

# 行政院國家科學委員會補助專題研究計畫成果報告

我國學生電腦網路沈迷現象與因應策略之研究 - 子計畫三

網路沈迷現象的心理需求與適應觀點研究(1/2):

網路成癮、壓力、與心理症狀之關連性探討

**Internet Addiction, Psychological Symptoms, and Stress in Taiwan**

主持人： 陳淑惠 國立台灣大學 心理學系

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#### 中文摘要

本子計畫承續陳淑惠(1998 & 1999)的「網路沈迷現象的心理病理之初探」，旨在進一步探究網路沈迷或成癮現象的可能性，並擴展其可能的心理病理成因之探索角度。本子計畫擬以心理狀態與適應模式的思考架構切入，第一年的研究擬應用中文網路成癮量表(CIAS)篩選出網路沈迷或成癮傾向不同之高低危險群，進而探索沈迷或成癮行為與寂寞感、情緒、壓力、心理症狀等因素之間的關係脈絡。研究初步分析發現：1)高網路成癮傾向者在SCL-90-R之總分較高，同時呈現較多的身體化、強迫性、人際敏感性、與焦慮症狀；2)高網路成癮傾向者比較寂寞與害羞，同時不僅目前經歷較多的壓力，在過去一年裡也經歷較多的壓力。本年度的研究發現，在探討網路沈迷或成癮症之心理病理模式上，進一步指出適應狀態與網路沈迷或成癮傾向息息相關，個體的情緒適

應是一不可輕忽的重要因素。研究的結果也試從文化特性討論在治療、輔導等實務應用上所需考量的角度。

關鍵詞：網路成癮傾向，心理症狀，適應，網路成癮量表，

#### ABSTRACT

The present paper examines the group differences of psychological symptoms, stress, loneliness, and shyness among three groups of college students with various degree of risk for Internet addiction in Taiwan. CIAS\_R, SCL-90-R, UCLA Loneliness Scale, Shyness Scale, and a semi-structured interview of stress experiences were administered individually to three samples of students of National Taiwan University. After a screening with CIAS\_R (N=1932), three samples, i.e., high-risk (N=33), low-risk (N=38), and

normal control (N=26), were randomly selected from the top 10%, lower 10%, and in-between two extremes, respectively, based on the score distribution of CIAS\_R. Group comparison was conducted by ANOVA. Preliminary data indicate that: 1) the high-risk group stay longer in-net weekly; 2) the high-risk group present significantly higher total score of SCL-90-R, and display significantly more symptoms on somatization, obsessive-compulsive, interpersonal sensitivity, and anxiety; 3) the high-risk group experience significantly more on loneliness and shyness; 4) the high-risk group not only currently encounter more stress but also experienced significantly more stress in the previous year. Suggestion for future research concerning possible link between psychopathology and Internet addiction will be discussed culturally.

**Keywords:** Internet addiction tendency; psychological symptoms; Chinese Internet Addiction Scale-Revised, SCL-90-R

## INTRODUCTION

The present paper, as part of a series of studies designed to investigate the psychopathological issues about Internet addiction, examines the group differences of psychological symptoms, stress, loneliness, and shyness among three groups of college students with various degree of risk for Internet addiction in Taiwan. Although not yet validated by enough research evidence, a possible association between Internet abuse

and psychopathology has attracted a lot of professional and public attention across various countries. Western research suggests that greater use of the Internet may lead to increases in depression and loneliness in regular users (Kraut, Patterson, et al., 1998) and depression may coexist with pathological Internet use (Young, 1998). However, criticisms are centered on the questions of different quality of on-line and real-world relationship (e.g., Shapiro, 1999; Silverman, 1999) and plausible link between depression and Internet use (e.g., Rierdan, 1999). Whether there exists an association between psychopathology and heavy Internet use is yet to be confirmed.

