the earliest and largest Internet addiction clinics in Mainland China. About 60 full-time staff constitute the professional team, including medical doctors, nurses, psychotherapists, military instructors, teachers, etc. Taking up an area of 24,500 square meters, the Base has an in-patient capacity of 100.

As for all the patients, they were required to complete several computer-based scales assessing parenting style, personality, and psychological well-being. Other information, such as parental marital relationship, interpersonal relationship, Internet use, risk/problem behaviors, academic performance, and demographics, were also collected during the diagnostic interview on admission. As discussed in previous

literature review part, the diagnostic criteria of IAD used when the patients entered the Base were composed of four domains, symptom, severity, course, and exclusion, with a '2+1' rule referring to the seven symptom items (Tao et al., 2010). For the inter-rater reliability, the consistency rate of any two psychiatrists reached 98.0% (Huang, Zhang, Wang, Zhang, & Tao, 2010).

During their in-patient days, there was no Internet access, and various treatment sessions were provided for the patients. After going through one course of treatments of three months, there would be a group evaluation to decide whether the patient is quite recovered to be discharged. On discharge, all the patients were required to take the test of psychological well-being again. Nevertheless, the parents could end the treatments because of different reasons. The details of treatments and daily activities in the clinic are presented in the following chapter, since there was no information about treatments in the quantitative-format clinical records.

6.3.1 Data collection

In total, 1,505 in-patient records between January 2005 and March 2010 were retrieved. However, there were a lot missing data in some parts of the clinical records. Moreover, some patients were found to have one or more diagnosed psychological or mental disorder(s). Therefore, out of the total 1,505 in-patients, 618 of them were enrolled in this study. All the 618 in-patients were diagnosed with IAD in the diagnostic interview on admission. They also had complete data for all the variables in the conceptual mapping of Study II. All analyses were done among the 618 cases.

6.3.2 Sample profile

Among the 618 respondents, as for demographics, 565 (91.4%) were male, and 53 (8.6%) were female. Their ages range from 13 to 29 (Mean=18.09, *SD* =2.81). As for occupational background, 565 (91.4%) were students. As for education background, 305 (49.4%) were in high school, followed by 187 (30.3%) in junior high school, 115 (18.6%) in college, 10 (1.6%) in elementary school, and 1 (0.2%) attended graduate school. In terms of social status, 161 (26.1%) were at school, 40 (6.4%) at work, 230 (37.2%) were school dropouts, 174 (28.2%) suspended their schooling, and 13 (2.1%) were unemployed. Finally, 604 (97.7%) lived in urban areas, and 14 (2.3%) lived in rural areas. Referring to provincial regions, the respondents were from almost all the 34 provincial regions, except Tibet and Macau. Among them, 20.2% came to the clinic voluntarily, and 79.8% came involuntarily, with 70.7% being deceived and 9.1% being forced by their parents. The detailed sample profile is presented in Table 6.1.

Table 6.1 Sample Profile

Variables	*Mean*	*SD*
Age	18.09	2.81
	Freq.	**%**
Gender		
Male	565	91.4
Female	53	8.6
Occupation		
Student	565	91.4
Non-student	53	8.6
Education		
Elementary school	10	1.6
Middle school	187	30.3
High school	305	49.4
College	115	18.6
Graduate school	1	0.2
Social status (normal or not)		
Yes		
At school	161	26.1
At work	40	6.4
No		
School dropout	230	37.2
School suspending	174	28.2
Unemployed	13	2.1
Residence		
Urban	604	97.7
Rural	14	2.3
Admission		
Voluntarily	125	20.2
Deceived	437	70.7
Forced	56	9.1

Notes: N =618.

6.3.3 Measures

The secondary data based on the respondents' medical record were divided into eleven parts: 1) family communication environment (a. parental marital relationship and b. parenting style), 2) personality traits, 3) interpersonal relationship, 4) Internet connectedness, 5) online gaming, 6) IAD symptoms, 7) risk/problem behaviors, 8) academic performance, 9) psychological well-being, and 10) demographics.

Family communication environment. a) *Parental marital relationship.* Parents of the respondents were asked to indicate on an eleven-point Likert scale (ranging from '0' being extremely low to '10' being extremely high) on the degree of their mutual affection, marital communication and quality of marital sex life. The reliability alpha was .78 for this subscale. b) *Parenting style.* The EMBU (a Swedish acronym for 'Egna Minnen Beträffande Uppfostran', which means 'personal memories of parental upbringing') was used to measure parenting style from child's perspective. It is a well-established scale based on extensive clinical and empirical studies (Perris, Jacobsson, Lindström, von Knorring & Perris, 1980). The Chinese version of EMBU was developed (Yue, Li, Jin & Ding, 1993) and has been widely used within Chinese context (e.g., Yang, Wang, Li, Teng & Ren, 2008; Huang & Wang, 1994; Wang, Wang & Ma, 1999; Zhang, Song & Zhang, 1993). This study was based on the Chinese version of EMBU. The scale contains 58 items for father's parental rearing behaviors and 57 items for mother's rearing behaviors, with a four-point Likert scale with 1 = "never" to 4 = "always". Based on the definition, there were six paternal parenting styles, which were emotional warmth and understanding (19 items),

punishment (12 items), refusal and rejection (6 items), over-protection (5 items), favoring the respondent (5 items), and over-interference (10 items), as well as five maternal parenting styles, which were emotional warmth and understanding (19 items), punishment (9 items), refusal and rejection (8 items), over-protection (16 items), and favoring the respondent (5 items). As for paternal parenting style, the reliability alpha scores were .93 (paternal emotional warmth and understanding), .92 (paternal punishment), .81 (paternal over-interference), .95 (paternal favoring the respondent), .85 (paternal refusal and rejection), and .73 (paternal over-protection) respectively. For maternal parenting styles, the reliability alpha scores were .94 (maternal emotional warmth and understanding), .85 (maternal over-protection), .84 (maternal refusal and rejection), .91 (maternal punishment), and .96 (maternal favoring the respondent) respectively. Sample items included: "My parents tried to spur me to become the best"; "It happened that my parents gave me more corporal punishment than I deserved"; "If things went badly for me, I then felt that my parents tried to comfort and encourage me"; and "My parents would look sad or in any other way show that I had behaved badly so that I got real feelings of guilt".

Personality traits. Eysenck personality questionnaire (EPQ) is a widely used self-report measure of personality traits (Eysenck & Eysenck, 1975), and the revised short form version (EPQ-R) involves 36 items (Eysenck, Eysenck & Barrett, 1985; Weaver & Kiewitz, 2007). Weaver and his colleagues argue that the original design of EPQ was problematic by using dichotomous questions and they modified it to permit Likert-type scale responses (Richendoller & Weaver, 1994; Weaver, 1991;

Weaver & Kiewitz, 2007). The modified Chinese EPQ-R validated by Gong (1991) was adopted in this study. The respondents were asked to indicate on a three-point Likert scale with '1' being agree to '3' being disagree on the 36 items. To identify the personality traits of the respondents with IAD symptoms, a principal components factor analysis with Varimax rotation was conducted. Factor analysis demonstrated that 33 out of the original 36 personality items were formed into three different personality traits. Three items were dropped out from the factor analysis procedures, because items such as "Would you take drugs which may have strange or dangerous effects?", "Do you think marriage is old-fashioned and should be done away with?" and "Do you think people spend too much time safeguarding their future with savings and insurance?" might not be quite applicable among Chinese young people due to cultural differences. The different groupings were named according to the definitions of EPQ-R. The three factors with eigenvalues greater than 1.0, explained 71.09% of the total variance. As shown in Table 6.2, the first factor, Neuroticism–Stability (eigenvalue = 7.50, 37.55% of variance), consisted of 12 items, revealed the qualified respondents as shy, tense, anxious, moody, irrational, emotional, and depressed, with guilt feelings and low self-esteem. Cronbach's alpha was at .86. Socialization–Psychoticism (eigenvalue = 4.82, 22.67% of variance, alpha = .89) is the second factor consisted of 9 items. Psychoticism described the respondents as aggressive, impulsive, egocentric, tough-minded, cold, impersonal, and antisocial. Finally, the third factor, Extraversion-Introversion (eigenvalue = 2.73, 10.87% of variance, alpha = .84), comprised 12 items, indicated the respondents as

lively, sociable, active, assertive, dominant, carefree, sensation-seeking, and venturesome. As a whole, the three personality traits were conceptually consistent with the theoretical descriptions of EPQ-R (Eysenck, Eysenck & Barrett, 1985; Weaver & Kiewitz, 2007).

Table 6.2 Factor Analysis of Personality Traits of the Respondents with IAD Symptoms

Personality Factors	*Mean*	*SD*	Factors 1	2	3
1 Neuroticism-Stability					
1.Are you often troubled about feelings of guilt?	2.24	.86	.68		
2.Would you call yourself tense or 'highly-strung'?	2.57	.70	.66		
3.Do you often feel lonely?	2.32	.85	.66		
4.Are you an irritable person?	2.63	.60	.64		
5.Do you worry too long after an embarrassing experience?	2.46	.77	.60		
6.Would you call yourself a nervous person?	2.29	.82	.59		
7.Are you a worrier?	2.31	.78	.58		
8.Do you suffer from 'nerves'?	2.19	.85	.57		
9.Do you often feel 'fed-up'?	2.33	.85	.54		
10.Are your feelings easily hurt?	2.33	.82	.54		
11.Does your mood often go up and down?	2.41	.74	.53		
12.Do you ever feel 'just miserable' for no reason?	2.09	.89	.49		
2 Socialization-Psychoticism					
13.Do you take much notice of what people think?	1.50	.95		.69	
14.Do you try not to be rude to people?	2.13	.88		.69	
15.Do you enjoy co-operating with others?	2.06	.92		.68	
16.Would you like other people to be afraid of you?(Reversed)	1.98	.96		.66	
17.Is it better to follow society's rules than go your own way?	2.14	.95		.63	
18.Do you prefer to go your own way rather than act by the rules?(R)	1.80	.85		.61	
19.Do good manners and cleanliness matter much to you?	2.33	.86		.58	
20.Does it worry you if you know there are mistakes in your work?	2.17	.76		.53	
21.Would being in debt worry you?	2.34	.80		.52	
3 Extraversion-Introversion					
22.Can you get a party going?	2.22	.85			.68
23.Are you a talkative person?	2.03	.82			.66
24.Are you rather lively?	2.29	.78			.62
25.Can you usually let yourself go and enjoy yourself at a lively party?	2.16	.87			.62
26.Do other people think of you as being very lively?	2.41	.74			.62
27.Do you usually take the initiative in making new friends?	2.01	.88			.56
28.Do you enjoy meeting new people?	2.06	.88			.52
29.Do you like plenty of bustle and excitement around you?	2.17	.80			.52
30.Can you easily get some life into a rather dull party?	2.30	.87			.52
31.Do you tend to keep in the background on social occasions?(R)	1.90	.87			.51
32.Are you mostly quiet when you are with other people?(R)	2.06	.88			.50
33.Do you like mixing with people?	2.25	.86			.49
Eigenvalue			7.50	4.82	2.73
Percent of Variance explained			37.55	22.67	10.87
Cronbach's Alpha			.86	.89	.84

Scale: 1=agree and 3=disagree. N=618 (Total variance: 71.09%)

Interpersonal relationship. The respondents were asked to indicate on a three-point Likert scale (from poor to good) on their interpersonal relationship with peers and teachers during the years before six years old, between six and twelve years old, and after twelve years old. Reliability alpha for the composite scores

were .78 (with peers) and .73 (with teachers) respectively.

Internet connectedness. As mentioned in the literature review part, the measurement of Internet connectedness was composed of nine domains. (1) Internet use history was measured as the number of years the respondents had used the Internet on a four-point scale, from 'less than one year' to 'more than five years'. (2) Task scope referred to the number of tasks to use Internet. The respondents were asked whether they used Internet for work-related, school-related, or personal-related tasks, with 1 = "yes" and 0 = "no". Responses were added up to show the breadth of tasks. (3) Referring to site scope, the respondents were asked whether they went to Internet café to use Internet. (4) Goal scope adopted the six media-system dependency goals raised by Ball-Rokeach (1985, 1998): (a) to stay on top of events and groups that you care about, (b) to express yourself or your opinions, (c) to accomplish business, financial, or work tasks, (d) to get advice on how to deal with other people, such as doctors and other health professionals, (e) to play or amuse yourself, and (f) for social reasons like making new friends. The respondents were asked how many of the six goals they pursue through online activities. The original responses (0 to 6) were re-coded as 1 referring to none of the goals being chosen and 2 for choosing one or more goals. (5) Activity scope was measured by asking the respondents 'What Internet activities do you participate in, other than e-mail?' Response categories included chat rooms, game playing, video/audio viewing/downloading, shopping, research/information, bulletin boards (BBS), weblog, social network sites (SNS), and surfing the Web. The total number of

responses (0 to 9) indicates breadth of participation, and then 0 was re-coded as 1, and others were re-coded as 2. (6) Intensity scope was about the time spent on interactive online activities. The respondents were asked 'Not counting personal e-mail, how many hours do you spend on participating in any online activities interacting with other people (such as chat rooms and game-playing)?' Those who did not participate in the interactive online activities were coded as 1, and the others were coded as 2. (7) Evaluation of how the Internet affects personal life was assessed by the question, 'Thinking about all the pros and cons of the Internet, would you say it has an overall positive or negative effect on your life?' on a five-point Likert-scale, and recoded as 1 (very negative and somewhat negative), 2 (neutral), to 3 (somewhat positive and very positive). (8) Internet adhesiveness was measured by asking 'How many hours did you spent online continuously as for the longest time?' Responses were re-coded as 1 (less than 6 hours), 2 (6 to 18 hours), 3 (19 to 24 hours) and 4 (more than 24 hours). Finally, (9) Computer interest was measured by asking the respondents whether they were interested in computer or not. Each domain was multiplied by a value to create a common factor of twelve, for instance, Internet use history, a four-point scale, was multiplied by three, while binary scales, such as site scope, goal scope, activity scope, and intensity scope were multiplied by 6 respectively. Internet connectedness index was calculated by taking an overall average, ranging from 1 to 12. The reliability alpha was .68 for this subscale.

Online gaming. This subscale was composed of three items, including online game playing, online game use history and number of online friends. Specifically, the

respondents were asked to give dichotomized responses (yes or no) on whether they are online game players; they were asked to indicate on a four-point scale (from 'before six years old' to 'after eighteen years old') on when they began playing online games; and the respondents also responded on a five-point Likert scale (from none to quite many) on how many online friends did they have. To create an online gaming index, each item was multiplied by a value to create a common factor of 20. For instance, the binary scale of online game playing was multiplied by ten, the four-point scale was multiplied by five, and the five-point scale was multiplied by four. Online gaming index was calculated by taking an overall average, ranging from 1 to 20. The reliability alpha was .68 for this three-item subscale.

IAD symptoms. Young's (1998a, 1998b) classic eight-item symptom checklist for Internet addiction was adopted. The respondents responded yes or no on whether they agreed on the following statements: (1) 'Do you feel preoccupied with the Internet (think about previous on-line activity or anticipate next on-line session)?' (2) 'Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?' (3) 'Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?' (4) 'Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?' (5) 'Do you stay on-line longer than originally intended?' (6) 'Have you jeopardized or risked the loss of significant relationship, job, educational or career opportunity because of the Internet?' (7) 'Have you lied to family members, therapist, or others to conceal the extent of involvement with the Internet?' and (8) 'Do you use the Internet as a way of

escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)?' The reliability alpha was .69 for this scale.

Risk/problem behaviors. The respondents responded 'yes or no' on whether they had the following risk/problem behaviors, smoking, drinking, gambling, and precocious sexual intercourse. The reliability alpha was .73 for this scale.

Academic performance. Academic assessment and academic-related problems were used to gauge academic performance. As for academic assessment, the subscale contained three items, which were academic assessment of primary school, junior high school and high school, with a four-point Likert scale from bad to excellent. The reliability alpha was .78 for this subscale. While in terms of academic-related problems, the respondents were asked to indicate 'yes or no' on whether they had the following academic-related problems: (1) academic failure, (2) decreased learning interests, (3) play truant, and (4) school dropout. The reliability alpha was .72 for this subscale. In addition, items for academic-related problems were reversed and then computed the overall academic performance with items for academic assessment. The reliability alpha was .70 for this subscale.

Psychological well-being. The Chinese version of Symptom Check List-90-Revision (SCL-90-R) was adopted to evaluate the respondents' psychological well-being at intake and measure respondent progress after treatment (Derogatis, 1994; Derogatis & Savitz, 2000; Zhang, 2005). As one of the most widely used and well validated self-report symptom inventories, SCL-90-R is designed to reflect the psychological symptoms seen in psychiatric and medical

patients (Yang, Choe, Baity, Lee, & Cho, 2005). The respondents responded on 90 items, with a five-point Likert scale from "not at all" to "extremely" to measure the extent to which they have experienced the listed symptoms in the last seven days. The SCL-90-R contains one Global Severity Index (GSI), which is the grand mean of all 90 items to measure the extent or depth of the individual's overall psychiatric disturbance, and nine symptom domains (see Appendix 3), which are somatization (12 items), obsessive–compulsive (10 items), interpersonal sensitivity (9 items), depression (13 items), anxiety (10 items), hostility (6 items), phobic anxiety (7 items), paranoid ideation (6 items), and psychoticism (10 items), with the higher score indicating a greater degree of psychological distress (Huang, Zhang, Li, Wang, Zhang, & Tao, 2010). Overall, the measure has high test–retest reliability. As for the psychological well-being on admission, the reliability alpha scores were .98 (the global severity index), .88 (somatization), .85 (obsessive-compulsive), .86 (interpersonal sensitivity), .90 (depression), .89 (anxiety), .85 (hostility), .80 (phobic anxiety), .74 (paranoid ideation), and .81 (psychoticism) respectively. Referring to the psychological well-being on discharge, the reliability alpha scores were .97 (the global severity index), .87 (somatization), .85 (obsessive-compulsive), .84 (interpersonal sensitivity), .88 (depression), .82 (anxiety), .80 (hostility), .79 (phobic anxiety), .75 (paranoid ideation), and .79 (psychoticism) respectively. The scores collected on admission were used to investigate the psychological well-being at intake, while the results calculated by subtracting the scores at discharge from the ones at intake were used for possible psychological improvement.

Demographics. The demographic characteristics of the respondents, including gender, age, education levels and occupation background were also collected in the secondary data.

6.4 RESULTS

To answer the proposed research questions and to test the hypotheses, relevant analyses procedures were conducted correspondingly. The results are presented as follows:

Correlations among IAD symptoms, ICI, online gaming, risk/problem behaviors and academic performance

To test the first four hypotheses, correlations were performed to examine possible relationships among IAD symptoms, ICI, online gaming, risk/problem behaviors and academic performance. Results in Table 6.3 showed that (1) IAD symptoms was significantly and positively correlated with (a) ICI and (b) online gaming, $r(608) = .20$, $p < .01$, and $r(607) = .35$, $p < .001$ respectively. (2) ICI was found to be significantly and positively correlated with (a) online gaming and (b) risk/problem behaviors, $r(595) = .20$, $p < .01$, and $r(604) = .15$, $p < .01$ respectively. (3) Online gaming was found to be significantly and positively correlated with risk/problem behaviors, $r(608) = .12$, $p < .05$.

Results also showed that (1) IAD symptoms was significantly and negatively correlated with academic performance, $r(597) = -.41$, $p < .001$. (2) ICI was found to

have a significant negative correlation with academic performance, $r(599) = -.60$, $p < .01$. (3) Online gaming was found to be significantly and negatively correlated with academic performance, $r(602) = -.13$, $p < .01$. However, no correlations were found between (1) IAD symptoms and risk/problem behaviors, and $r(594) = .07$, n.s.

Therefore, all hypotheses except H_{3c} were supported. Accordingly, the respondents with higher degree of Internet connectedness tended to show more IAD symptoms. As one of the most popular Internet activities, more online gaming led to higher degree of Internet connectedness and even Internet addiction, as well as more risk/problem behaviors. Similar to other risk/problem behaviors, and higher degree of Internet connectedness and more IAD symptoms also led to more academic performance decrement. However, those respondents with more risk/problem behaviors might not necessarily show more IAD symptoms. Thus, the relationship between the two might be more complicated that some respondents with risk/problem behaviors also showed excessive Internet use, but other respondents might substitute risk/problem behaviors for IAD symptoms as their personal coping strategies. Summary of the correlation results among IAD symptoms, ICI, online gaming, risk/problem behaviors, and academic performance is presented in Table 6.3.

Table 6.3 Zero-order Pearson Correlations among IAD Symptoms, ICI, Online Gaming, Risk/problem Behaviors and Academic Performance

	2	3	4	5
1. IAD symptoms (composite)	.20**	.35***	-.04	-.41***
2. ICI		.20**	.15**	-.60**
3. Online gaming			.12*	-.17**
4. Risk/problem behaviors				-.13**
5. Academic performance				

Notes: *$p < .05$; **$p < .01$; ***$p<.001$; N =618

Differences in Internet connectedness, online gaming, IAD symptoms, risk/problem behaviors and psychological well-being between Internet café users and non-users

As shown in Table 6.4, T-tests were performed to examine possible difference in Internet use variables between Internet café users and non-users. Significant differences were found in ICI, online gaming, IAD symptoms, and risk/problem behaviors. The means for Internet café users and non-users in ICI were $M = 7.74$ ($SD = 1.08$) and $M = 6.87$ ($SD = 1.11$) respectively, $t(602) = 6.15$, $p < .001$. The means for Internet café users and non-users in online game usage were $M = 14.72$ ($SD = 2.32$) and $M = 13.72$ ($SD = 2.72$) respectively, $t(598) = 3.34$, $p < .01$. The means for Internet café users and non-users in IAD symptoms were $M = 5.88$ ($SD = 1.27$) and $M = 5.23$ ($SD = 1.55$) respectively, $t(596) = 4.26$, $p < .001$. The means for Internet café users and non-users in risk/problem behaviors were $M = 1.75$ ($SD = 1.55$) and $M = 1.06$ ($SD = 1.23$) respectively, $t(604) = 5.26$, $p < .001$. On the other hand, t-tests showed no significant difference in psychological well-being between Internet café

users and non-users, $t(594) = -.14$, n.s. Therefore, the fifth hypothesis was mainly supported. Internet café patronage led to higher degree of Internet connectedness, more online gaming, more IAD symptoms, and more risk/problem behaviors. The descriptive data for Internet café users and non-users are presented in Table 6.4.

Table 6.4 Means and Standard Deviation of ICI, Online Gaming, IAD, Risk/problem Behaviors and GSI for Internet Café Patronage

Variable	Internet café patronage				*t*
	Yes		No		
	M	*SD*	*M*	*SD*	
a. *ICI*	7.74	1.08	6.87	1.11	**6.15*** **
b. *Online gaming*	14.72	2.32	13.72	2.72	**3.34** **
c. *IAD symptoms*	5.88	1.27	5.23	1.55	**4.26*** **
d. *Risk/problem behaviors*	1.75	1.55	1.06	1.23	**5.26*** **
e. *GSI*	141.75	45.88	141.13	44.14	-.14

Notes: ** $p < .01$; *** $p < .001$; N=618

Differences in Internet connectedness, IAD symptoms, risk/problem behaviors and psychological well-being between online game players and non-players

T-tests were performed to examine possible difference between online game players and non-players. Significant differences were found in ICI, IAD symptoms, risk/problem behaviors, and GSI. The means for online game players and non-players in ICI were $M = 11.40$ ($SD = 3.51$) and $M = 10.62$ ($SD = 3.60$) respectively, $t(606) = 2.01$, $p < .05$. The means for online game players and non-players in IAD symptoms were $M = 6.15$ ($SD = 1.07$) and $M = 4.56$ ($SD = 1.46$)

respectively, $t(605) = 10.44$, $p < .001$. The means for online game players and non-players in GSI were $M = 147.06$ ($SD = 51.89$) and $M = 138.54$ ($SD = 43.56$) respectively, $t(595) = 2.11$, $p < .05$. On the other hand, the results of T-tests showed no significant difference in risk/problem behaviors $t(599) = -.03$, n.s.

Thus, the seventh hypothesis was largely supported. More online gaming led to higher degree of Internet connectedness, more IAD symptoms and worse psychological well-being, although more online gaming might not lead to more risk behaviors due to time displacement, since those respondents who were busy with online gaming might not have time for other risk/problem behaviors. The descriptive data for online game players and non-players are presented in Table 6.5.

Table 6.5 Means and Standard Deviation of ICI, IAD Symptoms, Risk/problem Behaviors, GSI and Specific Symptom Dimensions for Online Game Players and Non-players

Variable	Online game players		Non-players		*t*
	M	*SD*	*M*	*SD*	
a. *ICI*	11.40	3.51	10.62	3.60	**2.01***
b. *IAD symptoms*	6.15	1.07	4.56	1.46	**10.44*****
c. *Risk/problem behaviors*	1.55	1.53	1.55	1.50	-.03
d. *GSI*	147.06	51.89	138.54	43.56	**2.11***

Notes: *$p < .05$; ***$p<.001$; N =618

Demographic differences in Internet use variables

To answer the first research question, T-tests were performed to examine possible gender difference in Internet use variables (see Table 6.6). Significant gender

differences were found in ICI and online gaming. The means for males and females in ICI were $M = 8.25$ ($SD = 3.27$) and $M = 6.99$ ($SD = 3.45$) respectively, $t(591) = 2.24$, $p < .05$. The means for males and females in online gaming were $M = 13.65$ ($SD = 9.56$) and $M = 6.21$ ($SD = 9.38$) respectively, $t(616) = 4.81$, $p < .001$. Therefore, in consistent with the reviewed literature, males showed higher degree of Internet connectedness and online game usage than females.

In addition, T-tests were performed to examine possible difference in Internet use variables between the adolescent and young adult respondents (see Table 6.7). Significant differences were found in ICI and online gaming. The means for the adolescent and young adult respondents in ICI were $M = 7.38$ ($SD = 1.17$) and $M = 7.68$ ($SD = 1.08$) respectively, $t(595) = 2.14$, $p < .05$. The means for the adolescent and young adult respondents in online gaming were $M = 6.37$ ($SD = 3.31$) and $M = 7.08$ ($SD = 3.54$) respectively, $t(608) = 2.46$, $p < .05$. Hence, young adults showed higher degree of Internet connectedness and online game usage than adolescents, which partly because habitual Internet use or online gaming with a longer history might cause compulsive use.

The results for the female and male respondents are presented in Table 6.6, while the descriptive data for the adolescent and young adult respondents are presented in Table 6.7.

Table 6.6 Means and Standard Deviation of Internet Use Variables for Male and Female Respondents

Variable	Male (n = 565)		Female (n = 53)		*t*
	M	*SD*	*M*	*SD*	
ICI	8.25	3.27	6.99	3.45	2.24*
Online gaming	13.65	9.56	6.21	9.38	4.81***

Notes: *$p < .05$; ***$p<.001$; N =618

Table 6.7 Means and Standard Deviation of Internet Use Variables for Adolescent and Young Adult Respondents

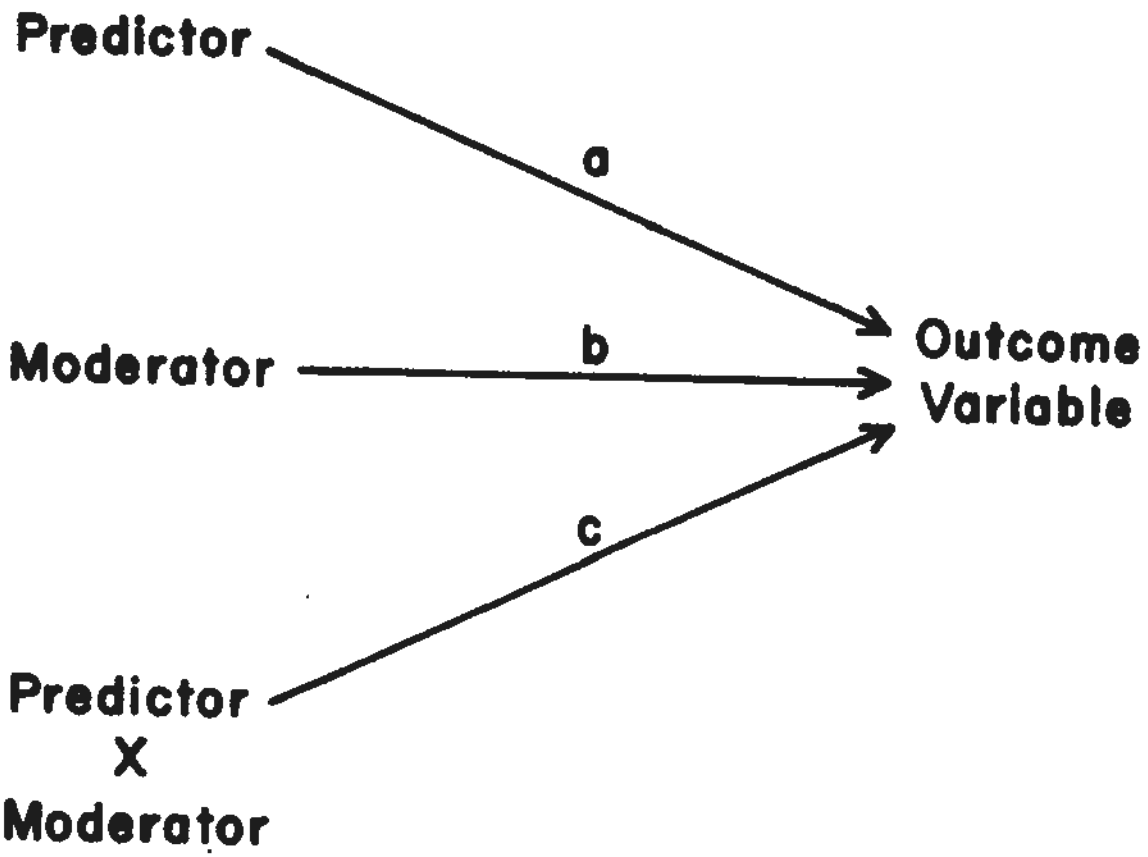
Variable	Adolescents (13-17) (n = 324)		Young adults (18-29) (n = 294)		*t*
	M	*SD*	*M*	*SD*	
ICI	7.38	1.17	7.68	1.08	2.14*
Online gaming	6.37	3.31	7.08	3.54	2.46*

Notes: *$p < .05$; N =618

Testing of moderator function of online game playing between ICI and IAD symptoms

To test the moderator function (see Figure 6.1) of online game playing between ICI and IAD symptoms proposed in the second research question, analysis of variance (ANOVA) was conducted based on the procedures outlined in previous literature (Baron & Kenny, 1986).

Figure 6.1 Moderator model



Source: (Baron & Kenny, 1986).

ICI ranging from 1 to 12 was dummy-coded into high and low groups with the median 7 as the cutoff point, and 2 X 2 factorial design was adopted. The results in Table 6.8 show the main effects from ICI, $F(1, 617) = 4.01$, $p < .05$, and from online game playing, $F(1, 617) = 15.43$, $p < .001$, as well as the interaction effect of the two variables. A pattern emerged such that association between ICI and IAD symptoms was moderated by online game playing. The results show that the online game player group reported more IAD symptoms than the non-player group. Within the non-player group, higher degree of ICI led to more IAD symptoms. However, the influence of online gaming is so strong that ICI did not have much effect within the

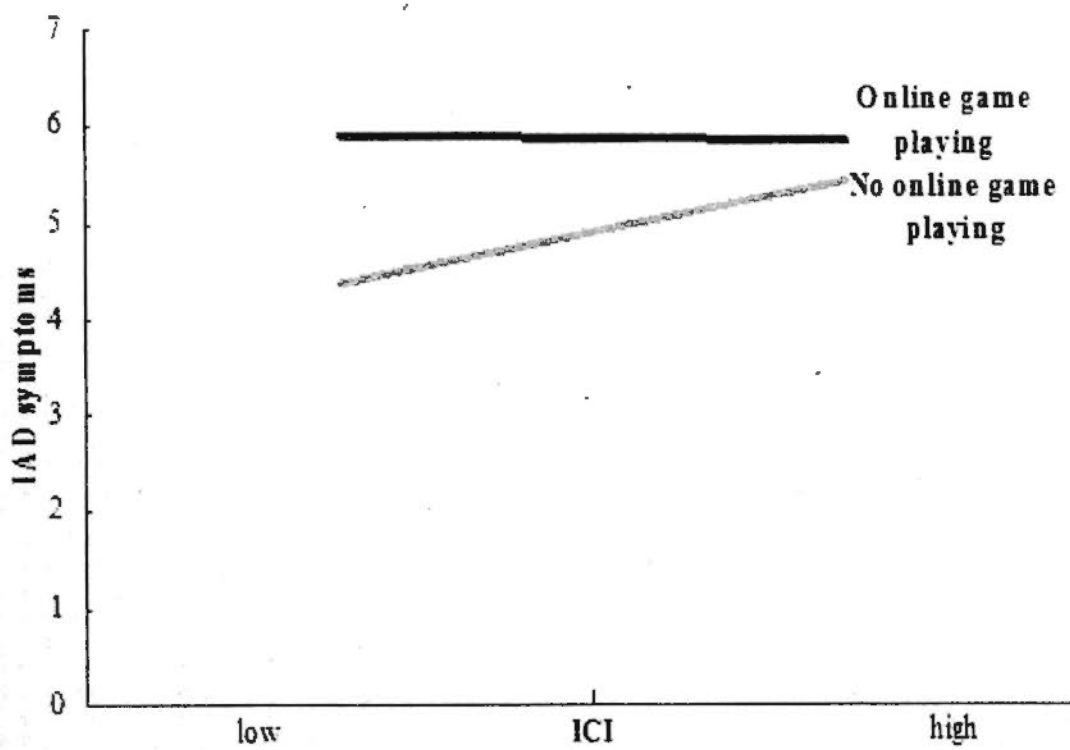
online game player group. Plots of these interactions are presented in Figure 6.2.

Table 6.8 Means and ANOVA for the Effects of ICI and online game playing on IAD symptoms

	Online game playing			No online game playing		
	N	*M*	*SD*	*N*	*M*	*SD*
Low ICI	213	5.91	1.05	142	4.38	1.35
High ICI	54	5.85	1.06	20	5.43	.53

Source of Variance	Sum-of-Squares	df	Mean Square	F	*p*
IAD symptoms					
ICI	4.967	1	4.967	4.013	.046
Online game playing	19.095	1	19.095	15.425	.000
ICI x Online game playing	6.163	1	6.163	4.963	.027

Figure 6.2 Moderation effect of online gaming between ICI and IAD symptoms



Testing of moderator function of online game playing between parental marital relationship and child's IAD symptoms

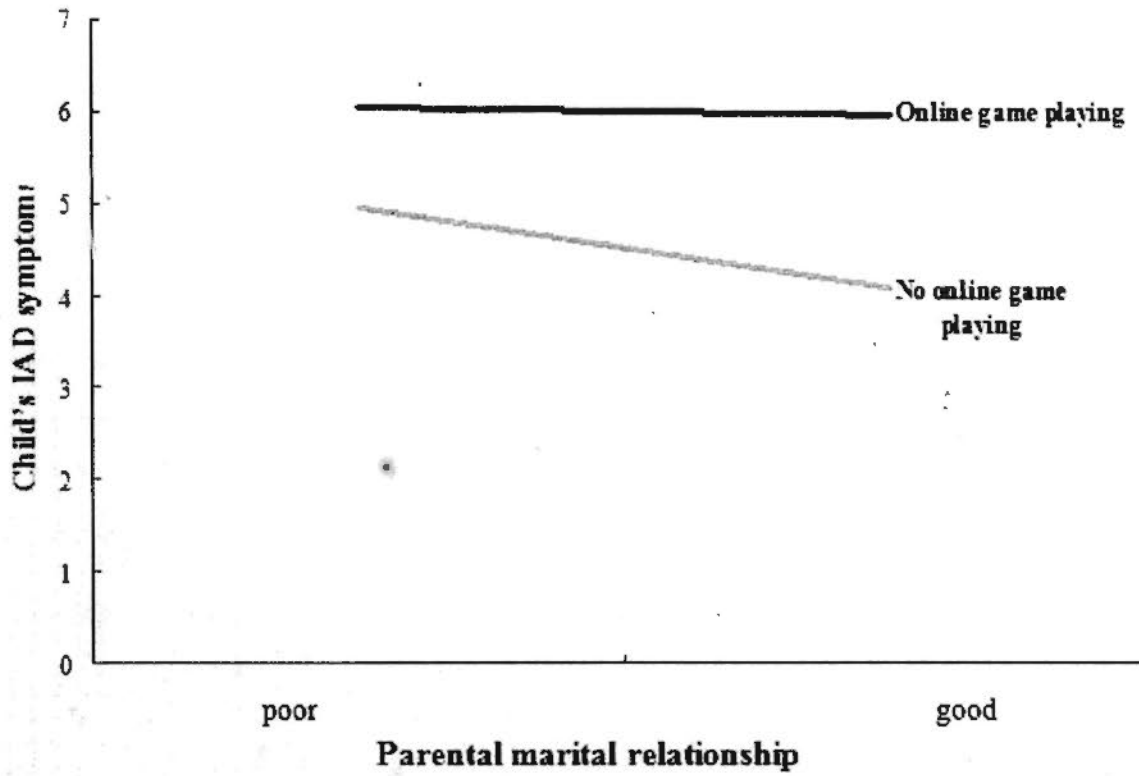
To test the moderator function of online game playing between parental marital relationship and child's IAD symptoms in the third research question, analysis of variance (ANOVA) was run. Parental marital relationship ranging from 0 to 10 was dummy-coded into poor and good parental marital relationship with the median 5 as the cutoff point, and 2X2 factorial design was adopted. The results in Table 6.9 show the main effects of parental marital relationship, $F(1, 617) = 7.62$, $p < .01$, and online game playing, $F(1, 617) = 69.84$, $p < .001$, as well as the interaction effect of the two variables. A pattern emerged such that association between parental marital relationship and child's IAD symptoms was moderated by child's online game playing. The results show that the respondents reported more IAD symptoms tended to be online game players and from the family environment with poorer parental marital relationship. In addition, parental marital relationship had stronger effect within non-player group than online game player group. Plots of these interactions are presented in Figure 6.3.

Table 6.9 Means and ANOVA for the Effects of parental marital relationship and online game playing on IAD symptoms

	Online game playing			No online game playing		
	N	*M*	*SD*	*N*	*M*	*SD*
Bad parental marital relationship	154	6.03	1.02	94	4.96	.98
Good parental marital relationship	170	5.95	1.10	122	4.07	1.36

Source of Variance	Sum-of-Squares	df	Mean Square	*F*	*p*
IAD symptoms					
Parental marital relationship	9.192	1	9.192	7.615	.006
Online game playing	84.304	1	84.304	69.843	.000
Parental marital relationship x Online game playing	6.319	1	6.319	5.235	.023

Figure 6.3 Moderation effect of online game playing between parental marital relationship and child's IAD symptoms



Predicting IAD symptoms

To examine the relative influence of demographics, personality, parental marital relationship, parenting style, interpersonal relationship, Internet connectedness and online gaming on IAD symptoms as proposed in RQ_{4a}, a hierarchical regression was run. The results in Table 6.10 indicate that the respondents who reported more IAD symptoms tended to be those who could not maintain normal social status at an average age of being an adolescent (β = -.17, p < .01). This means that those respondents who were school dropouts, suspended students, or unemployed had more IAD symptoms. As the first block of predictors, demographics explained 2% of the variance. Personality is the second block, and the results show that the respondents scoring high in IAD symptoms tended to be those who were with psychoticism personality (β = .14, p < .01). This block explained 1% of the variance. Parental marital relationship and parenting style were the third and fourth blocks in the analysis. The results show that parental marital relationship (β = -.08, p < .05), paternal warmth and understanding (β = -.10, p < .05) and over-intervention (β = .10, p < .05) were significant predictors. These two blocks together show that family environment explaining 6% of the variance, with each block explaining 3% of the variance. Interpersonal relationship is the fifth block, but no significant predictors were found in this block. When variables from Internet connectedness entered into the equation in the sixth block, site scope (β = .13, p < .01), goal scope (β = .17, p < .001) and Internet adhesiveness (β = .10, p < .01) were found to be significant predictors. This indicates that the Internet café users who use Internet with more

goals and higher degree of Internet adhesiveness had more IAD symptoms. The IC block explained 5% of the variance. Finally, online gaming is the seventh block, and the results show that online game playing ($\beta = .36$, $p < .001$) was the strongest predictor for IAD symptoms. As the last block of predictors, online gaming explained most of the variance at 11 percent. The hierarchical regression explained 25% of the variance in total.

Table 6.10 Hierarchical regression analysis of the impact of demographics, personality, parental marital relationship, parenting styles, interpersonal relationship, Internet connectedness, and online gaming on IAD symptoms

Predictors	IAD symptoms, β	Δ R^2
Block 1: Demographics		
Gender (male=1)	-.02	
Age	.03	
Education level	-.05	
Social status[a] (normal=1)	**-.17****	.02
Block 2: Personality		
Neuroticism–Stability	-.02	
Socialization–Psychoticism	**.14****	
Extroversion–Introversion	.02	.01
Block 3: Parental marital relationship	**-.08***	.03
Block 4: Parenting style		
Father		
Warmth & understanding	**-.10***	
Punishment	-.01	
Refusal & rejection	.00	
Overprotection	.00	
Favoring the child	.00	
Over-intervention	**.10***	
Mother		
Warmth & understanding	-.05	
Punishment	-.05	
Refusal & rejection	-.04	
Overprotection	.11	
Favoring the child	-.04	.03
Block 5: Interpersonal relationship		
With peers	.04	
With teachers	-.05	.00
Block 6: Internet connectedness		
History scope	05	
Task scope	.08	
Site scope(Internet café=1)	**.13****	
Goal scope	**.17*****	
Activity scope	-.05	
Intensity scope	.02	
Evaluation	.04	
Internet adhesiveness	**.10****	
Computer interest	.01	.05
Block 7: Online gaming		
Online game playing (yes=1)	**.36*****	
Time began gaming	.03	
Number of friends online	.00	.11
R Square		**.26**
Adjusted R Square		**.25**

Notes: a. normal (at school or at work)=1, not normal (school dropout, suspending, and unemployed)=0;

b. *$p < .05$; **$p < .01$; ***$p < .001$; N =618

Predicting risk/problem behaviors

To examine the relative influence of demographics, personality, parental marital relationship, parenting style, interpersonal relationship, Internet connectedness and online gaming on risk/problem behaviors as proposed in RQ_{4b}, a hierarchical regression was conducted. The results indicate that the respondents who reported more risk/problem behaviors tended to be those with lower educational level (β = -.16, $p < .05$). As the first block of predictors, demographics explained 3% of the variance. As the second block, personality explained 4% of the variance, with extroversion– introversion (β = -.18, $p < .001$) found to be a significant predictor. Parental marital relationship is the third block, and the results show that the respondents with more risk/problem behaviors tended to be those respondents who lived in a family with poorer parental marital relationship (β = -.12, $p < .05$). This block explained 1% of the variance. Parenting style is the fourth block in the analysis. The results show that paternal warmth and understanding (β = -.18, $p < .01$), punishment (β = -.22, $p < .01$) and over-intervention (β = .28, $p < .001$) were significant predictors, explaining 4% of the variance. In total, the two family environment blocks explain 5% of the variance. Interpersonal relationship is the fifth block, and the results show that the respondents with more risk/problem behaviors tended to have poorer interpersonal relationship with teachers (β = -.12, $p < .05$). This block explained 1% of the variance. When variables from Internet connectedness entered into the equation in the sixth block, history scope (β = .11, $p < .01$), site scope (β = .17, $p < .001$), activity scope (β = .11, $p < .05$) and intensity

scope (β = -.15, p < .05) were found to be significant predictors. This indicates that the respondents who had a longer history of Internet use, went to Internet café, and had more online activities and higher degree of intensity of Internet use had more risk/problem behaviors. The IC block explained 5% of the variance. Finally, online gaming is the seventh block, and the results show that number of friends online (β = .17, p < .001) was a significnat predictor. As the last block of predictors, online gaming explained 2% of the variance. The hierarchical regression explained 20% of the variance in total, and the results are also presented in Table 6.11.