Chen (1999) in a preliminary campus-based study (N=1421) found that normal male college students stay longer in-net and exhibit more interpersonal, health, and time management problems, whereas high-risk females present slightly more addiction symptoms and appear slightly more interpersonal and health problems than their counterparts. In a further examination on gender differences, Chen (2000) revised the measures (i.e., Chinese Internet Addiction Scale) and found that: 1) The Chinese Internet Addiction Scale-revised (CIAS\_R) is a better screening tool with satisfactory factor structure and internal consistency; 2) Males stay longer in-net and display significantly stronger tendency of Internet addiction symptoms and related problems; and 3) Hierarchical regression analyses yield different patterns of predictors for each gender. In that, time

management problems and compulsion symptoms are common predictors for the length of time spent on-line weekly for both genders. Shyness and withdrawal symptoms are predictive only for females, whereas Internet usage experiences and tolerance symptoms are predictive only for males. Different from the findings in western research, Chen (2000) further suggests that loneliness bears little predictive strength for neither male nor female college students in Taiwan.

As of July of 2001, the population of Internet users in Taiwan, the so-called Computer Technological Island, has been exceeding 6 millions which is above one fourth of its total population. Along with the advancement of Internet systems and rapid increase of Internet users, the numbers of users at risk for Internet addiction may be fast increasing as well. Grounded on anecdotal and clinical observations, a further question arises as to whether Internet addiction may be simply an isolated problem resulted from Internet overuse or whether it may be the surface of the hidden constellations of psychological problems.

## **METHOD**

### **Measures:**

**Internet addiction tendency.** The Chinese Internet Addiction Scale-revised (CIAS\_R; Chen, 2000), a 24-item, self-report, and 4-point Likert scale, consists of two subscales: Subscales of Internet Addiction-Symptoms (IA-Sym) and Internet

Addiction-Related Problems (IA-RP). Via iterative principal axis common factor analysis with obliminal rotation, the Subscale of IA-Sym yields three factors, i.e., factors of compulsive Internet use, tolerance symptoms, and withdrawal symptoms. The Subscale of IA-RP yields two factors, i.e., factors of time management problems and interpersonal and health problems. The CIAS\_R has satisfactory internal consistency Cronbach coefficients for each subscale ( $\alpha=.77\sim.91$ ). In addition, univariate examination indicates that total scale scores of CIAS\_R as well as each subscale scores display normal distributions ( $p <.0001$ ).

**Psychological symptoms.** The Chinese version of SCL-90-R (Derogatis, 1994) is a 90-item self-report, symptom inventory, consisting of 9 symptom dimensions such as somatization, interpersonal sensitivity, depression, anxiety, and so on.

**Loneliness.** The Chinese version of the UCLA Loneliness Scale (Russell, 1990) is a 20-item self-report, and 5-point Likert scale with satisfactory internal consistency (Cronbach's  $\alpha=.91$ ).

**Shyness.** The Chinese version of Shyness Scale (Cheek & Buss, 1981) is a 5-item (removed one item from the original English version through Factor analysis), self-report, and 5-point Likert scale with satisfactory internal consistency (Cronbach's  $\alpha=.86$ ).

**Stress.** The Stress Measure (Chen, 1995), consisting of 64 daily hassles and major life events, is a semi-structured interview schedule asking about the happenings one currently encounters and have experienced

in the previous year.

**Background Information.** The questionnaire was designed to assess: 1) basic demographics such as sex, grade, & college; and 2) experiences of Internet use.

### Subjects and Procedures:

In order to recruit subjects with various degree of Internet addiction tendency, the CIAS\_R was first administered to a random sample (N=1932) of students of National Taiwan University. Three samples were then selected based on the distribution of total scores. The high-risk subjects (N=33) were randomly selected from those who scored at the top 10% of the CIAS\_R. The low-risk subjects (N=38) were from those who scored at the lowest 10%. The normal control group (N=26) consists of subjects randomly selected from those who scored between the 10<sup>th</sup> and 90<sup>th</sup> percentile of the total score. Overall, there are 47 males and 50 females. The SCL-90-R, UCLA Loneliness Scale, Shyness Scale, and a semi-structured interview of stress experiences were given individually to the selected subjects by two trained interviewers.