Table 6.11 Hierarchical regression analysis of the impact of demographics, personality, parental marital relationship, parenting styles, interpersonal relationship, Internet connectedness, and online gaming on risk/problem behaviors

Predictors	Risk/problem behaviors, β	Δ R^2
Block 1: Demographics		
Gender (male=1)	.04	
Age	-.02	
Education level	**-.16***	
Social status[a] (normal=1)	.06	.03
Block 2: Personality		
Neuroticism–Stability	-.04	
Socialization–Psychoticism	-.02	
Extroversion–Introversion	**-.18*****	.04
Block 3: Parental marital relationship	**-.12***	.01
Block 4: Parenting style		
Father		
Warmth & understanding	**-.18****	
Punishment	**-.22****	
Refusal & rejection	.02	
Overprotection	.02	
Favoring the child	.11	
Over-intervention	**.28*****	
Mother		
Warmth & understanding	-.05	
Punishment	-.10	
Refusal & rejection	.00	
Overprotection	.05	
Favoring the child	-.12	.04
Block 5: Interpersonal relationship		
With peers	.10	
With teachers	**-.12***	.01
Block 6: Internet connectedness		
History scope	**.11****	
Task scope	-.05	
Site scope(Internet café=1)	**.17*****	
Goal scope	-.02	
Activity scope	**.11***	
Intensity scope	**-.15***	
Evaluation	.05	
Internet adhesiveness	.05	
Computer interest	-.01	.05
Block 7: Online gaming		
Online game playing (yes=1)	-.01	
Time began gaming	-.01	
Number of friends online	**.17*****	.02
R Square		**.21**
Adjusted R Square		**.20**

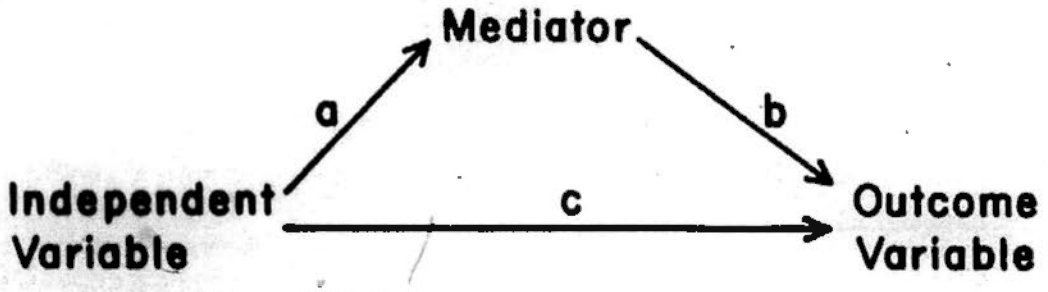
Notes: a. normal (at school or at work)=1, not normal (school dropout, suspending, and unemployed)=0;

b. *$p < .05$; **$p < .01$; ***$p < .001$; N =618

Testing of mediating effect of IAD symptoms between online gaming and academic-related problems

To test the mediating effect (see Figure 6.4) of IAD symptoms between online gaming and academic-related problems proposed in the fifth research question, a series of regression analyses were conducted based on the procedures outlined by Baron and Kenny (1986). As shown in Table 6.12, in the first equation, online gaming as the independent variable significantly affected the presumed mediator (i.e., path *a* in Figure 6.4). Moreover, variations in IAD symptoms as the mediator significantly accounted for variations in academic-related problems as the dependent variable (i.e., path *b* in Figure 6.4) in the second equation. Furthermore, the independent variable significantly affected the dependent variable in the third equation. However, the previously significant relation between online gaming (the independent variable) and academic-related problems (the dependent variable) was no longer significant when the mediator (IAD symptoms) was entered, which indicated strong evidence for mediating effect (Baron & Kenny, 1986). Sobel test revealed that $Z = 5.62, p < .001$.

Figure 6.4 Mediator model



Source: (Baron & Kenny, 1986).

Therefore, all the conditions for meditational model were met. IAD was the

mediator between online gaming and academic-related problems, so online gaming might not necessarily lead to academic-related problems, but those who played online games to certain degree of showing IAD symptoms would have a lot of academic-related problems. Accordingly, the results are presented in Table 6.12.

Table 6.12 Hierarchical regression equations predicting academic-related problems

Eq	Step	Variables entered	*B*	*SE*	*β*	*t*	ΔR^2	*Total* R^2
Regressing the mediator on the independent variable:								
a.	1	Online gaming	.19	.03	.35	**7.20*** **	.12	.12
Regressing the dependent variable on the mediator:								
b.	1	IAD	.25	.03	.40	**9.00*** **	.16	.16
Regressing the dependent variable on the independent variable:								
c.	1	Online gaming	.06	.02	.17	**3.46****	.03	.03
Regressing the dependent variable on both the independent variable and on the mediator:								
d_1.	1	Online gaming	.06	.02	.17	**3.46****	.03	.03
	2	Online gaming	.02	.02	.06	1.12	.14	.17
		IAD	.25	.03	.39	**7.62*** **		
d_2.	1	IAD	.25	.03	.40	**9.00*** **	.16	.16
	2	IAD	.25	.03	.39	**7.62*** **	.01	.17
		Online gaming	.02	.02	.06	1.12		

Notes: **p < .01; ***p<.001; N =618

Psychological well-being of the respondents and differences between the SCL-90-R profiles on admission and on discharge

SCL-90-R profiles of the respondents on admission revealed a comparatively higher score, indicating a great degree of overall psychological distress. As for the SCL-90-R profiles on discharge, a significant drop in the means for GSI scores was reported.

To answer the sixth research question, Paired-Samples T-tests were performed to examine possible difference in the respondents' overall psychological distress and nine specific domains. Significant differences were found in GSI and all nine specific domains. The means for GSI scores on admission and discharge were $M = 142.01$ ($SD = 47.26$) and $M = 115.91$ ($SD = 29.60$) respectively, $t(617) = 9.46$, $p < .001$. The means for somatization scores on admission and discharge were $M = 1.42$ ($SD = .52$) and $M = 1.23$ ($SD = .36$) respectively, $t(617) = 7.23$, $p < .001$. The means for obsessive-compulsive scores on admission and discharge were $M = 1.65$ ($SD = .59$) and $M = 1.42$ ($SD = .45$) respectively, $t(617) = 7.68$, $p < .001$. The means for interpersonal sensitivity scores on admission and discharge were $M = 1.63$ ($SD = .62$) and $M = 1.37$ ($SD = .44$) respectively, $t(617) = 8.81$, $p < .001$. The means for depression scores on admission and discharge were $M = 1.60$ ($SD = .61$) and $M = 1.27$ ($SD = .38$) respectively, $t(617) = 10.27$, $p < .001$. The means for anxiety scores on admission and discharge were $M = 1.46$ ($SD = .55$) and $M = 1.24$ ($SD = .35$) respectively, $t(617) = 7.80$, $p < .001$. The means for hostility scores on admission and discharge were $M = 1.55$ ($SD = .65$) and $M = 1.33$ ($SD = .45$) respectively, $t(617) = 6.51$, $p < .001$. The means for phobic anxiety scores on admission and discharge were $M = 1.30$ ($SD = .50$) and $M = 1.12$ ($SD = .28$) respectively, $t(617) = 7.61$, $p < .001$. The means for paranoid ideation scores on admission and discharge were $M = 1.54$ ($SD = .56$) and $M = 1.30$ ($SD = .39$) respectively, $t(617) = 8.14$, $p < .001$. The means for psychoticism scores on admission and discharge were $M = 1.44$ ($SD = .49$) and $M = 1.25$ ($SD = .34$) respectively, $t(617) = 7.81$, $p < .001$. This indicates that

there was significant recovery in terms of psychological well-being after the in-patient treatments.

The descriptive data for the SCL-90-R profiles on admission and discharge are presented in Table 6.13.

Table 6.13 Means and Standard Deviation of GSI and specific mental symptoms for respondents on admission and discharge

Variable	In		Out		*t*
	M	*SD*	*M*	*SD*	
GSI	142.01	47.26	115.91	29.60	**9.46*** **
1. Somatization	1.42	.52	1.23	.36	**7.23*** **
2. Obsessive-Compulsive	1.65	.59	1.42	.45	**7.68*** **
3. Interpersonal Sensitivity	1.63	.62	1.37	.44	**8.81*** **
4. Depression	1.60	.61	1.27	.38	**10.27*** **
5. Anxiety	1.46	.55	1.24	.35	**7.80*** **
6. Hostility	1.55	.65	1.33	.45	**6.51*** **
7. Phobic Anxiety	1.30	.50	1.12	.28	**7.61*** **
8. Paranoid Ideation	1.54	.56	1.30	.39	**8.14*** **
9. Psychoticism	1.44	.49	1.25	.34	**7.81*** **

Notes: ***p<.001; N =618

Predicting academic performance

To examine the relative influence of demographics, personality, parental marital relationship, parenting style, interpersonal relationship, Internet connectedness, online gaming, IAD symptoms, and risk/problem behaviors on academic performance as proposed in RQ_7, two parallel hierarchical regression analyses were run.

As for academic assessment, the results in Table 6.14 indicate that the respondents who reported better academic assessment tended to be those who were in upper grades ($\beta = .17, p < .05$). As the first block of predictors, demographics explained 4%

of the variance. Personality and parental marital relationship are the second and third blocks in the analysis, but no significant predictors were found in these two blocks. Parenting style is the fourth block, and paternal punishment (β = .23, p < .05), paternal overprotection (β = .20, p < .05) and paternal refusal and rejection (β = -.22, p < .05), and maternal warmth and understanding (β = .13, p < .05) were significant predictors, explaining 2% of the variance. Interpersonal relationship is the fifth block, and the results show that the respondents with better academic assessment tended to have better interpersonal relationship with teachers (β = .21, p < .01). This block explained 3% of the variance. When variables from Internet connectedness entered into the equation in the sixth block, history scope (β = -.11, p < .05) and Internet adhesiveness (β = -.09, p < .05) were found to be significant predictors. This means that the respondents with longer Internet use history and higher degree of Internet adhesiveness had poorer academic assessment. The IC block explained 3% of the variance. Online gaming and IAD symptoms are the seventh and eighth blocks, but no significant predictors were found in these two blocks. Finally, risk/problem behaviors (β = -.19, p < .01) entered into the equation in the ninth block, explaining 4% of the variance. This indicates that the respondents who had less risk/problem behaviors had better academic assessment. The hierarchical regression explained 16% of the variance in total.

Referring to academic-related problems, the results in Table 6.14 indicate that the respondents who reported more academic-related problems tended to be those who are younger (β = -.22, p < .001), in upper grades (β = .14, p < .05) and without

normal social status (β = -.19, p < .001). As the first block of predictors, demographics explained 6% of the variance. Personality and parental marital relationship were second and third blocks in the analysis, but no significant predictors were found in these two blocks. Parenting style is the fourth block, and paternal warmth and understanding (β = -.09, p < .05) was found to be a significant predictor, explaining 1% of the variance. Interpersonal relationship is the fifth block, but no significant predictors were found. Variables from Internet connectedness entered into the equation in the sixth block, and intensity scope (β = .17, p < .001) was found to be a significant predictor, explaining 4% of the variance. This indicates that the respondents with higher degree of intensity of Internet use had more academic-related problems. Online gaming is the seventh block, and the results show that online game playing (β = .11, p < .05) and online game use history (β = .14, p < .001) were significant predictors, explaining 2% of the variance. IAD symptoms was the strongest predictor (β = .31, p < .001) and entered into the equation in the eighth block, explaining 8% of the variance. Finally, risk/problem behaviors entered as the ninth block and explained 1% of the variance. The hierarchical regression explained 22% of the variance in total.

Table 6.14 Hierarchical regression analysis of the impact of demographics, personality, parental marital relationship, parenting styles, interpersonal relationship, Internet connectedness, online gaming, IAD symptoms, and risk/problem behaviors on academic performance

Predictors	Academic performance			
	Academic assessment, β	ΔR^2	Academic-related problems, β	ΔR^2
Block 1: Demographics				
Gender (male=1)	-.05		-.01	
Age	.08		**-.22*** **	
Education level	**.17***		**.14***	
Social status[a] (normal=1)	-.02	.04	**-.19*** **	.06
Block 2: Personality				
Neuroticism–Stability	.03		.01	
Socialization–Psychoticism	.00		.06	
Extroversion–Introversion	.07	.00	.02	.00
Block 3: Parental marital relationship	.07	.00	-.01	.00
Block 4: Parenting style				
Father				
Warmth & understanding	-.04		**-.09***	
Punishment	**.23***		-.07	
Refusal & rejection	**-.22***		.01	
Overprotection	**.20***		-.01	
Favoring the child	.07		-.09	
Over-intervention	-.17		-.04	
Mother				
Warmth & understanding	**.13***		-.02	
Punishment	.06		-.07	
Refusal & rejection	.04		.08	
Overprotection	-.10		-.01	
Favoring the child	-.06	.02	.02	01
Block 5: Interpersonal relationship				
With peers	.03		.04	
With teachers	**.21** **	.03	-.06	.00
Block 6: Internet connectedness				
History scope	**-.11***		.03	
Task scope	.09		.01	
Site scope(Internet café=1)	.01		-.06	
Goal scope	-.09		.01	
Activity scope	-.06		-.08	
Intensity scope	-.03		**.17*** **	
Evaluation	.09		-.02	
Internet adhesiveness	**-.09***		-.02	
Computer interest	-.08	.03	-.03	.04
Block 7: Online gaming				
Online game playing (yes=1)	-.07		**.11***	
Time began gaming	-.04		**.14*** **	
Number of friends online	.01	.00	.01	.02
Block 8: IAD symptoms	.07	.00	**.31*** **	.08
Block 9: Risk/problem behaviors	**-.19** **	.04	**.11***	.01
R Square		**.17**		**.23**
Adjusted R Square		**.16**		**.22**

Notes: a.normal (at school or at work)=1, not normal (school dropout, suspending, and unemployed)=0;

b. $*p < .05$; $**p < .01$; $***p < .001$; N =618

Predicting psychological well-being

Multiple regression analyses were conducted to assess how family communication environment, personal variables, interpersonal relationship, Internet use variables, IAD symptoms and risk/problem behaviors can predict the overall psychological well-being and nine specific symptoms as proposed in RQ_8.

As for the overall psychological well-being, results showed that neuroticism-stability personality was the strongest significant predictor ($\beta = -.53$, $p < .001$). This means that the higher degree of neuroticism the respondents showed, the lower degree of overall psychological well-being they had. Within parenting style, father's overprotection ($\beta = .18$, $p < .05$) and father's refusal and rejection ($\beta = .07$, $p < .05$) significantly predicted the overall psychological well-being. This indicates that the respondents with father taking overprotection, refusal and rejection as parenting style, had lower degree of overall psychological well-being. Furthermore, among Internet connectedness scopes, task scope ($\beta = -.08$, $p < .05$) was a significant predictor. This means the lower degree of breadth of tasks the respondents had when using Internet, the lower degree of overall psychological well-being they had. Among the demographic characteristics, education level ($\beta = -.12$, $p < .05$) significantly predicted the overall psychological well-being. The respondents with lower level of education had lower degree of overall psychological well-being. A total of 33% of variance were accounted for in the regression equation.

Referring to somatization, results showed that neuroticism-stability personality was the strongest significant predictor ($\beta = -.41$, $p < .001$). This means that the higher

degree of neuroticism the respondents showed, the higher degree of somatization they had. Within parenting style, father's overprotection (β = .11, p < .05) and father's refusal and rejection (β = .07, p < .05) significantly predicted the degree of somatization. This indicates that the respondents with father taking overprotection, refusal and rejection as parenting style, had higher degree of somatization. Furthermore, IAD symptoms (β = .09, p < .05) was a significant predictor for degree of somatization. This indicates that the respondents with more IAD symptoms showed higher degree of somatization. Among the demographic characteristics, education level (β = -.14, p < .01) significantly predicted the degree of somatization. The respondents with lower level of education had higher degree of somatization. A total of 24% of variance were accounted for the regression equation.

In terms of obsessive-compulsive symptom, neuroticism-stability personality was the strongest significant predictor (β = -.51, p < .001). This means that the higher degree of neuroticism the respondents showed, the higher degree of obsessive-compulsive symptom they had. Within parenting style, father's overprotection (β = .17, p < .05) significantly predicted the degree of obsessive-compulsive symptom. This indicates that the respondents with father taking the parenting style of overprotection, had higher degree of obsessive-compulsive symptom. Among Internet connectedness scopes, Internet use history (β = .07, p < .05), intensity scope (β = .08, p < .05), Internet adhesiveness (β = .10, p < .05), and computer interest (β = .10, p < .05) significantly predicted the degree of obsessive-compulsive symptom. This means that the respondents who had

longer Internet use history, higher degree of intensity of Internet use, higher degree of Internet adhesiveness, and higher degree of computer interest, had higher degree of obsessive-compulsive symptom. Among the online gaming variables, online game use history ($\beta = .10, p < .01$) was a significant predictor. This means that the earlier the time the respondents began playing online game, the higher degree of obsessive-compulsive symptom they had. Furthermore, risk/problem behaviors ($\beta = .11, p < .05$) significantly predicted the degree of obsessive-compulsive symptom, which means the respondents with more risk/problem behaviors had higher degree of obsessive-compulsive symptom. A total of 31% of variance were accounted for the regression equation.

As for the symptom dimension of interpersonal sensitivity, the results showed that neuroticism-stability ($\beta = -.45, p < .001$), socialization-psychoticism ($\beta = .12, p < .01$) and introversion-extroversion ($\beta = -.16, p < .001$) were significant predictors. This means that the higher degree of neuroticism, psychoticism or introversion the respondents showed, the higher degree of interpersonal sensitivity they had. Within parenting style, father's overprotection ($\beta = .11, p < .05$), and refusal and rejection ($\beta = .10, p < .05$), and mother's punishment ($\beta = .14, p < .05$) significantly predicted the degree of interpersonal sensitivity. This indicates that the respondents with father taking the parenting style of overprotection, refusal and rejection, and mother using punishment as parenting style, had higher degree of interpersonal sensitivity. Among Internet connectedness scopes, task scope ($\beta = -.12, p < .01$) significantly predicted the degree of interpersonal sensitivity. This means that the respondents who had

lower degree of breadth of tasks had higher degree of interpersonal sensitivity. Furthermore, among those online gaming variables, online game use history ($\beta = .10$, $p < .05$) was a significant predictor. This means that the earlier the respondents began playing online game, the higher degree of interpersonal sensitivity they showed. A total of 33% of variance were accounted for the regression equation.

Referring to degree of depression, the results showed that those personality traits, such as neuroticism-stability ($\beta = -.52$, $p < .001$), and socialization-psychoticism ($\beta = .08$, $p < .05$) were significant predictors. This means that the higher degree of neuroticism, or psychoticism the respondents showed, the higher degree of depression they had. Within parenting style, father's favoring ($\beta = -.25$, $p < .01$), and mother's favoring ($\beta = -.21$, $p < .01$) significantly predicted the degree of depression. This indicates that the respondents with parents taking favoring as parenting style, had lower degree of depression. Furthermore, among Internet connectedness scopes, task scope ($\beta = -.11$, $p < .05$) and Internet adhesiveness ($\beta = .09$, $p < .05$) significantly predicted the degree of depression. This means that the respondents who had lower degree of breadth of tasks and higher degree of Internet adhesiveness had higher degree of depression. A total of 30% of variance were accounted for the regression equation.

In terms of anxiety, neuroticism-stability personality was the strongest significant predictor ($\beta = -.51$, $p < .001$). This means that the higher degree of neuroticism the respondents showed, the higher degree of anxiety they had. Within parenting style, father's overprotection ($\beta = .20$, $p < .05$) and mother's punishment ($\beta = .18$, $p < .05$)

significantly predicted the degree of anxiety. This indicates that the respondents with father taking the parenting style of overprotection, and mother using punishment as parenting style had higher degree of anxiety. Furthermore, interpersonal relationship with peers (β = -.12, p < .05) and teachers (β = .13, p < .05) were significant predictors. This means that the respondents who had poorer interpersonal relationship with peers and better relationship with teachers had higher degree of anxiety. Among Internet connectedness scopes, goal scope (β = .10, p < .05) significantly predicted the degree of anxiety. This means that the respondents who had more goal of Internet use, had higher degree of anxiety. Among the demographic characteristics, gender (β = -.07, p < .05) significantly predicted the degree of anxiety. Female respondents had a higher degree of anxiety. A total of 32% of variance were accounted for the regression equation.

For hostility, neuroticism-stability (β = -.36, p < .001), and introversion-extroversion (β = .14, p < .05) were significant predictors. This means that the higher degree of neuroticism, or extroversion the respondents showed, the higher degree of hostility they had. Within parenting style, mother's punishment (β = .12, p < .01) significantly predicted the degree of hostility. This indicates that the respondents with mother taking punishment as parenting style, had higher degree of hostility. Furthermore, among those online gaming variables, number of friends online (β = .10, p < .05) significantly predicted the degree of hostility. This means that the respondents who had more friends online had higher degree of hostility. A total of 20% of variance were accounted for the regression equation.

As for phobic anxiety, the results showed that neuroticism-stability personality was the strongest significant predictor (β = -.42, p < .001). This means that the higher degree of neuroticism the respondents showed, the higher degree of phobic anxiety they had. Within parenting style, father's overprotection (β = .18, p < .05) significantly predicted the degree of phobic anxiety. This indicates that the respondents with father taking the parenting style of overprotection had higher degree of phobic anxiety. Furthermore, interpersonal relationship with peers (β = -.14, p < .05) and teachers (β = .16, p < .05) were significant predictors. This means that the respondents who had poorer interpersonal relationship with peers and better relationship with teachers had higher degree of phobic anxiety. Among Internet connectedness scopes, goal scope (β = .11, p < .05) and intensity scope (β = .09, p < .05) significantly predicted the degree of phobic anxiety. This means that the respondents who had more goal and higher degree of Internet use, had higher degree of phobic anxiety. Among the demographic characteristics, age (β = .18, p < .01) and education level (β = -.20, p < .01) significantly predicted the degree of phobic anxiety. Those older respondents with less education had a higher degree of phobic anxiety. A total of 25% of variance were accounted for the regression equation.

Referring to paranoid ideation, neuroticism-stability (β = -.42, p < .001), and socialization-psychoticism (β = .08, p < .05) were significant predictors. This means that the higher degree of neuroticism, or psychoticism the respondents showed, the higher degree of paranoid ideation they had. As for different parenting styles, father's punishment (β = -.21, p < .05), and refusal and rejection (β = .30, p < .001), and

mother's overprotection (β = .10, p < .05) significantly predicted the degree of paranoid ideation. This indicates that the respondents whose father discipline them less, and used refusal and rejection more often, had higher degree of paranoid ideation. Moreover, these respondents' mother tended to take overprotection as parenting style. As for interpersonal relationship, relationship with teachers (β = -.13, p < .05) was a significant predictor. This means the respondents who had poorer relationship with teachers had a higher degree of paranoid ideation. Furthermore, among Internet connectedness scopes, Internet adhesiveness (β = .10, p < .05) and computer interest (β = .13, p < .01) significantly predicted the degree of paranoid ideation. This means that the respondents who had higher degree of Internet adhesiveness and computer interest had higher degree of paranoid ideation. A total of 29% of variance were accounted for the regression equation.

In terms of psychoticism, the results showed that neuroticism-stability personality was the strongest significant predictor (β = -.44, p < .001). This means that the higher degree of neuroticism the respondents showed, the higher degree of psychoticism they had. Furthermore, within parenting style, father's overprotection (β = .25, p < .01) and over-intervention (β = .19, p < .01), and mother's punishment (β = .09, p < .05) significantly predicted the degree of psychoticism. This indicates that the respondents with father taking the parenting style of overprotection and over-intervention, and mother using punishment as parenting style had higher degree of psychoticism. Among the demographic characteristics, age (β = .16, p < .05) and education level (β = -.12, p < .05) significantly predicted the degree of psychoticism.

Those older respondents with less education had a higher degree of psychoticism. A total of 27% of variance were accounted for the regression equation, and the results are presented in Table 6.15.

Table 6.15 Regression analysis of the impact of demographics, personality, parental marital relationship, parenting styles, interpersonal relationship, Internet connectedness, online gaming, IAD symptoms, risk/problem behaviors on psychological well-being

Predictors	Psychological well-being[b]									
	GSI	Somatization	Obsessive -Compulsive	Interpersonal Sensitivity	Depression	Anxiety	Hostility	Phobic Anxiety	Paranoid Ideation	Psychoticism
	β	β	β	β	β	β	β	β	β	β
Demographics										
Gender (male=1)	-.05	-.03	-.05	-.04	-.05	**-.07***	-.07	.00	-.02	-.06
Age	.08	.06	.02	.06	.07	.09	.08	**.18****	.06	**.16***
Education level	**-.12***	**-.14****	-.04	-.05	-.02	-.08	-.08	**-.20****	-.08	**-.12***
Social status[a](normal=1)	-.05	-.06	-.03	-.02	-.05	-.07	-.01	-.09	-.04	-.05
Personality										
Neuroticism–Stability	**-.53*****	**-.41*****	**-.51*****	**-.45*****	**-.52*****	**-.51*****	**-.36*****	**-.42*****	**-.42*****	**-.44*****
Socialization–Psychoticism	-.07	-.03	-.05	**.12****	**.08***	.10	.09	-.01	**.08***	-.07
Extroversion–Introversion	.05	-.01	.07	**.16*****	.06	-.07	**-.14***	.04	.02	.06
Parental marital relationship	-.01	-.01	-.00	-.02	-.01	.02	-.00	-.01	-.00	.00
Parenting style										
Father										
Warmth & understanding	.00	.09	-.01	-.03	.01	-.00	-.07	-.04	-.08	.02
Punishment	-.05	-.01	-.02	-.12	-.02	-.10	-.04	-.11	**-.21***	-.02
Refusal & rejection	**.07***	**.08***	.05	**.10***	.01	.03	.06	.02	**.30*****	.05
Overprotection	**.18***	**.11***	**.17***	**.11***	.01	**.20***	.14	**.18***	.15	**.25****
Favoring the child	-.07	-.13	-.08	-.03	**-.25****	-.12	.01	-.10	-.01	-.02
Over-intervention	.01	-.01	-.01	.09	.02	-.11	-.07	-.05	-.07	**.19****
Mother										
Warmth & understanding	-.04	-.07	-.07	-.02	-.06	-.01	.01	-.05	-.00	-.02
Punishment	.06	.07	-.03	**.14***	.06	**.18***	**.12****	.14	.10	**.09***
Refusal & rejection	-.07	-.07	-.11	-.06	-.07	-.15	-.06	-.16	-.09	-.05
Overprotection	.05	.02	.11	.01	.03	.02	.03	.07	**.10***	.02
Favoring the child	.07	.15	.06	.05	**-.21****	.06	-.01	.07	.01	-.00

Table 6.15 continued

Predictors	Psychological well-being[b]									
	GSI	Somatization	Obsessive -Compulsive	Interpersonal / Sensitivity	Depression	Anxiety	Hostility	Phobic Anxiety	Paranoid Ideation	Psychoticism
	β	β	β	β	β	β	β	β	β	β
Interpersonal relationship										
With peers	-.03	-.00	-.05	-.04	.00	**-.12***	-.10	**-.14***	-.10	-.06
With teachers	-.02	-.00	.01	-.04	-.02	**.13***	-.07	**.16***	**-.13***	-.06
Internet connectedness										
History scope	.01	.00	**.07***	-.03	-.03	.03	-.02	.06	-.03	.02
Task scope	**-.08***	-.02	-.01	**-.12****	**-.11***	-.02	-.10	-.09	-.09	.01
Site scope(Internet café=1)	.00	.01	.02	-.01	.01	.00	.02	-.05	-.00	.00
Goal scope	.02	.01	.03	-.01	.02	**.10***	.03	**.11***	.05	-.00
Activity scope	.01	.06	.00	-.01	.04	-.07	.02	-.03	-.01	-.02
Intensity scope	-.07	-.07	**.08***	-.06	-.05	-.02	-.01	**.09***	-.01	-.04
Evaluation	.00	.00	-.01	-.03	.01	.04	.08	.03	.04	.00
Internet adhesiveness	.05	.01	**.10***	.06	**.09***	.03	.05	.04	**.10***	.04
Computer interest	.02	-.01	**.10***	.04	.02	.04	.02	-.01	**.13****	.02
Online gaming										
Online game playing (yes=1)	-.02	.04	-.04	.00	-.03	-.04	.01	.00	-.03	-.02
Time began gaming	.02	-.01	**.10****	**.10***	.00	.01	**-.01**	.01	.05	.01
Number of friends online	.04	.04	.02	.04	.03	-.03	**.10***	-.01	-.01	.02
IAD symptoms	-.02	**.09***	-.01	-.04	.00	.02	.02	-.04	.04	-.04
Risk/problem behaviors	-.02	.01	**.11***	-.02	-.01	-.04	-.01	-.04	-.01	-.02
R Square	**.33**	**.24**	**.31**	**.33**	**.30**	**.32**	**.20**	**.25**	**.29**	**.27**
Adjusted R Square	**.30**	**.19**	**.28**	**.29**	**.26**	**.27**	**.16**	**.21**	**.24**	**.22**

Notes: a. normal (at school or at work)=1, not normal (school dropout, suspending, and unemployed)=0; b. Scale used for psychological well-being: 1=Not at all and 5=Extremely; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < 001$; N =618.

Predicting psychological improvement

To answer the last research question, multiple regression analyses were conducted to assess how family communication environment, personal variables, interpersonal relationship, Internet use variables, IAD symptoms and risk/problem behaviors can predict the psychological improvement, since significant less psychological distress was found (see Table 6.13). The improvement was computed by subtracting the scores on discharge from those on admission.

As for the overall psychological improvement, results showed that parenting styles were the strongest significant predictors, i.e., paternal punishment ($\beta = -.70$, $p < .01$), paternal favoring the child ($\beta = .78$, $p < .05$), paternal over-intervention ($\beta = .67$, $p < .05$), and maternal favoring the child ($\beta = -.74$, $p < .05$). This indicates that on admission, the respondents with father taking less punishment, more favoring and over-intervention as parenting style, while mother not taking favoring as parenting style, showed higher degree of psychological improvement. Within Internet connectedness variables, Internet adhesiveness ($\beta = .30$, $p < .05$) was a significant predictor. This means that the higher degree of Internet adhesiveness the respondents showed on admission, the higher degree of overall psychological improvement they had. Furthermore, among online gaming variables, "time began gaming" ($\beta = -.35$, $p < .01$) was a significant predictor. This means the shorter history of online gaming the respondents had, the higher degree of overall psychological improvement they had. Among the demographic characteristics, age ($\beta = .39$, $p < .05$) significantly predicted the overall psychological improvement. Those older respondents had

higher degree of overall psychological improvement. A total of 30% of variance were accounted for in the regression equation.

As for somatization, results showed that parenting styles were the strongest significant predictors: paternal punishment (β = -.57, p < .05) and paternal over-intervention (β = .70, p < .05). This means that the lower degree of paternal punishment and higher degree of paternal over-intervention on admission, the the higher degree of improvement the respondents showed in somatization. Within Internet connectedness scopes, Internet adhesiveness (β = .29, p < .05) significantly predicted the degree of improvement in somatization. This indicates that the respondents with higher degree of Internet adhesiveness on admission, had higher degree of improvement in somatization. Furthermore, IAD symptoms (β = -.46, p < .01) was a significant predictor for degree of improvement in somatization. This indicates that the respondents with less IAD symptoms when entering the clinic showed higher degree of improvement in somatization. Among the demographic characteristics, social status (β = -.35, p < .01) significantly predicted the degree of improvement in somatization. The respondents who could not maintain normal social status on admission had higher degree of improvement in somatization. A total of 24% of variance were accounted for the regression equation.

Referring to improvement in obsessive-compulsive symptom, parenting styles were the strongest significant predictors, i.e., paternal punishment (β = -.51, p < .05), paternal favoring (β = .80, p < .05), maternal refusal and rejection (β = -.51, p < .05), and maternal favoring (β = -.78, p < .05). This indicates that the respondents with

lower degree of paternal punishment, higher degree of paternal favoring, lower degree of maternal refusal and rejection and lower degree of maternal favoring on their admission, had higher degree of improvement in obsessive-compulsive symptom. Neuroticism-stability personality (β = -.31, p < .05) was another significant predictor. This means that the higher degree of neuroticism the respondents showed, the higher degree of improvement in obsessive-compulsive symptom they had. Among the online gaming variables, online game use history (β = -.25, p < .05) was a significant predictor. This means that the shorter the online gaming history, the higher degree of improvement in obsessive-compulsive symptom the respondents had. A total of 20% of variance were accounted for the regression equation.

In terms of improvement in the symptom dimension of interpersonal sensitivity, the results showed that paternal favoring (β = .85, p < .05) and maternal favoring (β = -.75, p < .05) were significant predictors. This means that the respondents with higher degree of paternal favoring and lower degree of maternal favoring on admission, the higher degree of improvement in interpersonal sensitivity they had. Furthermore, among the demographic variables, gender (β = .30, p < .05) significantly predicted the degree of improvement in interpersonal sensitivity. This indicates that the male respondents showed higher degree of improvement in the symptom of interpersonal sensitivity. A total of 26% of variance were accounted for the regression equation.

Referring to degree of improvement in depression, the results showed that paternal

over-intervention ($\beta = .78$, $p < .05$) was a significant predictor. This means that the respondents with higher degree of paternal over-intervention on admission showed higher degree of improvement in depression. Within those Internet connectedness scopes, Internet adhesiveness ($\beta = .31$, $p < .05$) significantly predicted the degree of improvement in depression. This means that the respondents who had higher degree of Internet adhesiveness showed higher degree of improvement in depression. Furthermore, among the online gaming variables, gaming history ($\beta = -.34$, $p < .01$) was another significant predictor. This indicates that the respondents with shorter online gaming history had higher degree in improvement in depression. In addition, age ($\beta = .33$, $p < .05$) was the significant demographic predictor. The older respondents had higher degree of improvement in depression. A total of 21% of variance were accounted for the regression equation.

In terms of anxiety, parenting styles were the strongest significant predictors: paternal favoring ($\beta = .90$, $p < .05$) and maternal favoring ($\beta = -.89$, $p < .05$). This indicates that the respondents with higher degree of paternal favoring and lower degree of maternal favoring on admission had higher degree of improvement in anxiety. Among Internet connectedness scopes, Internet adhesiveness ($\beta = .28$, $p < .05$) significantly predicted the degree of improvement in terms of anxiety. This means that the respondents who had higher degree of Internet adhesiveness, had higher degree of improvement in anxiety. Furthermore, online gaming history ($\beta = -.27$, $p < .05$) was another significant predictor. This indicates that those respondents with shorter history of online gaming had higher degree of improvement in anxiety.

A total of 26% of variance were accounted for the regression equation.

For hostility, paternal punishment (β = -.76, p < .01), paternal favoring (β = .80, p < .05), and maternal favoring (β = -.79, p < .05) were significant predictors. This means that the respondents with lower degree of paternal punishment, higher degree of paternal favoring and lower degree of maternal favoring on admission had higher degree of improvement in hostility. Within Internet connectedness scopes, Internet adhesiveness (β = .52, p < .001) significantly predicted the degree of improvement in hostility. This indicates that the respondents with higher degree of Internet adhesiveness on admission had higher degree of improvement in hostility. Furthermore, among those online gaming variables, "time began gaming" (β = -.35, p < .01) significantly predicted the degree of improvement in hostility. This means that the respondents who had shorter online gaming history had higher degree of improvement in hostility. A total of 31% of variance were accounted for the regression equation.

As for phobic anxiety, the results showed that paternal punishment (β = -.73, p < .05) and over-intervention (β = .62, p < .05) were the strong predictors. This means that the lower degree of paternal punishment and higher degree of paternal favoring the respondents showed, the higher degree of improvement in phobic anxiety they had. Furthermore, gender (β = .24, p < .05) was the significant demographic predictor. This indicates that male respondents had higher degree of improvement in phobic anxiety. A total of 13% of variance were accounted for the regression equation.

Referring to paranoid ideation, paternal punishment (β = -.69, p < .05) and maternal favoring (β = -.76, p < .05) were significant predictors. This means that the lower degree of paternal punishment and maternal favoring the respondents had on admission, the higher degree of improvement in paranoid ideation they had. Among Internet connectedness scopes, computer interest (β = .24, p < .05) significantly predicted the degree of improvement in paranoid ideation. This indicates that the respondents who had higher degree of computer interest when entered the clinic, had higher degree of improvement in paranoid ideation. Moreover, among online gaming variables, gaming history (β = -.41, p < .01) significantly predicted the degree of improvement in paranoid ideation. This means that respondents who had shorter history of online gaming had higher degree of improvement in paranoid ideation. Age (β = .35, p < .05) was the significant demographic predictor. This indicates that the older respondents had higher degree of improvement in paranoid ideation. A total of 25% of variance were accounted for the regression equation.

In terms of psychoticism, the results showed that neuroticism-stability personality was a significant predictor (β = -.29, p < .05). This means that the higher degree of neuroticism the respondents showed on admission, the higher degree of improvement in psychoticism they had. Furthermore, within Internet connectedness scopes, computer interest (β = .26, p < .05) significantly predicted the degree of improvement in psychoticism. This indicates that the respondents with higher degree of interest in computer, had higher degree improvement in psychoticism. Among the online gaming variables, gaming history (β = -.37, p < .01) was another significant

predictor. This means that the respondents with shorter history of online gaming had higher degree of improvement in psychoticism. Among the demographic characteristics, age (β = .49, p < .01) significantly predicted the degree of psychoticism. The older respondents had a higher degree of improvement in psychoticism. A total of 27% of variance were accounted for the regression equation.

In general, parenting styles, Internet adhesiveness and online gaming history were among the strong predictors for respondents' improvement in terms of overall psychological well-being and the nine specific symptoms. Respondents' psychological well-being was examined both on admission and on discharge, but all other data were only collected when they entered the Base. Therefore, some predictors might affect the improvement due to consistency, while others may lead to psychological improvement because of the changes due to the treatments provided by in the clinic. The details of the treatments in the clinical settings are investigated and discussed in next chapter. The aforementioned results on psychological improvement are presented in Table 6.16.

Table 6.16 Regression analysis of the impact of demographics, personality, parental marital relationship, parenting styles, interpersonal relationship, Internet connectedness, online gaming, IAD symptoms, risk/problem behaviors on psychological improvement

Predictors	Psychological improvement[b]									
	GSI	Somatization	Obsessive -Compulsive	Interpersonal Sensitivity	Depression	Anxiety	Hostility	Phobic Anxiety	Paranoid Ideation	Psychoticism
	β	β	β	β	β	β	β	β	β	β
Demographics										
Gender (male=1)	.19	.12	.09	**.30***	.20	.04	.08	**.24***	.17	.14
Age	**.39***	.27	.29	.13	**.33***	.32	.28	.27	**.35***	**.49****
Education level	-.19	-.06	-.10	-.03	-.14	-.18	-.24	-.12	-.29	-.20
Social status[a] (normal=1)	-.12	**-.35****	-.11	.03	-.04	-.12	.02	-.16	-.06	-.09
Personality										
Neuroticism–Stability	-.26	-.27	**-.31***	-.26	-.27	-.17	.03	-.07	-.21	**-.29***
Socialization–Psychoticism	-.00	-.05	-.06	.02	.07	.04	.00	-.05	.02	.04
Extroversion–Introversion	.01	.04	.08	-.11	.01	.04	.10	-.10	.10	.11
Parental marital relationship	-.16	-.20	-.18	-.15	-.13	-.07	-.13	-.14	-.06	-.11
Parenting style										
Father										
Warmth & understanding	-.31	-.23	-.32	-.22	-.29	-.36	-.01	-.36	-.31	-.13
Punishment	**-.70****	**-.57***	**-.51***	-.48	-.50	-.47	**-.76****	**-.73***	**-.69***	-.43
Refusal & rejection	.10	.08	.14	.34	-.17	-.08	.06	.34	.45	-.13
Overprotection	.03	.07	.02	-.11	-.03	.26	-.01	-.17	.07	.06
Favoring the child	**.78***	.31	**.80***	**.85***	.64	**.90***	**.80***	.41	.72	.64
Over-intervention	**.67***	**.70***	.46	.40	**.78***	.39	.49	**.62***	.33	.53
Mother										
Warmth & understanding	.03	.11	.07	-.00	-.01	.06	-.01	.06	.01	-.05
Punishment	.24	.40	.17	.11	.14	.31	.20	.07	.09	.32
Refusal & rejection	-.29	-.17	**-.51***	-.39	-.09	-.31	.07	-.07	-.34	-.28
Overprotection	-.04	-.26	.11	.16	-.07	-.11	-.17	-.14	.20	.01
Favoring the child	**-.74***	-.28	**-.78***	**-.75***	-.61	**-.89***	**-.79***	-.32	**-.76***	-.65

Table 6.16 continued

Predictors	Psychological improvement[b]									
	GSI	Somatization	Obsessive -Compulsive	Interpersonal Sensitivity	Depression	Anxiety	Hostility	Phobic Anxiety	Paranoid Ideation	Psychoticism
	β	B	β	β	B	β	β	β	β	β
Interpersonal relationship										
With peers	-.03	.22	.09	-.26	-.03	-.13	-.25	.08	-.18	.01
With teachers	-.19	-.31	-.26	-.02	-.13	-.19	-.08	-.15	.07	-.24
Internet connectedness										
History scope	.08	.01	.06	.01	.06	.14	-.04	.04	.10	.13
Task scope	-.05	-.07	-.02	-.09	-.06	-.05	-.06	-.17	.03	-.05
Site scope(Internet café=1)	-.03	-.08	-.02	.05	-.02	-.10	.00	-.10	.02	-.03
Goal scope	.15	.13	.21	.03	.13	.11	-.05	.21	.13	.10
Activity scope	-.32	-.34	-.31	-.13	-.22	-.29	-.12	-.08	-.34	-.27
Intensity scope	-.02	-.10	-.06	-.08	.06	.01	.01	-.15	.06	.05
Evaluation	.04	.04	.14	.01	-.00	.16	-.04	-.07	.07	-.10
Internet adhesiveness	**.30***	**.29***	.20	.24	**.31***	**.28***	**.52*****	.16	.20	.16
Computer interest	.11	.01	.09	.20	.11	-.05	.09	-.10	**.24***	**.26***
Online gaming										
Online game playing (yes=1)	.07	.21	-.01	.20	.13	-.01	-.12	.03	07	-.06
Time began gaming	**-.35****	-.21	**-.25***	-.11	**-.34****	**-.27***	**-.35****	-.20	**-.41****	**-.37****
Number of friends online	-.23	-.25	-.15	-.03	-.27	-.17	-.17	-.19	-.24	-.24
IAD symptoms	-.25	**-.46****	-.22	-.26	-.22	-.13	-.11	-.11	-.11	-.16
Risk/problem behaviors	-.12	.05	-.19	.02	-.08	-.08	-.13	-.21	-.14	-.07
R Square	**.30**	**.24**	**.20**	**.26**	**21**	**.26**	**.31**	**.13**	**.25**	**.27**
Adjusted R Square	**.25**	**.20**	**.17**	**.22**	**.18**	**.21**	**.26**	**.10**	**.20**	**.23**

Notes: a. normal (at school or at work)=1, not normal (school dropout, suspending, and unemployed)=0; b. Scale used for psychological well-being: 1=Not at all and 5=Extremely; *$p < .05$; **$p < .01$; ***$p < .001$; N =618.

6.5 DISCUSSION

Study I in chapter five has shown that numerous negative media reports about Internet addiction have caused great concern among the public. In response to the media coverage, this study attempted to evaluate the clinical profile of Internet addicts and identify predictors of Internet addiction, risk/problem behaviors, and overall well-being of the respondents based on the clinical record in one of the earliest and largest Internet addiction clinics in Mainland China.

By including Internet connectedness scopes, this study drew a more detailed picture of Internet use, especially the excessive users in China. Internet connectedness scopes turned out to be not only significant predictors for the development of Internet addiction, risk/problem behaviors, academic performance and psychological distress, but also significantly predicted the psychological improvement. Therefore, the Base provided treatments with abstinence of Internet use, which may need further studies. Online gaming as one of the most popular Internet activities was found to have great influence in the development of Internet dependence and other risk/problem behaviors, and showed negative impact on the respondents' academic performance and psychological well-being. The results of this study confirm the conceptual framework aforementioned, indicating that the quality of family communication is indeed correlated to children's behaviors and psychological development, and that negative parenting styles may raise the level of psychological distress and influence Internet addiction. Excessive Internet users appeared to have a distinctive personality profile, and specific personality traits have also been identified closely related to psychological distress and risk/problem behaviors.

Based on these results, it is logical to suggest that one reason some individuals spend more time on the Internet is to counteract some real-life problems, such as inner conflicts rooted in the personality and poor family communication. The Internet may be used as an escape or as a tonic for them to pursue power, achievement, sense of superiority, and establishing virtual friendships online (Ebeling-Witte, Frank, & Lester, 2007). However, their Internet abuse caused more negative outcomes, including Internet addiction, risk/problem behaviors, academic-related problems and psychological distress. Therefore, treatment and intervention for Internet addiction should take all these factors into consideration, rather than treat it separately. Additionally, more specific discussions are provided as follows.