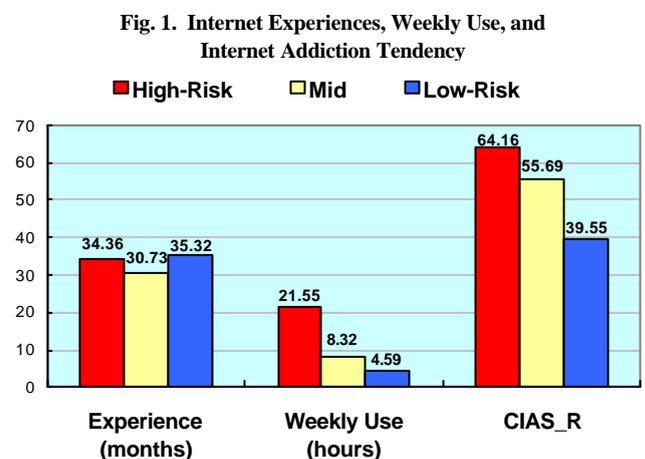
### RESULTS:

Research in this area is just now turning to look more in-depth at the psychopathological factors that might predispose high-risk people to Internet addiction disorder (IAD). Loneliness and depression has been proposed as correlates

of IAD. However, whether Internet addiction breeds maladjustment or vice versa is the question. Hence, this paper is an attempt not only to re-examine the association between emotional factors and Internet addiction tendency with Taiwanese college students, but also scrutinize its plausible relationship with psychological symptoms. Subjects with high, median, and low risk for IAD were recruited. Group comparisons were conducted by ANOVA. The preliminary results are shown as follows.

### Internet Use Experience & Internet Addiction Tendency

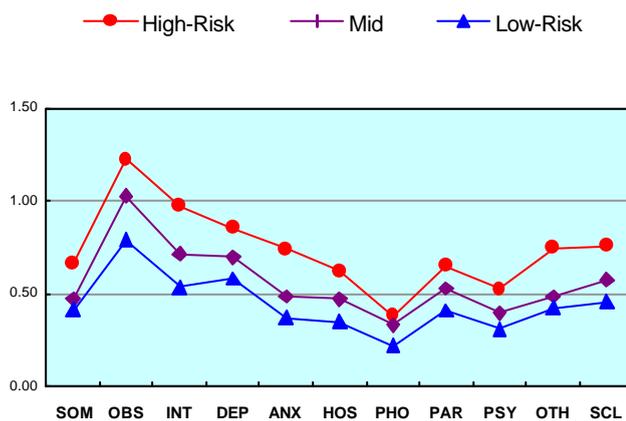
Similar to previous findings on Taiwanese college students, CIAS\_R scores correlate positively with the time spent in Internet weekly ( $r = .48, p < .001$ ). More specifically, as shown in Figure 1, high-risk students stay longer in-net weekly than normal control and low-risk groups ( $F=10.82, p < .001$ ), with average  $20.15 \pm 25.09$ ,  $8.32 \pm 9.34$  and  $4.59 \pm 5.55$  hours, respectively.



## Internet Addiction Tendency & Psychological Symptoms

Concerning group differences on symptoms of SCL-90-R, as shown in Figure 2, the high-risk group present significantly higher total score of SCL-90-R ( $F=4.32, p < .05$ ), and display significantly more symptoms on anxiety ( $F=4.41, p < .05$ ), obsessive-compulsive ( $F=4.13, p < .05$ ), interpersonal sensitivity ( $F=5.88, p < .01$ ), and others ( $F=3.83, p < .05$ ). Post hoc group comparisons further show that high-risk group present significantly more symptoms than low-risk group, and there were no difference between low-risk and normal control group. However, there are no significant differences found in somatization ( $F=2.24$ ), depression ( $F=1.93$ ), hostility ( $F=2.75$ ), phobic anxiety ( $F=1.67$ ), paranoid ideation ( $F=2.27$ ), and psychoticism ( $F=2.25$ ).