Social and psychological well-being

Research in the field of Internet addiction has attempted to delineate between healthy and problematic use of this medium (Ebeling-Witte, Frank, & Lester, 2007). The term *addiction* has extended into the psychiatric lexicon that identifies problematic Internet use associated with significant psychological and social impairment (Young, 1998a, 1998b; Young & Rodgers, 1998). The findings of the present study also showed the psychological impairment among the respondents in the clinic. The SCL-90-R profiles of the respondents on admission revealed a comparatively higher score, indicating the extent or depth of the psychiatric disturbance was severe in this group when they entered the clinic. The results also confirmed that IAD often occurs concurrently with other mental symptoms. After around one course (one course is three months, and the mean of the days in clinic was about 52 days) of treatment in the clinic, the respondents showed significant improvement in psychological well-being, with comparatively lower scores for the

global symptom index (GSI) as well as all the nine symptoms on discharge. There were no treatment variables in the mapping, but all the respondents went through the same daily schedule, about one third clients in the clinic received medication, and some special cases may even need other special nursing or treatments. More details about IAD treatment in the clinic will be discussed in the following chapter.

As for social well-being, it mainly referred to academic performance of the young respondents in this study. Items of academic assessment and academic-related problems reflect the overall academic performance. The former item reflected more immediate outcomes associated with academic work, while the latter was indirect but also closely related to students' academic performance. According to the results, Internet addiction significantly predicted academic-related problems, which means students with Internet dependence tend to experience more problems in study. This is particularly relevant given the excessive Internet use among those Internet addicts. Furthermore, risk/problem behaviors significantly predicted academic performance regarding the two items. Thus, risk/problem behavior was associated with educational disruption, with poorer academic assessment and more academic-related problems. Besides, online gaming also showed a consistent negative association with academic performance. These significant negative associations are consistent with findings from Internet addiction literature and previous gaming studies (Anand, 2007; Chiu, Lee, & Huang, 2004; Skoric, Teo, & Neo, 2009).

Personality traits

According to Bandura's (1986) theory of reciprocal determinism, when environmental constraints are low, personality traits can be extremely important in predicting an individual's behavior. Research on Internet addiction has demonstrated how the tendency to use the Internet in an uncontrolled way is connected to certain

personal characteristics (Chak & Leung, 2004; Milani, Osualdella, & Blasio, 2009; Young & Rogers, 1998). Consistent with the findings of previous studies, the results of the EPQ personality questionnaire measured in this study indicated that the respondents with Internet addiction tended to be more antisocial, aggressive, and egocentric. The personality trait of psychoticism was identified as a significant predictor for Internet addiction, and extroversion was found positively associated with risk/problem behaviors. In addition, with regard to the overall psychological distress as well as all the nine mental symptoms, one trait was of particular interest. The results demonstrated that neuroticism had significant and overwhelming negative influence on psychological well-being, which are consistent with previous studies reporting neuroticism as the personality trait closely related with the development of psychological distress (Chen, 2008; Huang et al., 2010; Seigfried, Lovely, & Rogers, 2008; Seigfried-Spellar & Rogers, 2010). Black and his colleagues conducted a study to assess Internet-dependent users with axis-II disorders, and found 52% of the subjects met the criteria for at least one personality disorder and 24% exhibiting borderline personality disorder (Black, Belsare, & Schlosser, 1999; Huang et al., 2010). Therefore, consistent with previous studies, these results suggest that specific personality traits may predispose an individual to develop problems from excessive Internet use (e.g., Griffiths & Dancaster, 1995; Peters & Malesky, 2008; Yang, Choe, Baity, Lee, & Cho, 2005). Neuroticism may be a specific personality subtype of individuals experiencing various psychological problems. Neurotic individuals are sentimental, irritated, and sensitive to all kinds of stimulations, so they are often anxious or depressed (Eysenck, 1978, 1990; Goldberg, 1999; Issever, Onen, Sabuncu, & Altunkaynak, 2002). Therefore, when neurotic individuals have excessive Internet use, they may encounter more impairment of

psychological well-being.

The findings might have significant implications in determining what causes the problems – is it the Internet, or is it something inherent in the individual that predisposes him/her to developing problems (Peters & Malesky, 2008)? Considering some of the common personality themes may help formulate better interventions than just removing individuals from access to the Internet (Peters & Malesky, 2008).

Family communication

Proposed in previous research, Internet addiction may be one form of risk/problem behaviors among young people (Yen et al., 2007). The findings of the present study confirmed the results of previous studies that children's Internet addiction and other risk/problem behaviors were indicated to share similar family factors, such as parenting style and parental marital relationship. As for parenting styles, the results revealed that the respondents rated parental rearing behaviors as being punitive, rejecting, over-intrusive, and lacking in responsiveness consistently showed higher degree of Internet addiction, psychological distress and more risk/problem behaviors. The results confirmed that the profound influence of parenting style and family communication environment are important in the psychological development of young people and the development of Internet dependency. In addition, parenting styles were the strongest predictors for the respondents' psychological improvement. Hence, a family-based prevention of Internet addiction should be implemented for adolescents with negative family factors (Huang et al., 2010; Yen, Yen, Chen, Chen, & Ko, 2007).

Specifically, this study found paternal rearing styles were much more influential than maternal ones in both the development of the problems and the recovery process. Lei and Wu (2007) highlight that as children approach middle childhood and

adolescence, the influence of fathers on children's behavior and development becomes stronger. The findings in this study confirmed inadequate paternal rearing style as a stronger predictor. Although mothers in contemporary Chinese society are still likely to serve as primary caregivers during early childhood, and mothers may continue to pay much attention to children's education (Lei & Wu, 2007; Yang, Wang, Li, Teng, & Ren, 2008), fathers were seen as the primary experts among the young children, compared with the troubling stereotyping of mothers as the technologically inept ones (Livingstone, 2002a). It is for this reason that the father-child interaction appears to exert greater influence on children's Internet use and various risk/problem behaviors. Additionally, it might be due to strong father-son coalitions, since the majority of the respondents in this study were males and male children mainly learn about authority from their fathers (Sennett, 1980; Socha, 2006). Therefore, fathers need to pay more attention to the role in children's behavior and psychological development.

Online gaming

Online gaming is a common activity among excessive Internet users, and can be one of the triggers to addiction. This study also confirmed the important role of online gaming in the development of Internet addiction, making players in the high-risk category of Internet addiction. Online games create compelling, immersive, and socially rich virtual worlds, therefore the game-playing group showed higher degree of Internet connectedness compared with the non-player group. Moreover, the findings also showed that online gaming, especially the gaming history significantly predicted the overall psychological well-being and most of the symptoms. The respondents with shorter online gaming history seemed to recover more easily. Therefore, the addictive potential of gaming should be taken into consideration

regarding prevention and intervention for Internet addiction. Moreover, online gaming may pose risk to those individuals who play excessively (Ng & Wiemer-Hastings, 2005; Smyth, 2007). This study also found the positive correlation between online gaming and those signs of impairment, including academic-related problems, risk/problem behaviors, and psychological distress, such as obsessive-compulsive, interpersonal sensitivity and hostility. Previous research found that after indulging in online gaming for long, children may gradually neglect their studies, become alienated from their real-life relationships, and even get fully immersed within virtual worlds (Huang et al., 2010). This is also consistent with the results of this study. Furthermore, previous studies have found that online games, because of their graphic, emotional and mainly violent nature, can increase hostile emotion and aggressive behavior in the players, especially in males (e.g., Anderson, 2004; Carnagey & Anderson, 2005; Grüsser, Thalemann, & Griffiths, 2007; Willenz, 2002). Consistently, this study also found the positive correlation between online gaming and hostility. Nevertheless, this study does not suggest that online gaming should be forbidden in current Internet era. As the findings revealed that it was online gaming to the degree of having IAD symptoms that may lead to negative outcomes such as academic-problems. Special attention should be paid to this mediating effect. Besides, many young people play online games in Internet cafés, which may also lead to more risk/problem behaviors.

Risk/problem behaviors

Internet addiction has been reported to be associated with other risk/problem behaviors among adolescents (Ko, Yen, Chen, Chen, Wu, & Yen, 2006; Ma, Li, & Pow, 2011). Although in this study risk/problem behaviors were not significantly associated with Internet addiction, risk/problem behaviors were found to be

significantly correlated with Internet connectedness and online gaming. The findings also suggested that risk/problem behaviors shared some predictors with Internet addiction, such as parental marital relationship, parenting styles, personality trait, Internet connectedness and online gaming. Therefore, risk/problem behaviors among the adolescents and young adults in current Internet era should be examined by grouping them with excessive Internet use.

The speed and capabilities of the Internet have produced far-reaching social impacts beyond the confines of cyberspace. Some online activities, such as online chatting and online gaming, may progress to offline encounters with other people. One concern became focal point of social and political action is access by minors to cybersex. In addition, the ability of people using the Internet to approximate or experiment with different practices online may also be important. The disinhibition effect on the Internet can make Internet users feel less inhibited. Thus, the freedom provided by cyberspace may also lead some participants to take various risk/problem behaviors that they learn online.

Furthermore, in this study, risk/problem behaviors shared some environmental factors with Internet addiction, such as parental marital relationship and parental rearing styles. These results suggest Internet addiction might be included in the organization of risk/problem behavior theory, thus prevention and intervention programs directed at the organization of risk/problem behaviors may be more appropriate than those which focus on specific behaviors alone (Jessor, 1991; Ko et al., 2008). In addition, Internet café patronage was found as a significant predictor for Internet addiction. Some situations, such as Internet cafés, can trigger smoking, drinking, fighting, and other risk/problem behaviors. With a lot of social problems derived from the circumstance of the use of Internet café (Wu & Cheng, 2007), the

governmental regulation and policies of Internet cafés and online games are still in need.

Interpersonal relationship

It is expected that usually during the adolescent years, individuals develop independence and the skills needed to function apart from the family (Lei & Wu, 2007). During their growing up, adolescents may feel more alienated from their parents and turn to peers for emotional support and advice (Maccoby & Martin, 1983). As students spend so much time at school, interpersonal relationship with teachers also important for adolescents and young adults. Although no significant relationship was found between interpersonal relationship and Internet addiction, interpersonal relationship was verified as predictor for risk/problem behaviors, academic performance and some psychological distress. Specifically, interpersonal relationship with teachers was negatively related to risk/problem behaviors and positively associated with academic assessment. Interestingly, better relationship with teachers predicted higher degree of anxiety, which may due to the pressure of maintaining good school performance. In contrast, better relationship with peers lead to lower degree of anxiety. Therefore, various programs need to be provided to teach young people strategies to build and maintain good interpersonal relationship in order to increase their social and psychological well-being (Yeh, Ko, Wu, & Cheng, 2008).

Demographic variables

Furthermore, the findings also revealed that the individual vulnerability might be also derived from the socio-demographic background of the respondents. Social status as the occupational variable was significantly associated with Internet addiction, risk/problem behaviors and academic performance. Internet addiction and

risk/problem behaviors caused various academic-related problems which may lead to school suspending or dropout. Moreover, these respondents who could not maintain their normal social status might try more risk/problem behaviors or excessive Internet use to pass time or for feeling modification. In the clinic, the respondents who could not maintain their normal social status on admission had more psychological improvement, for instance, somatization. Hence, instead of letting those school dropouts idling away their time, regulation, prevention procedures or treatment should target this high-risk group.

Consistent with previous research that males are more delinquent in Internet use than females (Ma, Li, & Pow, 2011), this study found that males were in the high-risk category with higher degree of Internet connectedness and online gaming. Although gender was not the significant predictor for Internet addiction or risk/problem behaviors in the clinical data, gender was found to significantly predict psychological improvement in clinical settings. For example, males were found to have more improvement in the symptoms of interpersonal sensitivity and phobic anxiety, which need more academic and clinical attention for professional treatments.

In this study, young adult (18-29) showed higher degree of Internet connectedness and online gaming, which may be associated with early adoption and heavy use of the Internet (Alexander, Kang, & Kim, 2006). The older may be exposed to the Internet earlier, and may show the obsessive-like characteristics related to Internet use (Pratarelli, Browne, & Johnson, 1999). In addition, within the older group were mainly college students who have flexible time schedules to manage without parental supervision and lack the skill of self-control (Anand, 2007; Ni, Yan, Chen, & Liu, 2009). All these factors may lead them to more Internet use. Interestingly, the older respondents also had more improvement in terms of overall psychological well-being,

as well as some specific symptoms, such as depression, paranoid ideation, and psychoticism, since the older respondents might understand the treatments more easily and quickly than the younger ones. Thus, it may be useful to divide the respondents by age in the treatment sessions.

Limitations and suggestions for future studies

Although this study was among the very few investigations based on the in-patient Internet-dependent respondents, remarkable insights were provided in consistent with previous research. The findings should be interpreted in the light of the following limitations.

Firstly, this was a study based on second-hand data. The research design and data collection were not conducted by the researcher. Therefore, all the analyses could only be done relied upon the current existing data.

Secondly, as aforementioned, there were no treatment variables in the conceptual mapping of this study. Therefore, although the results showed significant improvement in terms of psychological well-being, few explanations could be provided based on the current data. Investigation of the treatments will be supplemented by the following study presented in Chapter 7.

Thirdly, there is no control group in the clinical data. Thus, it is hard to make comparisons between Internet addicts and normal people. Further studies may be conducted among the young people with normal social status in order to better illustrate the differences between the Internet-dependent group and those individuals whose Internet use does not turn out to be problematic.

The fourth limitation of this research is the possible defensiveness of the respondents. Defensiveness is a possibility with all kinds of studies that participants

may attempt to appear socially desirable (Peters & Malesky, 2008). There also can be a more global defensiveness with regard to Internet use in the self-report data.

Moreover, the Internet addictive process is not fully understood. These results do not clearly indicate whether psychological distress is the cause preceding the development of such Internet abuse or if it was a consequence. Current overlapping theoretical accounts should be integrated to understand the mechanisms through which psychological well-being and Internet use impact each other and develop over time (Kim, LaRose, & Peng, 2009).

In addition, another major threat to the causal claim would arise if some unmeasured factor varying over time within individuals simultaneously causes increases in their Internet use and declines in social involvement and psychological well-being. One such factor might be developmental changes in adolescence, which could cause teenagers to withdraw from social contact (at least from members of their families) and to use the Internet as an escape (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998).

Finally, as for the generalizability of results, further research need to be conducted to compare other social contexts of Internet addiction. More comparative studies can be conducted within Asian area, such as South Korea, Taiwan, Hong Kong, where Internet addiction has also been brought into public focus. Additionally, more comparisons can be made between Eastern and Western worlds, or between developing and developed countries.

CHAPTER SEVEN

STUDY III: A QUALITATIVE EXPLORATION OF SYMPTOMS OF AND TREATMENT FOR INTERNET ADDICTION

7.1 INTRODUCTION

In Study II, predictors for Internet addiction are identified, and the in-patient young people also showed problems in academic performance and psychological well-being. To further provide detailed information about the signs of Internet addiction, this qualitative study was conducted. In addition, the results in Study II also revealed significant improvement in those young people's psychological well-being on discharge. Therefore, this study aimed to investigate the treatment process: what happened during the in-patient days? Instead of adopting clinical or psychological approach, this study attempts to provide some insights from communication perspective. Since Study II pointed to several factors or predictors, this study continues to focus on these factors. In general, according to the findings from the ethnographic data in the Internet addiction clinic, this study discusses the symptoms of and the treatments for Internet addiction systematically.

Following the previous chapter, this study provides a window on how the Internet has integrated into young people's daily lives and social interactions, especially among the Internet-dependent group. Based on qualitative data analyses, signs of Internet addiction are shown in parents' narratives. To cope with the impairment caused by problematic Internet use in different domain, systematic treatments are discussed to help the young people restore health. Specifically, Section 7.2 provides

a brief overview of the theoretical framework and proposes research questions in Study III. Section 7.3 discusses the research methods used. Section 7.4 presents the research findings. Section 7.5 provides discussions and suggestions for future studies.

7.2 THEORETICAL FRAMEWORK AND RESEARCH QUESTIONS

The literature reviewed in this chapter is minimal for several reasons. First, regarding how the Internet has affected various domains of the lives of young people, there is a wide range of literature from multiple approaches. It is almost unmanageable to review such a large and diverse body of literature, especially within the scope of a single chapter. Second, as for the research question on the symptoms of Internet addiction, it can be better addressed through qualitative analysis with detailed information, such as Young's (1998a) pioneer research and many subsequent studies (e.g., Chou, 2001; Douglas, Mills, Niang, Stepchenkova, Byun, Ruffini, Lee, Loutfi, Lee, Atallah, & Blanton, 2008; Griffiths, 2000; Leon & Rotunda, 2000; Tsai & Lin, 2003; Wan & Chiou, 2006; Wilson & Peterson, 2002). Third, current research on professional treatment for Internet addiction is in the exploratory stage, because Internet addiction is still viewed as a broad topic with few common definitions and little guidance. Therefore, a qualitative exploration might allow themes to emerge from participants, rather than testing relationships among variables identified in previous research. The literature reviewed here focused on the conceptual model of the integration of the Internet in young people's lives to depict Internet dependency.

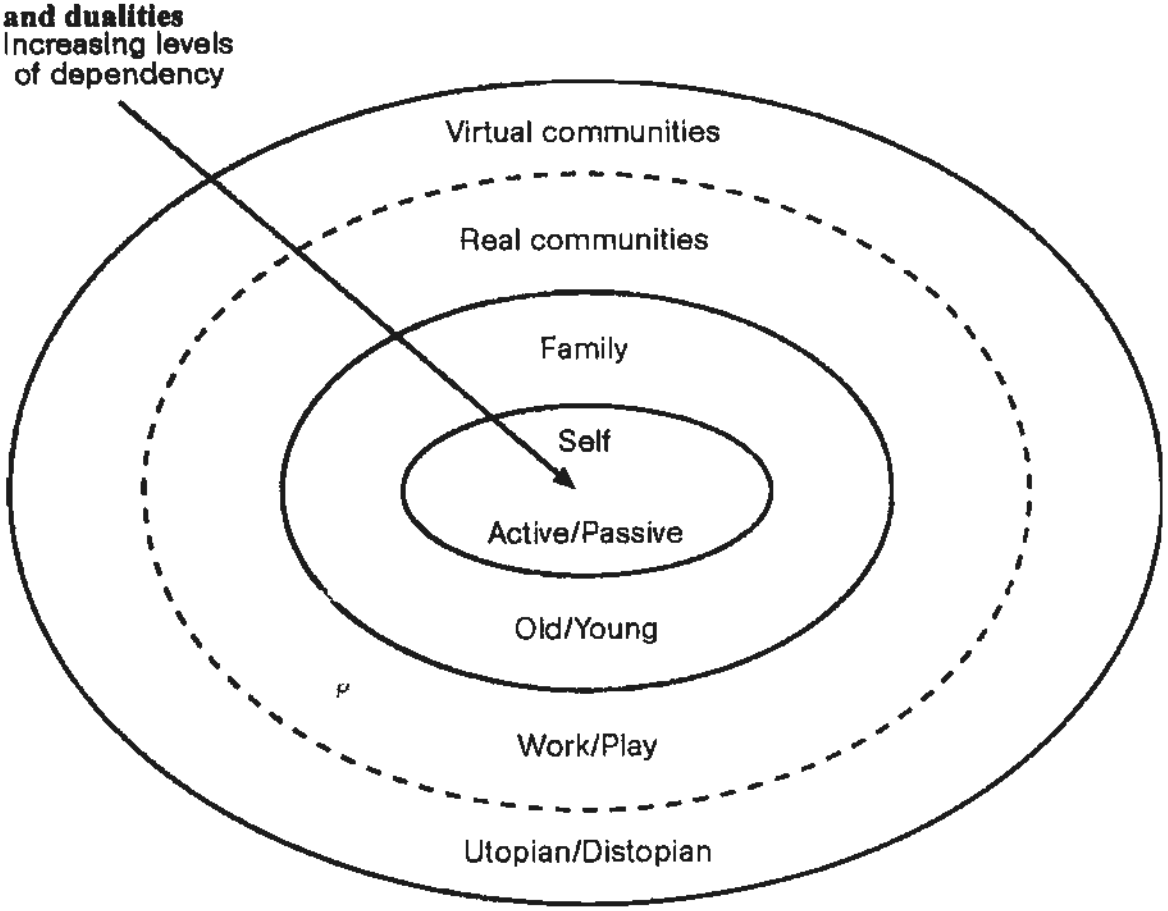
Previous studies about the Internet and young people have examined various age cohorts, including pre-teen children (e.g., Facer & Furlong, 2001; Hutchby & Moran-Ellis, 2001; Livingstone, 2003; Montgomery, 2001; Tarpley, 2001; Valentine

& Holloway, 2002), teenagers (e.g., Clark, 2003; Livingstone & Bober, 2003; Livingstone and Bovill, 2001; Subrahmanyam, Kraut, Greenfield, & Gross, 2001), and young adults (e.g., Livingstone, 2002a, 2003; Livingstone & Bober, 2003; Livingstone & Bovill, 2001).

7.2.1 The integration of the Internet into young people's lives

To investigate how the Internet has influenced young people's daily lives and social interactions, McMillan and Morrison (2006) conceptualized a model of four primary domains, i.e. self, family, real communities, and virtual communities, with a key duality of feelings evoked by the Internet in each of the four domains (see Figure 7.1). The concentric circles used in the model in Figure 7.1 show that the Internet contributes to every aspect of young people's lives (McMillan & Morrison, 2006). They also found a growing dependency on the Internet among young people (depicted by the arrow in Figure 7.1), which exists in all spheres of young people's lives (McMillan & Morrison, 2006). For some, the dependency develops so intensely that is described as addiction (McMillan & Morrison, 2006). Additionally. key related literature is examined for each sphere.

Figure 7.1 The integration of the Internet into young people's lives: domains and dualities



Source: (McMillan & Morrison, 2006).

The Internet and the self

Byam argued that the extent to which individuals use computer-mediated communication "as a means to invent new personas, to recreate their own identities, or to engage in a combination of the two and the ways in which they do so are issues central to the construction of a computer-mediated social world" (Byam, 1995, p. 156). The Internet allows for the creation of new personas, and the central dichotomy that emerged in terms of how young people use the internet for self-definition and meeting personal needs is its active/passive nature (McMillan & Morrison, 2006). Many Internet users see the Internet as inherently active, because they usually invent new personas, create various identities, or engage in a combination of the two in order to use it, but others just seek for ways to simplify their Internet use so as to get

benefits online without having to be so active all the time (Byam, 1995; McMillan & Morrison, 2006). For most young people, the online lives are no less real than the offline ones, and the Internet is a place helping them solidify their offline identities (McMillan & Morrison, 2006; Valentine and Holloway, 2002). However, the disembodied anonymity on the Internet might lead to the construction of fantasy selves and extensive dabbling in online identity (Hardey, 2002; McMillan & Morrison, 2006).