Fig. 2. Differences of Psychological Symptoms on SCL-90-R

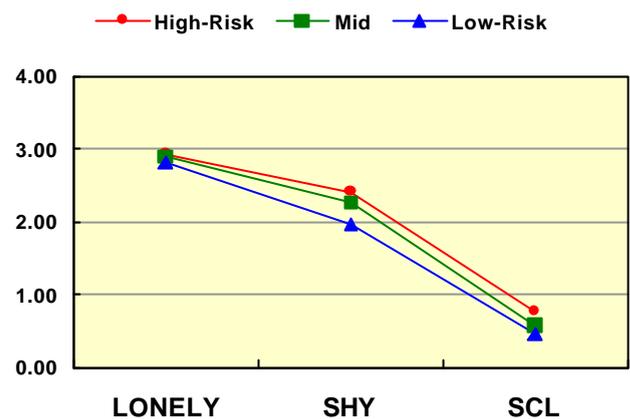


## Emotional Experiences

Concerning group differences on emotional and stress experiences, as shown

in Figure 3 and 4, the high-risk group report significantly higher scores on loneliness and shyness scales ( $F=3.33$  &  $F=3.44$ , respectively,  $ps < .05$ ).

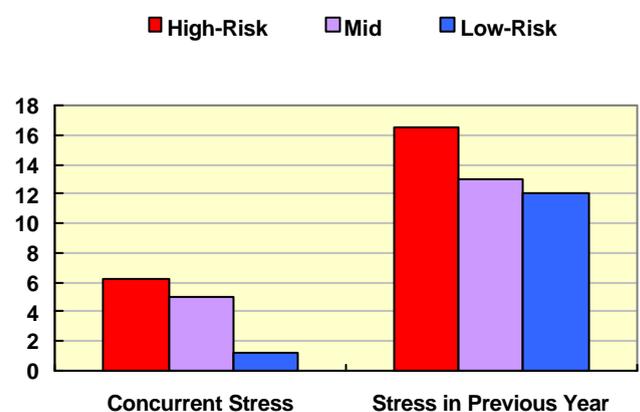
Fig.3. Differences of Loneliness, Shyness, and General Psychological Adaptation



## Stress Experiences

In terms of stress experiences, the high-risk group not only currently encounter more stress ( $F=7.87, p < .001$ ) but also experienced significantly more stress in the previous year ( $F=3.34, p < .05$ ).

Fig. 4. Differences of Concurrent and Previous Stress



## CONCLUSION

In conclusion, research in this area is just now turning to look at the psychopathological factors that might predispose high-risk people to Internet addiction disorder. This paper is an attempt to examine the plausible association between Internet addiction and psychological symptoms as well as emotional and stress experiences. Preliminary data indicate that, by using the CIAS\_R to screen the tendency of Internet addiction, the high-risk subjects spend more time in-net weekly, present more symptoms and/or experiences related to impulse control and interpersonal relationships such as obsessive-compulsive, anxiety, interpersonal sensitivity, shyness, and loneliness, rather than the symptoms more related to self absorption such as depression, paranoid ideation, and psychoticism. These findings may shed light in our exploration of possible link between Internet addiction and psychopathology.

Different from previous findings in western samples (e.g., Kraut, Patterson, Lundmark, et al., 1998), depression was not associated with Internet overuse in Taiwanese college students. The present study comes out with similar results in that those who have higher risk for Internet addiction seems to experience more loneliness, shyness, and stress in life. It seems intriguing to take into consideration that individualism and collectivism may be related to various extent of depression in

Western and Chinese societies. Leading theorists of indigenous social and personality psychology in Taiwan, Yang (1972 & 1995) has stated that people in Taiwan have been influenced greatly by familistic collectivism and Huang (1988 & 1995) state that traditional familial, rather than individual, goals have been the measures of social success in Taiwan. Thus, Chen (1998) pointed out that, in Chinese society, "social-oriented cultural features in Taiwanese may be very likely seen as both a potential cause, as well as a buffer, of psychopathology." Such social-oriented or collectivistic attributes may be manifested in the symptoms of psychopathology and projected on the Internet screen.

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