The Internet and the family

Family plays an important role in young people's Internet use. Previous literature on the Internet and family communication focuses on children who are still living at home as well as those young people move away from home, and many of the patterns are identified in both groups. Parents are facilitators regarding home computer and Internet access, and encourage children's Internet use for staying in touch when they are away from home (McMillan & Morrison, 2006). Fathers and mothers are reported to play different roles in young people's Internet use (Facer, Sutherland, Furlong, & Furlong, 2001a; Pasquier, 2001; Ribak, 2001). In addition, siblings also play an important role for many young people, such as introducing them to the Internet and various online activities (McMillan & Morrison, 2006). The key duality emerging from examination of Internet use and the family is the contrast between "old and young" (McMillan & Morrison, 2006). Thus, researchers need to pay attention to this generation gap between old and young within family environment.

The Internet and real communities

Communication scholars maintain that the Internet and other new media should also be studied for their use within existing social relations and practices, rather than

a new social space that constitutes relations and practices of their own (McMillan & Morrison, 2006; Slater, 2001). Current studies provide evidence that the real communities in which people live, work and play can be influenced by the Internet, while community norms may also shape Internet use (Borgida, Sullivan, Oxendine, Jackson, Riedel, & Gangl, 2002; Holloway & Valentine, 2000). Some studies suggest that a common use of the Internet is to maintain contacts with friends and family and to build stronger ties with those communities which also exist offline (Facer, Sutherland, Furlong, & Furlong, 2001b; Gross, Juvonen, & Gable, 2002; Johnson, 2001). There is a discussion of instrumental and hedonic use of the Internet in previous research (e.g., Childers, Carr, Peck, & Carson, 2001; Novak, Hoffman, & Yung, 2000; Ruggiero, 2000; Subrahmanyam et al., 2001). Usually, online work is regarded as necessary and appropriate, but many people have grave concerns about online play (McMillan & Morrison, 2006). Thus, the work/play dichotomy is the central tension in the discussion between the Internet and real communities (McMillan & Morrison, 2006).

The Internet and virtual communities

Though the distinction is sometimes arbitrary, previous research reveals differentiation between real and virtual communities (McMillan & Morrison, 2006). The real communities refer to those existing firmly in the offline world, while virtual communities are the disembodied ones that only exist online. Livingstone (2002) points out that the Internet can create certain communities in which only those who have easy access to the Internet and speak the *lingua franca* can participate in these new forms of community. As illustrated by the dotted line in the model (see Figure 7.1), the border between real and virtual communities is often fluid and permeable (McMillan & Morrison, 2006). There is an ambivalent attitude towards virtual

communities. Some research presented some positive benefits (e.g., Livingstone, 2002a; Riva& Galimberti, 1998), but other studies have reported many negative social consequences (e.g., King, 2001; Kraut et al., 2002; Spears, Postmes, Lea, & Wolbert, 2002). In this domain, the tension focuses on the interlocking dualities of positive/negative, or utopian/dystopian views (McMillan & Morrison, 2006).

7.2.2 Research questions

According to the model, each of the concentric circles represents a domain or sphere in which the Internet has influenced young people's lives, with the issue of dependency as a central reoccurring theme that overlaps all spheres, from the inner sphere, the self, outward to virtual communities (McMillan & Morrison, 2006). Thus, this study sought to investigate how the Internet has been integrated into the informants' daily lives to cause certain degree of impairment of their life domains, and what were the treatments provided by the clinic to restore the domains to balance. In particular, the following research questions were proposed:

RQ_1: How did the Internet negatively affect the informants' lives to certain degree of Internet addiction? Or what were the "symptoms" of Internet addiction?

RQ_2: What were the treatments for Internet addiction provided by the clinic? How did the informants work with the program to get recovered?

7.3 METHODS

The author conducted a three-month ethnographic research in the Addiction Medicine Center (AMC), General Hospital of Beijing Military Region from September 28, 2009 to January 1, 2010, with a follow-up study between April 22,

2010 and May 15, 2010. The data for the current study were collected from a combination of observations, field notes, interviews, archival materials, and examination of documents.

In particular, participant observation was one central research instrument for data gathering, and the researcher kept detailed records of observations. Additionally, in-depth interviews were also conducted as data collection method to further answer the research questions. According to the rehabilitation program, at least one of the parents had to stay in the clinic with their in-patient child, therefore parent-child pairs were interviewed, supplemented by the interviews of staff members. Interviews were generally semi-structured at most. Questions were about the felt or lived perspective of the informants who had particular experiences of Internet addiction and going through Internet addiction treatments. Open-ended questions and encouraging free expression on the part of the interviewees were firstly used to investigate what were the "signs" of Internet addiction and how did they feel about the treatment program, and later followed up with more semi-structured interviews, to further probe, explore and clarify. Interviews were conducted in Chinese Mandarin, tape recorded, and transcribed. The interviews ranged from 50 min to 2.5 hours. In total 36 parent-child pairs and 15 staff members were interviewed. The profile of those informants whose words were cited in this study is presented in Appendix 4.

Social interactions need to be understood with introspection of the participant observer (Spradley, 1980; Witteborn, 2007). My introspection focused on the dialectical relationship between my own personal experiences and the experiences of the informants. The impact of Internet use has special importance for me, as I grew up in China, a society with the largest Netizen population that the Internet penetration rate is still growing with lower costs. I am also an Internet user who uses

Internet everyday for several hours. Moreover, I am a student of communication and media studies. To ensure construct validity, one staff member who worked since AMC was founded served as an expert and gave feedback on my interpretation of the data. The person was selected because of her rich experience of working in AMC, frequent contact with in-patient children and their parents, and her knowledge of related psychological knowledge.

7.4 FINDINGS

Guided by the aforementioned theoretical framework, this study analyzed the qualitative data collected in the Base. The findings are two-fold, the symptoms or the signs of Internet addiction in the informants' everyday life, and the treatments provided in the Base for informants to go through. The findings are organized according to the analysis in each domain. In addition, although the Base is affiliated to AMC, a clinic of one first-class hospital at Grade 3, the in-patient children are usually called "trainees" instead of "patients" to avoid the social stigma attached to illnesses. Therefore, "trainee" is used to refer to those in-patient informants in this study.

7.4.1 Symptoms

In this study, the researcher explored the narratives about personal experiences of parents who claimed to have children addicted to the Internet, because according to the findings in previous chapter and the clinical experience, few children entered the clinic voluntarily and the majority of the in-patient children were sent to the clinic involuntarily, being deceived or forced by their anxious parents. In addition, as the

significant other, parents may be among the first who noticed the signs of Internet addiction. Thus, the parental narratives serve as important part during diagnostic interviews on admission in AMC.

> What on earth does Internet addiction look like? If you don't have a child addicted to the Internet at home, it's very difficult for you to imagine what kind of life it is. As a parent, I think it's really terrible. The child has been changed, and our whole family has been changed. We finally come here, because we are all driven to our shifts. (Charles's mother)

This is an excerpt from a narrative that I collected from interviews among parents who sent their children to the clinic for Internet addiction. These parents might not have equipped with relevant medical or psychological knowledge about Internet addiction. When asked about what it means to be addicted to the Internet, they told their personal experiences. Based on interviews and participant observation, this study revealed that being addicted to the Internet meant using Internet as the everyday focus and negative impact on various social domains. The parents narrated consistent themes such as excessive Internet use, struggling between work and play, having family conflicts, and getting lost in cyberspace.

What it means to be addicted to the Internet: keeping increasing Internet use

This narrative was told by a mother in an interview response to the question "What does it mean to be addicted to the Internet for you?" She came to Beijing because of her son could not stop using Internet, so she and her husband sent their son to AMC.

> Well, take this summer holiday for instance. My son almost went online crazily. He didn't tidy his room, didn't take shower either. With the curtains closed, he just spent the whole day in his bedroom using Internet. He didn't come out to eat when the meals were ready. He was disobedient and very impatient. Every night, we had to urge him to go to bed several times, but he always tried to stay online longer. His father and I had no choice but to pull the cable or turn off the power. Alas, he got so angry and said you know nothing! I'm fed up with this! Then he just locked himself inside and continued to use Internet. (Neil's mother)

This narrative revealed the first theme related to Internet addiction, using the Internet with increasing amounts of time, and keeping staying online longer to achieve satisfaction. For example, the informant used the metaphor "like a ghost" to vividly describe her son's behaviors influenced by his excessive Internet use.

What it means to be addicted to the Internet: ruining the family

The following personal experiences were told during an interview with another mother in her late 30s. When was asked "As for you, what it means to be addicted to the Internet?" She told the following story:

> When my son could not use Internet, he was very irritable and often lost his temper. Because we control his Internet use, he now dislikes his father and me. He even did not eat with us, either. On several occasions, he said he wanted to kill us. We also turned to relatives and friends for help. But he would not listen. Last month, I tried to carry away the computer stealthily. When he came back home and found this, he yelled at us. He banged the door, pulled down the table, threw things... and then went into the kitchen, took the vegetable chopper and rushed at his father. His father was afraid that things could be out of control, and had to call the police. In the end, it was us who compromised. As soon as the computer was moved back home, he felt happy immediately. (Charles's mother)

As shown in this story, excessive Internet use had ruined the family life. The parent-child relationship became so intense that the son even took the chopper, just because of the Internet use.

What it means to be addicted to the Internet: becoming a school dropout

A woman in her early 40s told this story during an interview. She stayed in AMC with his husband because of their son was an in-patient. When she was asked what Internet addiction means for her, she told the following story:

> Our child's academic performance was really not bad. But because of using Internet, his grades went down linearly. Now he even cannot go to school. The teacher said he looked tired in class, and often fell asleep. Later on, we knew that he went to Internet café playing online games without letting us know. He said his head was full of online games. Then he said he had headache or stomachache now and then. He made excuses of having pain here or there for not going to school. And then he even skipped classes to go to Internet café. Once he had a big quarrel with us because of Internet use. He stole money from home and went to Internet café for several nights. He would not come back home until he spent all the money. He skipped classes quite often, and was criticized by teachers. So he had poor relationship with teachers. He often talked back to teachers rudely. Afterwards, he could not follow the classes. He then said to us, "I won't go to school for sure!"...We were afraid that he would be flunked out, so we had to apply for suspending his schooling. (Terry's mother)

Problem Internet use affected not only family communication, but also other real-life relationships, such as the relationship with teachers. Being addicted to the Internet also caused bad academic performance. Young people who stayed in the Internet cafés for a long time may learn other risk behaviors as well.

What it means to be addicted to the Internet: getting lost in virtual world

This story was told by a woman in her early 40s. She came back and forth between Beijing and her hometown, because she had to balance between her business and her in-patient son.

> Yeah, I was also curious about what he was busy with online. I felt that he had invested all his time and energy in the Internet. He used to like playing basketball before, but he didn't play anymore. He had fewer friends. He thought about nothing except the Internet. He asked for more pocket money. And all the money was spent to buy online items. He played the online games all day. His mind was filled with those fantastic ideas. Sometimes, I wanted to have a look. Then he said, "you can not at all understand it" and would not let me take a look. He just stayed at home all days without going out to contact other people. How can a person live like that? Right? So I said to him, "you shouldn't stay online all the time". He sometimes agreed, but just could not stop. You know what, due to Internet use, he often said that it's so boring to live. He had slit his wrist. And this time I even found that he bought poison for euthanasia! Oh my goodness! He really cannot continue like this! (John's mother)

This mother told such a sad story that his son was highly immersed in the virtual world. He disliked the real world compared with the utopia online. Thus, he felt bored to live and even committed suicide more than once.

7.4.2 Treatments

In general, the Base provides in-patient rehabilitation for the trainees addicted to the Internet. On admission, every trainee needs to have a medical examination, and the report for both physical and psychological conditions is kept in the personal record. A trainee usually needs to go through one course of treatment, which is three months. During the days in the Base, the trainees do not have access to the Internet and cannot use mobile phones, MP3/MP4 players, hand-held videogames, or any other new media devices. In the Base, the young trainees are required to wear the military uniform provided by the Base and they are called "trainee" by the staff members. All the trainees are required to live in the dorm with steel doors at the two ends of the corridor, which are locked when the trainees are inside. Except for special cases, all the trainees need to go through the same schedule (see Table 7.1). Accordingly, they

have to get up early in the morning, and do morning exercises together on the playground. On weekends, there are no morning exercises, so all the trainees can have half an hour more sleep. The scheduled activities in Table 7.1 refer to the rehabilitation program in the Base, which is also called the "five-in-one program".

Table 7.1 Daily schedule

Time	Activity
6:00 a.m.	To get up;
6:10 a.m. – 6:40 a.m.	Morning exercises;
6:40 a.m. – 7:20 a.m.	To tidy up the dorm;
7:20 a.m.– 8:00 a.m.	Breakfast;
8:00 a.m.– 9:00 a.m.	The ward rounds, and medication if needed;
9:00 a.m. – 11:00 a.m.	Scheduled activities;
11:00 a.m. – 11:20 p.m.	Break;
11:20 a.m. – 12:10 p.m.	Lunch;
12:10 p.m. – 2:00 p.m.	Siesta;
2:00 p.m. – 2:30 p.m.	To tidy up the dorm;
2:30 p.m. – 5:00 p.m.	Scheduled activities;
5:00 p.m. – 5:15 p.m.	Break;
5:15 p.m. – 6:15 p.m.	Dinner;
6:20 p.m. – 7:00 p.m.	To take a break, or squad meeting sometimes;
7:00 p.m. – 8:30 p.m.	To watch the evening news, and group presentation;
8:30 p.m. – 9:00 p.m.	Physical exercises;
9:00 p.m. – 9:30 p.m.	The ward rounds, and medication if needed;
9:30 p.m.	Lights out and to go to bed.

The five-in-one program includes psychotherapy, medication, behavior adjustment, educational technique, and social experience. In particular, psychotherapies include individual therapy, group therapy, family therapy, Morita therapy and other psychotherapeutic techniques. As for the cases who also suffer from anxiety, depression, attention deficit hyperactivity disorder (ADHD), etc., necessary medication is provided. Referring to trainees' disordered rhythm of life and various problem behaviors, behavior adjustment include multiple coping strategies, such as physical exercises, military training, and strict schedule for the trainees to get up,

have meals and go to bed regularly. Educational techniques refer to lectures, outward development, and even some outdoor activities. Finally, social experiences refer to those monthly extra curriculum activities, such as visit to orphanage, gerocomium, drug rehabilitation center, museums, etc. After going through the whole or getting recovered, on discharge, the trainee and his/her parents will get the evaluation report from all the five aspects and suggestions for future treatment are also provided.

Therefore, the five-in-one program is provided to restore health in different domains of the trainees' lives. The findings are discussed in the context of each domain, from the inner sphere, the self, and outward to virtual communities. Quotations from informants are used to illustrate or support insights relevant to each domain.

The self: active/passive

As mentioned in the previous chapter, the young people were deceived or forced by their parents to come to the clinic. Some felt very angry to enter such an environment where they could not use the Internet freely, so they shouted, screamed, or threw things. Some were quite shy, although most of them were master-hands on the Internet. On their admission, the staff members always tried to make friends with these young people. When they settled down, psychotherapists may conduct individual therapy for them. One psychotherapist told about how a boy began to rethink about himself and his life after one individual therapy:

> The 23-year-old young man, Chris, has come to me several times and asked for more individual therapies. He was one of the few who come to the Base voluntarily. He knew his Internet use was excessive and problematic, but he could not help using more. After that therapy in which we talked about "to say goodbye to the pseudo identity", he began to rethink about himself and wanted to talk more about this with me. (Chris's psychotherapist)

After stopping defining himself by using the Internet, Chris began to think about these questions seriously, such as "who am I?", and "what do I really want?" These questions also appeared in the diary kept by the trainees in Morita therapy (see

Appendix 5). In the Base, the trainees who have stayed for more than two months may hear more about Morita therapy. Based on the application of the trainee and with the guide of the psychotherapist, some trainees may be in Morita therapy for about three weeks. In Morita therapy, the trainee does not need to participate in any scheduled activities, and he/she stays alone in a separate dorm, with meals served by nurses. During the first week, there will be no media devices in the room, no computers, no TV sets, no radios, no books, no paper, and for some cases, even no windows for the trainee to look out of. Therefore, the trainee in Morita therapy has to face up to himself/herself. In the second week, the trainee in Morita therapy may be provided with paper and pen to write down something or draw something if he/she likes. The psychotherapist usually visits the trainee regularly. Most of those trainees who went through Morita therapy showed great changes. Mathew was such a good example during my stay in the clinic. He shared his experience in Morita therapy on discharge:

> Those who entered the clinic at the same time with me might still remember what I looked like. Yeah, I was yelling for blood. I told everybody that I wanted to drink blood at that time, which I think it's silly myself. When I was in Morita therapy, I was happy at first. I didn't need to do anything. I didn't need to get up early for morning exercise and I could sleep as long as I wanted. When I was awake, I visualized those online games in my mind to amuse myself. I recollected all the details but got bored soon. I began to guess what other trainees were doing at that time, and to expect meals so I could see someone passing by my door. When I got paper and pen, I really began to think about myself, why I was here in the Base and what kind of life I want to live in the future. Then everything became clear. You know what, I felt like a butterfly out of the cocoon. After leaving the Base, I will go back to school and I won't play those games anymore. I know I need perseverance, and I think my parents will be there to help me. I don't hate them for sending me here now. (Mathew)

Without those immersive virtual worlds online or any distraction from other media, the young people seemed to concentrate on the serious questions and find out answers by themselves. In addition, some trainees developed the new self through various offline activities in the Base. For example, one boy was famous as "the barefoot master of slam-dunking":

> They nickname me "the barefoot master of slam-dunking" because I always play basketball barefooted and I'm good at the dunk shot. Oh, I do that because I feel hot and my feet

> become sweaty when playing basketball. Well, later it seems to be cool, too. I also play well in *Free Style* online, but there is no Internet to show them. Anyway, it's great to find myself still good at playing. You know, I haven't played for a while, by which I mean the real basketball. (Leon)

Although there was no Internet access, there were plenty of offline activities for the trainees to show their talent, such as physical exercises, sports competitions, group presentations, and various outdoor activities. Instead of letting the Internet arrange their hours, the trainees became used to the schedule gradually. The parents were happy to find their children to get up early, have three meals regularly, go to bed on time, and even learn to wash clothes, and clean up the room. Without the Internet as the master of their lives, the trainees learnt to actively take control of their own lives.

The family: old/young

Family therapy is an important part of the whole treatment for Internet addiction. The psychotherapists made every effort to help reestablish the parent-child attachment. There were blame and fighting sometimes, as well as hugs and tears of joy in family therapy. For instance, Terry would not speak to his father. He ran away from home several times, stayed in the Internet cafés, and only returned home for money. After sending Terry to the Base, both of his parents also stayed in the clinic with him. His parents realized the problems in their family environment after several sections of group therapy for parents and symposium of family communication techniques. Terry's father began to write letters to Terry, and Terry also saved his after-meal desserts or fruits to give to his parents. The three family members cried and hugged during the family therapy. On discharge, they gave their psychotherapist a thank-you note and left happily hand in hand. In the thank-you note, Terry wrote:

> I love Michael Jackson. When I read about Michael wouldn't forgive his father until death, I thought I would be the same. I hated my father. He beat me, like an enemy. But after staying here in the Base, I find him changed. Maybe I changed, too. I knew a lot more from the letters he wrote to me. I won't leave home as I used to. Now I've got a lot of faith in my

family. I'm sure we will be happy from now on. (Terry)

Not only Terry, but also many other trainees gave their fruits or dessert to their parents after lunch or dinner. Some of them might not even speak to their parents at home. Therefore, the fruits and desserts meant a lot. Different from the situations at home, the trainees were rationed to the after-meal fruits and desserts twice a day, after lunch and dinner. They did not have money with them, so the food might be regarded as a token of their kindness to the parents. Many trainees understand their parents more after washing clothes and cleaning the room on their own every day. The parents were gratified to see these changes of their children.

> A banana, a piece of cake, or a box of yogurt might mean nothing at home. There are plenty of them in the refrigerator in our house. But here each child can have only one for their own. That's why I felt moved when my daughter gave her desserts to me. You know, it's not easy, because the only children are sometimes spoilt and they know less about courteousness and sharing. (Shirley's mother)

In the base, at least one of the parents had to stay with the trainee in the clinic. Thus, there were more opportunities for the parents to participate in various activities together with their children. In this way, the parents began to understand their children better. Many parents expressed that they would provide better parental mediation of their children's Internet use after learning the children's interests. Besides family communication strategies and parental mediation techniques, the parents also learnt some medical and psychological knowledge. Consistent with previous research, comorbidity of psychiatric symptoms such as anxiety, depression, and ADHD with Internet addiction was demonstrated among some in-patient adolescents and young adults (Ha, Yoo, Cho, Chin, Shin, & Kim, 2006; Ko, Yen, Chen, Chen, & Yen, 2008). Therefore, effective evaluation, treatment and relevant lectures were provided in the Base. For example, after knowing more about ADHD, Steve's mother understood her son better.

> I used to think my son as a naughty boy. He was a good student when he was in primary school, but his grades went down in junior high school. I kept blaming him for the way he

> did his homework. The relationship between us became worse and worse. Afterwards, he would rather stay in the Internet cafés. If I had known ADHD at that time, I would have brought my son for professional help and necessary medication earlier. (Steve's mother)

Real communities: work/play

After long time of immersion in the virtual worlds online, some trainees might feel uneasy in real-life face-to-face communication. Sean was such a shy boy. He was afraid to talk to other people except his family members, including his father, mother and younger sister. He would not go out for dinner with his family. After taking secondary school entrance exams, he refused to go to high school, because he felt afraid of his new classmates and teachers. The only thing could make him go outside was to buy cards of game points, and he would returned home when he got the cards. After entering the Base, Sean still did not talk to anybody. However, his psychotherapist persuaded him to join in the group therapy. After sitting in a ring with other trainees of the same age and listening to others' discussion about different things, Sean might say something in between, although he covered his face with his hands when talking. In the Christmas party, Sean even sang a song, although he sat among the audience rather than standing on the stage. His father was very happy to see his improvement.

> It's our fault that his mother and I were too busy to accompany him, letting him stay with the online games all the time. It is said that this is social phobia or whatever, we won't give up. Sean is a good boy, and we will spend more time to stay with him. I know it takes time. Now we see the improvement, and we will be with him no matter how long it will take. (Sean's father)

Compared with Sean, Lennon was a talkative and sometimes aggressive young man. He was 27 when entered the Base and had stayed at home playing online games for 10 years. Lennon was one of the best students in his school, but he did not do well in the college entrance exam because of online games. After that, he refused to go to any college or go to work. He stayed online day and night, and also drank a lot. He smashed things when he got drunk. Finally, his father made him enter the Base

with the help of the police. He was older than most of the trainees. Besides, he knew a lot and argued well. Thus, he became the opinion leader among the trainees. However, so proud as he was, Lennon also thought about changing.

> I can easily fit myself in the surroundings, although no Internet access bothers me. I know much more than those young kids and I have talent. But it's sad to know that some are afraid to be like me when they are 27. I study everything on my own, you know, everything can be found online, but now I am afraid that I cannot find a job. My family isn't rich and my parents become old now. (Lennon)

Lennon claimed that he had a lot of friends online. However, it was the real community of "younger brothers" in the Base that made him think about his future. Moreover, to make a living might be much more difficult than to become the master-hand in those online games. Similarly, the visit to an orphanage (the Sun Village) taught Leo a good lesson.

> I feel ashamed when I came back from the Sun Village (the orphanage). They are so young and they have to do so many things on their own. I almost cried when I ate the steamed stuffed bun made by them. The money that I spent in playing online games can buy many things for them. (Leo)

Those extra curriculum activities taught the trainees a lot in real life, which cannot be learnt from the virtual worlds. In addition, lectures and outward development activities also taught them many coping strategies and techniques for real-life interpersonal communication. On discharge, almost every trainee would put down the contact information of other trainees and the staff members. Although they might contact with each other on the Internet, they would be definitely different from other e-friends.

Virtual communities: positive/negative

Tim was among those few "diehards" who refused to change in the Base. He stayed in the Base for more than four months, but still played his favorite *Dungeon & Fighter* (*DNF*) when he returned home. When he was in the Base, he even made a set of cards with all the characters and game rules memorized by him. In this way, he can play *DNF* with other trainees even without Internet access. He was so angry with

his father for sending him into the Base that he sworn that he would always play online games and let his father support him for the rest of his life. Charles was among the few who played with Tim.

> We are friends because we are both big fans of *DNF*. I'm not that lucky. I have to plan for my future, because my parents won't support me to play online games for the rest of my life. I will be 18 next year. If I continue to be like this, my parents will let me fend for myself. So I plan to be an animation designer. Then I can continue playing games and I can earn money at the same time. (Charles)

Charles started drawing cartoon characters when he was in the Base. He asked the staff members to download some pictures online for him to copy. Different from Tim who immerse himself in his virtual utopia, Charles tried to bridge the virtual world and real life by his career planning.

The Base offered various offline activities to draw the trainees back to the real life. The staff members designed the offline version of many online games. For instance, *Counter-Strike* (*CS*) has been one of the most played action games on the Internet for quite a long time. Most of the trainees in the Base knew the game. In the Base, the game was made even more realistic. The trainees were provided with laser toy guns and they had to work in teams and think what they were doing to achieve their goals. With such a realistic military action game, the trainees thought the offline version was more enjoyable than the virtual one. Harry was called "the Lion King" online, while he was happy to find that he could still be the Lion King in real life.

> Have you played the real version of *CS*? It's really cool! You know what, you can really touch the gun and feel the weight. We all like it. I hope we can play it more often, ha-ha. (Harry)

7.5 DISCUSSION

The dual attitudes toward the Internet in people's lives manifest in a context of dependency (McMillan & Morrison, 2006). Clinicians and therapists in China have reported a growing number of clients addicted to the Internet. As for the majority of

Internet users, they are capable of limiting the Internet use to reasonable levels, but it can become problematic for those who are more vulnerable, such as adolescents, rendering them at risk for developing Internet compulsivity. The emergent Internet addiction has been reported to ruin young people's lives, academic performance, families, and other real life relationships.

In this study, the researcher explored the narratives about personal experiences of parents who claimed to have children addicted to the Internet. When asked what it means to be addicted to the Internet, the parents repeatedly framed their stories as sad ones. Consistent with the literature, the sad stories evolved around the themes excessive Internet use, academic failure, family conflicts and wild ideas. Framing stories as sad can also be understood as comments about negative emotions connected to problematic Internet use. The findings revealed that people addicted to the Internet suffer the standard problems associated with addictive behaviors.

The narratives in this study provided insights into ways of feeling, relating and acting in the interviewees' personal experiences with child addicted to the Internet. Therefore, there can be implications of this study for media effects on young people, parental mediation, and social regulation of new media technologies. First, the narratives were told as sad stories about adverse consequences for Internet users and the family. These stories may catch our attention to think about the dark side of new media technologies, such as the Internet. Especially for adolescents, they were repeatedly narrated as more vulnerable to be addicted to the Internet. Second, as a location marker, "Internet café' was repeatedly mentioned in the narratives about Internet addiction, which is consistent with the findings in Study II that Internet café as a venue for Internet access can be problematic. In addition, "online games" was also juxtaposed with Internet addiction in the stories, which echoed results in Study

II as well. Third, the stories also highlight the role of parents in mediating children's Internet use. The parents are usually among those who are firstly aware of the negative influences of Internet use on the child's lives. However, many parents interviewed in this study talked about the quandary of lacking for coping strategies. Interviews of the therapists and counselors also indicated many communication problems in these families. Therefore, besides family therapy, parent training was also provided in the Base. Social skills training programs that taught basic and effective interpersonal communication techniques were offered to both the children and their parents in order to improve family communication. Moreover, those parents who stayed with their in-patient children in the clinic also formed groups to share concerns and learnt from one another.

After noticing the signs of Internet addiction, the parents brought their children to the clinic for professional treatment. The five-in-one program in the Base was discussed, which was used systematically restore balance in different domains. Quotations from informants are used to support or illustrate insights relevant to each sphere. Psychotherapies were provided to cope with individual, family, and interpersonal problems. Military training and physical exercises were offered for better physical fitness, regular rhythm of life and less problem behaviors. Medication was for those trainees who also suffered from other illnesses. Lectures and other activities aimed to teach the young people and their parents more communication techniques and coping strategies. Additionally, various social experiences helped those young people keep balance between real communities and virtual worlds. During hospitalization, not only psychotherapists but other personnel and even other trainees could help the young people work toward recovery through various group activities.

For adolescents and young adults, the family plays a key role in their Internet use. In general, a theme that was common to many of the aforementioned efforts was improvement of family communication patterns, so as to restore the parent-child relationship and other dynamics within family. Especially after the young people being discharged out of the clinic, they may go back to previous schedule of daily life and family has to continue playing the key role to maintain the therapeutic effects obtained in the clinic. Based on the findings in this study, multiple strategies are required to promote family health, happiness and harmony, which can provide a good family environment for less problematic Internet use of the children. The study aimed to provide an opportunity for academics, health care professionals, teachers, social workers, community leaders, NGOs, members from parent school associations, government officials, politicians, and the general public to better understand the signs of Internet addiction and the preventive responses. In the future, further studies may be conducted to explore and discuss more practices and interventions to empower families for young people's new media use, and to use communication strategies and preventive approaches to promote societal harmony through families.

CHAPTER EIGHT

CONCLUSION

8.1 INTRODUCTION

As an emerging health risk, Internet addiction has caused wide public concern in many places of the world. Previous studies were conducted by researchers from various disciplines. Inspired by the theory and analysis of risk, the research explored the construction of Internet addiction as a new risk in the Chinese context by examining the staging of and the coping with this risk. This chapter provides a conclusion to the dissertation. The key objective of this chapter is to present conclusions from the findings of this research, based on the conceptual framework and the research question proposed accordingly. Another objective is to provide the theoretical contributions that the current research has made to the risk analysis in general and the studies of Internet addiction in particular. The third objective is to illustrate the implications of findings for Internet users, families, Internet addiction clinics, governmental policy makers, Internet related industries, and other relevant research and teaching institutions. The fourth objective is to discuss the limitations of this research and offer some suggestions for further studies.

Following this introductory section, Section 8.2 outlines the conceptual framework and research questions. Section 8.3 summarizes the investigations of the staging of Internet addiction in newspaper reports in China; while Section 8.4 gives a brief on the coping with Internet addiction at the professional and familial levels regarding the high-risk groups. Section 8.5 and Section 8.6 discuss the theoretical contributions and practical implications respectively. Section 8.7 explains the limitations of this research and proposes further opportunities for research. Section 8.8 presents a

summary to the chapter.

8.2 CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS

Based on the reviewed literature and related studies, when it comes to look into the construction of risk, the two essential factors are the staging and the coping (Beck, 1992). This research investigated the staging of Internet addiction as a risk in media coverage and the coping with it at individual, familial and professional levels among the high-risk groups. The conceptual framework is presented in Figure 2.1. Accordingly, following research questions were proposed: (1) how is the staging of Internet addiction in the Chinese newspaper, in terms of amount, trend and reporting frames? (2) what is the profile of the Internet-dependent group and what are the predictors identified for Internet addiction and the relevant variables? (3) what are the signs of Internet addiction and how do the families cope with Internet addiction with professional intervention?

8.3 THE STAGING OF INTERNET ADDICTION IN CHINESE NEWSPAPER

The first newspaper report of Internet addiction appeared in 1998 in the Region of Greater China. This study examined the newspaper articles from 1998 to 2009 retrieved from Wisenews by employing a content analysis. Combining the diffusion approach (Rogers, 2003) and the functions of frames (Entman, 1993), the study depicted an overall and detailed picture of Internet addiction in media coverage and the relevant variations over time. The study also found that the news reportage of Internet addiction in Hong Kong showed an interesting resemblance to the media coverage in Mainland China.

The trend of the twelve-year newspaper reportage of Internet addiction in

Mainland China resembled the S-shaped curve of diffusion of innovation theory with three phases, i.e. awareness-knowledge, attitude-forming, and attitude-confirmation. The framing devices were examined to find how they were used to fulfill the four functions: definition, evaluation, cause, and solution. Multiple reporting attributes were also adopted to facilitate different functions of frames, such as metaphors, visual images, and headlines.

Specifically, almost half in the first 10 pages (49.8%), Internet addiction was reported as a risk issue in the overwhelming majority of the newspaper articles (99.3%), with males and adolescents or young adults being regarded as the high-risk groups. Various negative outcomes were mentioned due to Internet addiction, such as academic or work failure, physical problems, psychological problems, delinquency or crimes, and other social problems. As for causes of Internet addiction, mainly the news reports pointed to family reasons, social environment, and personal reasons. Moreover, online gaming and Internet café were highlighted as problematic to lead to Internet addiction. Regarding the solutions, the news articles suggested professional treatments, family support, governmental regulations or policies, and self-help programs.

In this way, mass media in China accomplished the staging of Internet addiction as an emerging risk by helping the public become aware of, know and form attitude toward Internet addiction. By examining both the amount and trend of the news reports, as well as the relevant frames, the findings revealed that the diffusion of the idea of Internet addiction as a new risk might be still underway, due to the still growing Netizen population and some rethinking about the Internet addiction issue in China. To certain extent, the media try to shape public's interpretation of a given issue and meanwhile mirror public opinion (Schoenbach & Becker, 1995; Zhou &

Moy, 2007). Therefore, this study illuminated how the idea of Internet addiction as a new risk was promoted in Mainland China. Moreover, the experts as opinion leaders were frequently mentioned in the news reports, which led the research to move on to the coping with Internet addiction.

8.4 THE COPING WITH INTERNET ADDICTION

With Internet addiction widely recognized as a new risk, various solutions are proposed and offered. Among them, professional coping and family coping are the most important, since adolescents and young adults constitute the high-risk group. Based on the data collected from one of the earliest and largest Internet addiction clinics in Mainland China, this research investigated the professional and family coping with Internet addiction. Among a variety of educational, psychological, and medical intervention strategies which have been developed and used in China, the findings in AMC may just provide one model within clinical setting, but the results did echo with the findings of the content analysis of media coverage.

8.4.1 Professional coping

The investigation of the professional coping in this research focused on two aspects: the clinical data of the high-risk group and the treatments provided by the clinic. The data were collected from the Chinese Youth Psychological Development Base (the Base). Opened in 2005, the Base which is affiliated to the Addiction Medicine Center (AMC) in the General Hospital of Beijing Military Region, is one of the earliest and largest Internet addiction clinics in Mainland China, and its director Dr. Tao is the person who proposed the very controversial but quite influential Internet addiction diagnostic criteria.

Based on the secondary clinical data collected by the professionals in the Base, this study evaluated the clinical profile and identified some influential factors associated with Internet addiction and related social and psychological well-being. This study revealed that Internet addiction was associated with other risk/problem behaviors. The findings suggested that family communication and specific personality traits significantly predicted Internet addiction, risk/problem behaviors and psychological well-being. Therefore, special attention should be paid to those young people with specific personality traits, and Internet addiction should be intervened and prevented by being grouped with other risk/problem behaviors and by adopting the family-based approach. Besides, this study provided a more detailed picture of respondents' use of the Internet by looking into multiple scopes of Internet connectedness. As one of the most popular online activities, online gaming was found to have great influence in the development of Internet addiction and other risk/problem behaviors, as well as negative impact on respondents' academic performance and psychological well-being. The findings also confirmed the results of previous content analysis that one reason some individuals spend too much time on the Internet is due to some real-life problems, such as inner conflicts rooted in personality traits and poor family communication environment. However, excessive use of the Internet caused them more negative outcomes, such as Internet addiction, risk/problem behaviors, academic-related problems and psychological distress. Therefore, treatments for Internet addiction should take all these factors into consideration, rather than treat them separately.

As for treatments, investigations were carried out based on ethnographic data collected in the specific clinical setting. The researcher went through one whole course of treatments by staying with the in-patient young people in the Base for more

than three months continuously. During their stay in the clinic, the "trainees" did not have access to the Internet, mobile phones, MP3/MP4 players, or any other new media. Generally, the Base provides an in-patient "five-in-one" rehabilitation program, including behavior adjustment, psychotherapy, medication, educational technique, and social experience. Specifically, each elements of the program was directed toward different factors associated with Internet addiction. Daily schedule was strictly followed to help the trainees restore their disturbed rhythm of lives. Military training and physical exercises were provided to discipline the young people and help them keep fit. Different combinations of various therapies was designed by the psychotherapist in charge of the case, which usually included individual therapy, group therapy, family therapy, and Morita therapy or other psychotherapeutic techniques if necessary. These therapies helped the trainees to solve personal, interpersonal, and family problems. As for those cases who suffered from anxiety, depression, ADHD (Attention Deficit Hyperactivity Disorder) or other disorders, corresponding medication was provided as well. Pedagogical sessions were open to both the trainees and parents with knowledge of Internet addiction, communication skills, and parent-child activities. Extra curriculum activities were provided every other month, such as visit to orphanage, gerocomium, drug rehabilitation center, and museums, which offered the young people more real-life social experiences. One element needs to be highlighted is that at least one of the parents of the trainee was required to stay in the clinic together with the child. During their stay, staff members made every effort to help them restore family harmony, which can maintain the therapeutic effects after their leaving the clinic. Although the long-term effects still need to be followed up, the results showed significant improvement in terms of psychological well-being on discharge compared to the situation on admission.

8.4.2 Family coping

As for the coping with Internet addiction, family turned out to be a crucial element. Based on the interviews, parents were usually the first to notice the signs of Internet addiction from the changes of their children's daily lives. When sending their children to the clinic, parents also served as important part in the diagnostic interviews.

When asked what Internet addiction means to them, the parents repeatedly framed their stories as sad ones. By exploring the narratives about personal experiences of the parents who claimed to have children addicted to the Internet, consistent themes were found, including keeping increasing Internet use, struggling between work and play, having family conflicts, and getting lost in cyberspace. Their personal experiences showed the integration of the Internet into young people's lives. However, some may develop a growing dependency on the Internet, which can lead to conflicts in the primary life domains, such as identity, family, and other real-life communities. Therefore, most of the time, it is the family members rather than the high-risk groups who turn to professionals for help.

According to the clinical records, poor family communication and family conflicts are usually the negative outcomes of Internet addiction, but they may also be the causes for excessive use of the Internet. Hence, family is regarded as the break-through point for the whole recovery process of the Internet-dependent children. The clinic under study provided various treatments and activities to help restore family harmony. It turned out that those trainees whose parents worked closely with staff members for the children's recovery made substantial changes, especially for the only children. Family therapy helped family members understand

one another better. Various parent-child activities provided more interaction between the two generations and different scenarios for them to work out. The trainees and their parents learnt a lot of communication skills, and relevant knowledge from the pedagogical sessions, lectures, and presentations. The parents of those in-patient children also grouped to form a parent committee in order to share and learn from one another. Based on the assessment reports on discharge and the follow-up investigation, family communication is the key to the consolidation of the effectiveness of the rehabilitation program and the prevention of relapse after their leaving the clinic.

8.5 THEORETICAL CONTRIBUTIONS

As a study on risk issue in general and on Internet addiction with the Chinese context in particular, the theoretical contributions of this research can be understood from the following aspects:

Firstly, the findings of the three empirical studies constituting this research provided both the lived experience of risk and relevant sociological understanding which is insufficient in risk analysis. Arguably, there is a lack of fit between the theoretical discourse of risk and the empirical research discoveries, so in many instances theoretical narratives on "risk and modernity" appear "far removed from the social realities of everyday life, like castles in the air" (Irwin, Simmons & Walker, 1999; Wilkinson, 2001, 2010, p. 59). In this research, Internet addiction as en emerging risk and the relevant issues, specifically both the staging of and the coping with this new risk, were explored within its specific socio-cultural context. Therefore, the findings can serve more to better understand the relationship among risk, technology, health and everyday life, the role of media in generating health concerns,

the collapse of the traditional categories like family, and the emerging professional institutions for restoring traditional support networks and re-embedding individuals in new types of social commitment. Specifically, different from many previous arguments on risk society, this research rediscovers the importance of family. When traditional binds of social solidarity have been weakened along with the intensification of processes of individualization, modernization and globalization, family seems to be still crucial for the coping with risks in certain social-cultural settings (Wilkinson, 2010). Nevertheless, possible changes in the meaning of family should be noticed, so the new family style for cyberkids might be called "cyberfamily", different from the traditional familes.

Secondly, this research further enriches the Internet addiction literature. As a growing field of research in recent years, Internet addiction has called international attention. Different from previous Internet addiction studies, this research provides an overview of the staging of Internet addiction by examining the Chinese newspaper articles of the past twelve years, which fills a gap in Internet addiction research for lacking such macro-level studies. Moreover, this research further investigated the high-risk group by evaluating the profile and identifying relevant risk factors. Individuals with specific personality trait were found to be more vulnerable. The findings suggest that Internet addiction may be grouped with other risk/problem behaviors by sharing similar personal and family reasons as well as negative outcomes. Consistent with previous studies, Internet connectedness as a multi-dimensional concept was found to be more in conducive in the investigation of Internet addiction. In addition, online gaming was found to play a significant role in the development of Internet addiction and pose great threat to the well-being of Internet users. Based on the data collected in the clinical setting, the results are

valuable for the theoretical development in Internet addiction research.

Thirdly, in a broad sense, this research may also contribute the research tradition of media effects by examining the social aspects of new media technologies. Different from technological deterministic perspective, this research investigate various social scopes by including the concept like Internet connectedness. This research also showed the public concerns and the role of parental mediation in young people's Internet use, consistent with previous communication studies on television and video games. The analysis of relevant experiences in informants' daily life demonstrated a complexity and layering effect which has previously been limited in the literature.

Fourthly, the study of the staging of Internet addiction as a new risk in media reportage provided an interesting case for diffusion of innovation theory and the functions of frames. By adopting content analysis of the retrieved archival data, this research can trace the changes over time, which cannot really be fulfilled by survey data based on recall in most of the diffusion studies. Furthermore, by examining the frames provided a detailed picture of the role of mass media in staging health risk and the variations in the process.

Fifthly, this research rediscovers and highlights the role of family communication, which echoes with previous studies on the importance of parental mediation in young people's media use (Lievrouw & Livingstone, 2006; Livingstone, 2002a, 2002b, 2009; Livingstone & Drotner, 2008; Livingstone & Haddon, 2009). Based on comparison of the findings from three specific studies by using triangulation, consistent results were yielded that family communication environment plays an important role in the development and recovery of Internet addiction. Although family communication might be still a burgeoning area of communication studies,

this research suggests that family communication should be regarded as an important part of the communication research landscape. As for recovery of Internet addiction, no matter whether professional treatments are tried or not, family-based approach should be considered for the coping strategies.

Sixthly, this research is a useful attempt for going beyond the dichotomy between realist-absolutist and social constructionist-relativist approaches. To transgress the borders between the two approaches, this research synthetically wove together different analyses of risk, from macro level to micro level, based on both quantitative and qualitative data.

Finally, this research examined Internet addiction as a new risk within the Chinese context by utilizing variables from previous studies conducted primarily in the Western world. The findings of this research should be useful to researchers studying cross-cultural communication and media behavior. Moreover, this research may help to formulate conceptual tools linked to the factors crucial for the sociological theory of risk in cultures outside the Western societies.

8.6 PRACTICAL IMPLICATIONS

Considering the practical implications of the findings, this research highlights the importance of studying risk issue in the social context where it occurs. The specification of conditions under which risk takes place is significant so that remedial and preventive actions can be made accordingly. Thus, the meaning of the findings should also be understood in terms of the following practical implications:

Firstly, although this research is a study on Internet addiction in the Chinese context, it provides various insights which can be valuable for prevention, treatment and recovery of Internet addiction. The findings reported in the preceding chapters

show that personality traits can be influential in predicting Internet addiction, risk/problem behaviors and psychological distress. Hence, special attention needs to be paid to the high-risk groups. Moreover, intervention strategies for Internet addiction may also be provided with other risk/problem behaviors.

Secondly, based on the findings of this research, the Chinese family is related directly to children's excessive Internet use and risk/problem behaviors and is also the main coping agency. Parental relationship and parenting styles were found to be associated with IAD symptoms, academic performance and psychological well-being among the high-risk adolescents and young adults. It is true especially for so many only-children and more young adults who live longer with their parents in contemporary China. Thus, parents should pay more attention to the parental mediation of their children's media use and the affective quality of the parent-child relationship, which can be equally important for bigger population besides the high-risk group.

Thirdly, based on intimate and detailed analysis in the clinical setting, this research depicted the high-risk profile and treatment available in an Internet addiction clinic. The findings and insights therefore are clearly of great value. This research found significant improvement, at least in psychological well-being among the in-patient young people. According to the interviews, it may be assumed that those in-patient days are the process of new family making for both the trainees and their parents. The collective wisdom of the professionals in such a clinic might be worth using for reference to cope with Internet addiction in broader social settings. Current professional treatments for Internet addiction provide many valuable possibilities and insights, thus further evaluation of the treatments based on the findings of this research can be quite useful for policy recommendation.

Fourthly, the content analysis of media coverage of Internet addiction may offer some insights into the staging of risk issue. Mass media play an important role to sound social alarms. The investigation of the trend and variations of newspaper reports over the last twelve years shows a lot about how mass media mirror the public concern and promote the idea of this new risk.

Finally, the findings provided by this research can be quite valuable for governmental regulation. For example, online gaming and Internet café patronage were found to be closely related to Internet addiction, risk/problem behaviors and academic-related problems. Therefore, necessary regulation may be in need in the Internet-related entertainments and industries. In addition, as for the role of family in modern societies, governments can also encourage change.

8.7 LIMITATIONS AND SUGGESTIONS FOR FUTURE STUDIES

Besides the theoretical contributions and practical implications, the findings of this research should be interpreted in the light of the following limitations:

Firstly, as for the staging of Internet addiction as an emerging risk, this research examined the media coverage, which is not enough by itself. Given the impact of mass media on public opinion, further studies should be conducted to investigate the public understanding of the risk. Future studies on the relationship between the media reportage and public opinion of Internet addiction are also in need, especially comparisons with the results based on survey among the Internet users (e.g., Jiang & Leung, 2011). Additionally, more in-depth comparative studies based on specific newspaper or several newspapers might be conducted to further reveal the differences among different newspapers, rather than examine them altogether.

Secondly, as illustrated in Figure 2.1, it is inappropriate to generalize from such a

study on Internet addiction of the Chinese subpopulation to all other populations in Mainland China or around the world. Although the clinic under study is one of the earliest and largest Internet addiction clinics in Mainland China, the in-patient high-risk young people are still small part of the relevant population, which might be from the upper middle class, and the intervention strategies provided in AMC are not the only model. Therefore, this research should be replicated with other samples and refined instruments in order to more conclusively derive inferences for cross-cultural theory.

Thirdly, current overlapping theoretical accounts should be integrated to understand the mechanisms through which psychological well-being and Internet use impact each other and develop over time (Kim, LaRose, & Peng, 2009). Whether psychological distress is the cause preceding the development of Internet addiction or if it is a consequence still calls for further study. Furthermore, studies in the future need to examine whether Internet addiction is part of developmental problems during adolescence and young adulthood, because the growing pains might act as unmeasured intervening variable for the development of Internet addiction.

Fourthly, part of the data analysis was based on secondary data, which were collected by other researchers. Therefore, as for these data, the researcher of the present study could not impose any control over the research design and data collection. Reliability on some measures was low (less than .70). In this exploratory research, hypotheses were also generated for future efforts, and some preliminary causal associations were identified as well. However, to established causality, longitudinal data are needed in following studies.

Fifthly, further studies may do well to include other social agents besides mass media, family, and professionals. A complete theoretical mapping needs to look at

other sources of influence. The school, peer groups and other significant sources of influence should be studied simultaneously.

Sixthly, this research did not go that further to examine the power relations in the ongoing formation of Internet addiction as a new health risk in China. Based on the results of this research, future studies can be conducted to investigate various power relations at play within the process, such as those between parents and children, clients and professionals, and the state and the public.

Finally, this research was conducted in the urban Chinese context. Comparative studies are needed to find whether there are differences within China and across different social contexts. Specifically, further comparisons can be made with examination of media coverage of Internet addiction in Western countries, and the high-risk individuals in other developing and developed countries.

8.8 SUMMARY

Children have often been the subject of media research (Williams, Rice, & Rogers, 1988). Historically, there are mythologies about new media technologies and mythological constructions of childhood. Similar stories have been repeated to the Internet. This research examined the emerging risk of Internet addiction with the Chinese context by investigating the staging in mass media and the relevant coping. As illustrated in Figure 2.1, this research may only reveal the tip of the iceberg, but the exploration of a new area might also benefit from this kind of detailed analysis of just subpopulation (McQueen & Knussen, 2002). By including more social agents into analysis, this research attempts to address risk issue which can be very obscure in the reviewed literature of risk theory. The results can enrich our understanding of Internet addiction as a burgeoning and complex area of inquiry. The findings can be

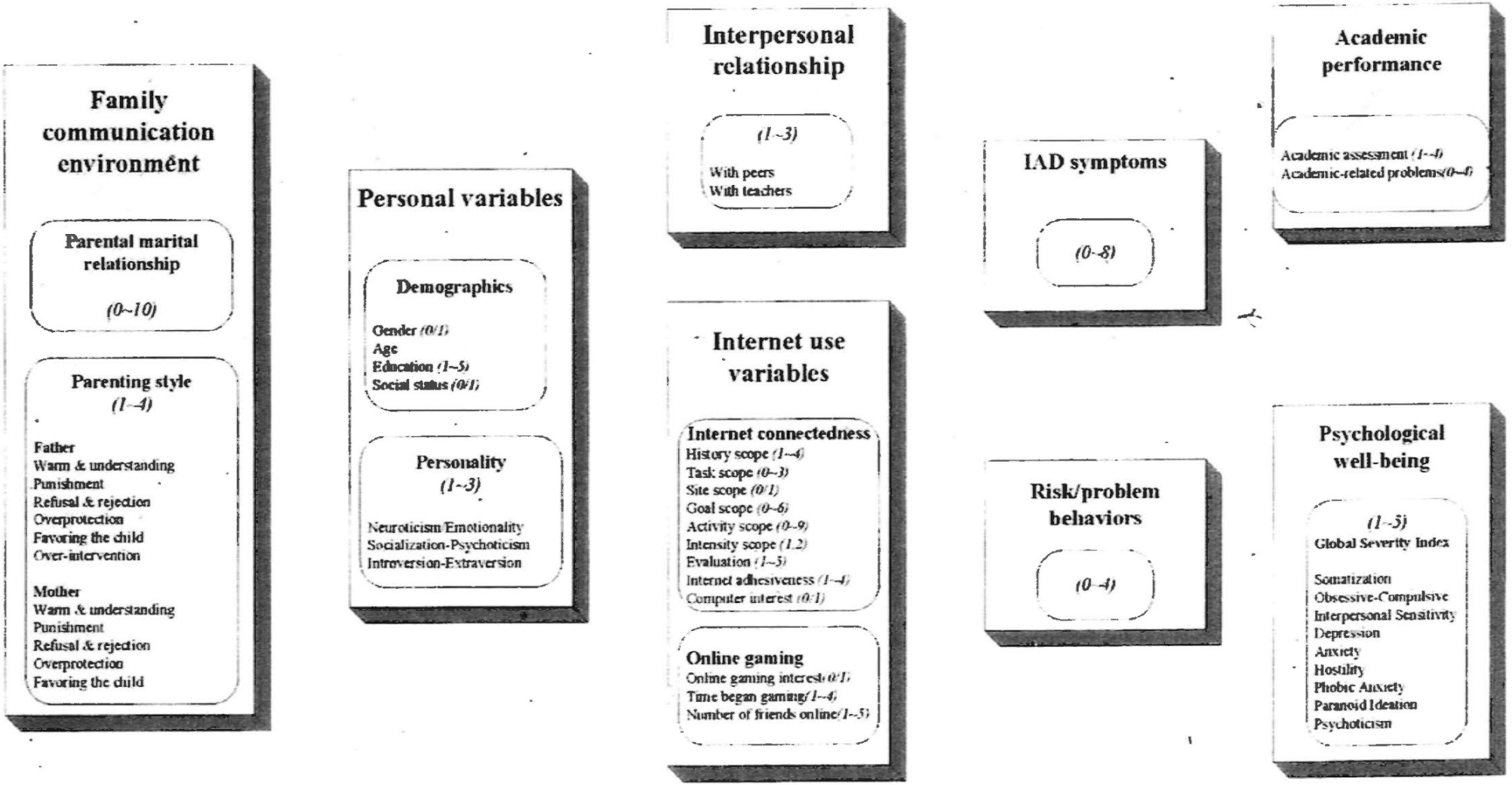
significant, meaningful, informative, and even representational in the light of theoretical contributions and practical implications. Family was refound as crucial social category to cope with risk in contemporary modern society, so prevention and recovery of Internet addiction can take place at home as well as in professional institutions. Limitations are also issued in this chapter with suggestions for further studies.

APPENDICES

Appendix 1 Coding Scheme for Study I

Variable			Coding
Theme			Internet addiction: yes=1; no=0.
	Source		National newspaper=1; local newspaper=2; governmental bulletin or industrial newspaper=3.
Prominence:	*Placement*		First 10 pages=1; not first 10 pages=0.
	Length	*headline*	Word count of the headline.
		body text	Word count of the body text.
Headline			With Internet addiction or not: yes=1; no=0.
Context			Mainland China=1; abroad=2; both home and abroad =3.
Visual images			With visual images or not: yes=1; no=0.
Metaphor			drugs/drug addiction=1; alcohol/alcoholics=2; pathological gambling=3; more than one metaphor aforementioned=4; not used=0.
	Risk		Yes=1; no=0; hard to say=2.
Definition:	*Medical issue*		Yes=1; no=2; not mentioned=0.
	Illness		Yes=1; no=2; not mentioned=0.
	Symptoms		Mention symptoms or not: yes=1; no=0.
Causal	*Cause*		Mention cause as: Personal reasons=1; family reasons=2; schooling or education=3; social environment=4; the characteristics of the Internet=5;
Interpretation:			multiple causes with more than one aforementioned=6; not mentioned=0.
	Scapegoat		Mention scapegoat as: Internet café=1; online game=2; both Internet café and online game=3; other online activities=4; not mentioned=0.
	High-risk gender group		Male=1; female=2; not mentioned or both mentioned=0.
	High-risk age group		Adolescents and young adults (under 35)=1; other age groups=2; not mentioned=0.
Evaluation			Mention harm as: Academic or work failure=1; physical problems=2; psychological problems=3; delinquency or crimes=4; other social problems=5; multiple problems with more than one aforementioned=6; not mentioned=0.
	Solution		Mention solution as: self-help program=1; family support=2; professional help=3; governmental regulation or policies=4; multiple solutions
Treatment			with more than one aforementioned=5; not mentioned=0.
Recommendation:	*Treatment*		Mentioned with support=1; mentioned with doubt=2; mentioned with neutral attitude=3; not mentioned=0.

Appendix 2 Conceptual Mapping of Study II



Appendix 3 SCL-90 questionnaire

Below is a list of problems and complaints that people sometimes have. Please read each one carefully. After you have done so, select one of the numbered descriptors that best describes "How much that problem has bothered or distressed you during the past week, including today." Circle the number in the space to the right of the problem and do not skip any items.

	How much were you bothered by:	*Not at all*	*A little bit*	*Moderately*	*Quite a bit*	*Extremely*
1	Headaches	1	2	3	4	5
2	Nervousness or shakiness inside	1	2	3	4	5
3	Unwanted thoughts, words, or ideas that won't leave your mind	1	2	3	4	5
4	Faintness or dizziness	1	2	3	4	5
5	Loss of sexual interest or pleasure	1	2	3	4	5
6	Feeling critical of others	1	2	3	4	5
7	The idea that someone else can control your thoughts	1	2	3	4	5
8	Feeling others are to blame for most of your troubles	1	2	3	4	5
9	Trouble remembering things	1	2	3	4	5
10	Worried about sloppiness or carelessness	1	2	3	4	5
11	Feeling easily annoyed or irritated	1	2	3	4	5
12	Pains in heart or chest	1	2	3	4	5
13	Feeling afraid in open spaces or on the streets	1	2	3	4	5
14	Feeling low in energy or slowed down	1	2	3	4	5
15	Thoughts of ending your life	1	2	3	4	5
16	Hearing voices that other people do not hear	1	2	3	4	5
17	Trembling	1	2	3	4	5
18	Feeling that most people cannot be trusted	1	2	3	4	5
19	Poor appetite	1	2	3	4	5
20	Crying easily	1	2	3	4	5
21	Feeling shy or uneasy with the opposite sex	1	2	3	4	5
22	Feeling of being trapped or caught	1	2	3	4	5
23	Suddenly scared for no reason	1	2	3	4	5
24	Temper outbursts that you could not control	1	2	3	4	5
25	Feeling afraid to go out of your house alone	1	2	3	4	5
26	Blaming yourself for things	1	2	3	4	5
27	Pains in lower back	1	2	3	4	5
28	Feeling blocked in getting things done	1	2	3	4	5
29	Feeling lonely	1	2	3	4	5
30	Feeling blue	1	2	3	4	5
31	Worrying too much about things	1	2	3	4	5
32	Feeling no interest in things	1	2	3	4	5

SCL-90 (continued)

	How much were you bothered by:	***Not at all***	***A little bit***	***Moderately***	***Quite a bit***	***Extremely***
33	Feeling fearful	1	2	3	4	5
34	Your feelings being easily hurt	1	2	3	4	5
35	Other people being aware of your private thoughts	1	2	3	4	5
36	Feeling others do not understand you or are unsympathetic	1	2	3	4	5
37	Feeling that people are unfriendly or dislike you	1	2	3	4	5
38	Having to do things very slowly to insure correctness	1	2	3	4	5
39	Heart pounding or racing	1	2	3	4	5
40	Nausea or upset stomach	1	2	3	4	5
41	Feeling inferior to others	1	2	3	4	5
42	Soreness of your muscles	1	2	3	4	5
43	Feeling that you are watched or talked about by others	1	2	3	4	5
44	Trouble falling asleep	1	2	3	4	5
45	Having to check and double-check what you do	1	2	3	4	5
46	Difficulty making decisions	1	2	3	4	5
47	Feeling afraid to travel on buses, subways, trains	1	2	3	4	5
48	Trouble getting your breath	1	2	3	4	5
49	Hot or cold spells	1	2	3	4	5
50	Having to avoid certain things, places, or activities because they frighten you	1	2	3	4	5
51	Your mind going blank	1	2	3	4	5
52	Numbness or tingling in parts of your body	1	2	3	4	5
53	A lump in your throat	1	2	3	4	5
54	Feeling hopeless about the future	1	2	3	4	5
55	Trouble concentrating	1	2	3	4	5
56	Feeling weak in parts of your body	1	2	3	4	5
57	Feeling tense or keyed up	1	2	3	4	5
58	Heavy feelings in your arms or legs	1	2	3	4	5
59	Thoughts of death or dying	1	2	3	4	5
60	Overeating	1	2	3	4	5
61	Feeling uneasy when people are watching or talking about you	1	2	3	4	5
62	Having thoughts that are not your own	1	2	3	4	5
63	Having urges to beat, injure, or harm someone	1	2	3	4	5
64	Awakening in the early morning	1	2	3	4	5
65	Having to repeat the same actions such as touching, counting, washing	1	2	3	4	5
66	Sleep that is restless or disturbed	1	2	3	4	5
67	Having urges to break or smash things	1	2	3	4	5
68	Having ideas or beliefs that others do not share	1	2	3	4	5
69	Feeling very self-conscious with others	1	2	3	4	5
70	Feeling uneasy in crowds, such as shopping or at a movie	1	2	3	4	5

SCL-90 (continued)

	How much were you bothered by:	*Not at all*	*A little bit*	*Moderately*	*Quite a bit*	*Extremely*
71	Feeling everything is an effort	1	2	3	4	5
72	Spells of terror or panic	1	2	3	4	5
73	Feeling uncomfortable about eating or drinking in public	1	2	3	4	5
74	Getting into frequent arguments	1	2	3	4	5
75	Feeling nervous when you are left alone	1	2	3	4	5
76	Others not giving you proper credit for your achievements	1	2	3	4	5
77	Feeling lonely even when you are with people	1	2	3	4	5
78	Feeling so restless you couldn't sit still	1	2	3	4	5
79	Feelings of worthlessness	1	2	3	4	5
80	Feeling that familiar things are strange or unreal	1	2	3	4	5
81	Shouting or throwing things	1	2	3	4	5
82	Feeling afraid you will faint in public	1	2	3	4	5
83	Feeling that people will take advantage of you if you let them	1	2	3	4	5
84	Having thoughts about sex that bother you a lot	1	2	3	4	5
85	The idea that you should be punished for your sins	1	2	3	4	5
86	Feeling pushed to get things done	1	2	3	4	5
87	The idea that something serious is wrong with your body	1	2	3	4	5
88	Never feeling close to another person	1	2	3	4	5
89	Feelings of guilt	1	2	3	4	5
90	The idea that something is wrong with your mind	1	2	3	4	5

Symptom dimensions:

	Symptom	*Items*	*alpha (in)*	*alpha (out)*
1	Somatization (12 items)	1, 4, 12, 27, 40, 42, 48, 49, 52, 53, 56, 58.	.88	.87
2	Obsessive-Compulsive (10 items)	3, 9, 10, 28, 38, 45, 46, 51, 55, 65.	.85	.85
3	Interpersonal Sensitivity (9 items)	6, 21, 34, 36, 37, 41, 61, 69, 73.	.86	.84
4	Depression (13 items)	5, 14, 15, 20, 22, 26, 29, 30, 31, 32, 54, 71, 79.	.90	.88
5	Anxiety (10 items)	2, 17, 23, 33, 39, 57, 72, 78, 80, 86.	.89	.82
6	Hostility (6 items)	11, 24, 63, 67, 74, 81.	.85	.80
7	Phobic Anxiety (7 items)	13, 25, 47, 50, 70, 75, 82.	.80	.79
8	Paranoid ideation (6 items)	8, 18, 43, 68, 76, 83.	.74	.75
9	Psychoticism (10 items)	7, 16, 35, 62, 77, 84, 85, 87, 88, 90.	.81	.79
10	Others (7 items)	19, 44, 59, 60, 64, 66, 89.	.73	.70

Source: (Derogatis, Lipman, & Covi, 1973).

Appendix 4 Socio-demographic profiles of the informants for Study III

Trainee informants:

Informant	Sex	Age	Education background	Time in AMC
Charles	Male	17	High school (suspending)	112 days
Chris	Male	23	High school (graduate)	88 days
Harry	Male	14	Middle school (suspending)	96 days
John	Male	18	High school (drop out)	51 days
Lennon	Male	27	High school (graduate)	91 days
Leo	Male	18	High school (suspending)	95 days
Leon	Male	16	High school (suspending)	92 days
Mathew	Male	15	Middle school (suspending)	108 days
Neil	Male	14	Middle school (suspending)	95 days
Sean	Male	16	High school (suspending)	101 days
Shirley	Female	17	High school (suspending)	90 days
Steve	Male	14	Middle school (suspending)	94 days
Terry	Male	15	Middle school (suspending)	93 days
Tim	Male	16	High school (drop out)	122 days

Parent informants:

Informant	Sex	Age	Education background	Occupation
Charles's mother	Female	39	Bachelor's degree	Accountant
John's mother	Female	44	High school graduate	Businesswoman
Neil's mother	Female	38	High school graduate	Housewife
Sean's father	Male	40	Bachelor's degree	Policeman
Shirley's mother	Female	48	Associate degree	Office clerk
Steve's mother	Female	41	High school graduate	Housewife
Terry's mother	Female	37	Associate degree	Part-timer

Staff informant:

Informant	Sex	Age	Education background
Chris's psychotherapist	Female	27	Master's degree

(Note: Pseudonyms are used to protect informants' privacy.)

Appendix 5 Morita therapy

Morita therapy is a Buddhist-based treatment developed in Japan by Shoma Morita (Reynolds, 2001). Originally developed in Japan, Morita therapy has been applied successfully in many other countries (Morita, 1998). Currently, Morita therapy is being practiced on an in-patient basis in many hospitals and clinics (Moodley & West, 2005; Reynolds, 2001). Almost two-thirds of the patients treated in Moritist clinics and hospitals are in their teens and twenties (Moodley & West, 2005; Reynolds, 2001).

Morita psychotherapy aims to teach the patient or client to accept his/her symptoms as part of everyday reality and make the patient or client learn to live a constructive life in spite of feelings of shyness, anxiety, tension, and fears (Reynolds, 2001). Briefly, the chief characteristics of Morita therapy include absolute isolated bed rest and guided work therapy (Reynolds, 1976, 2001).

As a highly structured form of residential treatment, Morita therapy is comprised of four consecutive phases, with each phase lasting about five to seven days.(Morita, 1998). The initial stage consists of isolation and rest. Absolute isolated bed rest involves a week of bed rest with no reading, writing, television, or other diversions (Reynolds, 2001). The patient or client must lie alone with his/her own thoughts and feelings (Morita, 1998). Only three meals a day and the carrying out of necessary bodily functions are permitted (Reynolds, 2001). Thus, at the end of the week, the patient or client is quite bored there is no escape from the task of coming to terms with the self (Morita, 1998). The second stage facilitates boredom in the patient or client to make him/her engage more fully in relationships with people, objects, and nature (Morita, 1998). The body rhythms find equilibrium during this stage as well.

At the end of this stage, journal writings are used to begin a written dialogue between the therapist and the patient/client (Morita, 1998). The diary is brought to the weekly therapy sessions for the therapist's inspection and comment (Reynolds, 2001). Through diary guidance the patient/client may gain the ability to analyze his/her daily life into the categories of controllable and uncontrollable aspects (Reynolds, 2001). The patient/client might be asked to describe the events of the recent past in similar fashion. In the third stage, art projects, such as painting, wood carving, or pottery are used to enhance spontaneity (Morita, 1998). Readings may be assigned as well. In the fourth stage, the patient or client is promoted to participate in purposeful activities with other people, and refrain from self-focused talk (Morita, 1998).

In this way, the patient or client in Morita therapy seeks to reduce symptoms and build his/her character through application of three principles, i.e. recognize purpose, accept feelings, and control behavior (Reynolds, 2001). The patient/client perceives what needs to be done in given life situations, and gradually his/her own effort in applying the principles will result in further progress (Reynolds, 2001). When success comes to the patient/client, it is the result of putting what he/she has learnt into practice (Reynolds, 2001). This effort is also the solid behavioral basis for a lasting sense of self-worth (Reynolds, 2001).

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