

A Study of Internet Addiction through the Lens of the Interpersonal Theory

CHIA-YI LIU, MBA¹ and FENG-YANG KUO, Ph.D.²

ABSTRACT

Previous studies have presented conflicting claims regarding reasons that people become addicted to the Internet. In this study, we attempted to identify predictors of Internet addiction based on Sullivan's interpersonal theory and Internet addiction literature. In our research model, it is hypothesized that good parent-child relationship positively correlates with good interpersonal relationships, which in turn are hypothesized to correlate with undesirable social anxiety. In addition, both parent-child and interpersonal relationships are hypothesized to negatively correlate with Internet addiction, whereas the level of social anxiety is hypothesized to positively correlate with Internet addiction. The results of this study confirm the research model hypotheses, indicating that the quality of parent-child relationship is indeed positively correlated to the quality of our participants' interpersonal relationships and that frustrating interpersonal relationships may raise the level of social anxiety. In addition, interpersonal relationships, the parent-child relationship, and social anxiety all influence Internet addiction, as predicted by the model. Finally, the more social anxiety and discontent with their peer interactions the participants experienced, the more addicted they were to the Internet.

INTRODUCTION

INTERNET ADDICTION has become a prevailing problem in the modern wired society. In Taiwan, as in many other parts of the world, a significant percentage of teenagers reportedly spend much time in cyberspace to the extent that they have missed formal studies or school-related activities. The government, researchers, and educators have devoted much effort to understanding Internet addiction problems.

In this pursuit, one important line of research has examined the relationships among Internet abuse, social anxiety, and interpersonal relationships. Sev-

eral studies have identified that people who are shy, have poor social skills, or experience a high level of interpersonal anxiety may be drawn to cyberspace relationships.^{1,2} Other studies have explored whether the cyber-relationship substitutes for an unmet need in an actual relationship.³⁻⁵ Together, these studies indicate that cyber-relationships can provide a sense of belonging, warmth, and well-being.

We attempt to apply Sullivan's interpersonal theory⁶ to study whether unsatisfied needs for interpersonal and parent-child relationships may impact a person's level of anxiety, and whether these three previous constructs collectively may influence Internet addiction.

¹Department of Information Management and Communication, Wenzao Ursuline College of Languages, Kaohsiung, Taiwan.

²Department of Information Management, National Sun Yat-Sen University, Kaohsiung, Taiwan.

Interpersonal theory

The interpersonal theory, proposed by Harry Stack Sullivan (1892–1949), suggests that people can never be isolated from the complex of interpersonal relations in which they live and have their own being.⁶ Sullivan's study of interpersonal processes focuses in detail on social anxiety and reveals that an individual's level of anxiety is a direct product of the level of anxiety in that individual's early environment. All the anxiety picked up from the caregiver should fall into the "bad me" or "not me" personifications, and the nonanxiety state should fall into the "good me" personification. The images of self ("good me," "bad me," and "not me") are reflected in the peer relationship patterns of the adolescent.⁷ A later study by Bell et al. revealed that the parent-child relationship was a primary experience of the child, as parents retained a substantial influence on the development of adolescent social relationships outside the family.⁸ Feldman and Wentzel also found that parental child-rearing style and social support from the family were positively associated with whether the adolescent was trusted or liked by his or her peers.⁹ These studies collectively suggested that warmth, support, acceptance, and love in the parent-child relationship are directly related to the child's closeness to peers, satisfaction with peer relations, and acceptance by peers. Therefore, the following hypothesis is formulated:

Hypothesis 1: The parent-child relationship will positively correlate with a child's interpersonal relationships with peers.

From the viewpoint of interpersonal theory, the rise of social anxiety comes from frustrated personal companionship after preadolescence. Studies directly examining the relation between peer relationships and social anxiety have provided additional support for the negative correlation between interpersonal relationships and social anxiety. For example, Anderson and Harvey raised the possibility that unpleasant experiences with peers during childhood and adolescence played a causal role in the emergence of social anxiety.¹⁰ Vernberg et al. confirmed that social anxiety would change over time in response to the degree of companionship and intimacy in friendships and to the frequency of rejection experiences.¹¹ Inderbitzen et al. and La Graca and Harrison also found the consistent result that negative peer experience, such as peer rejection, would lead to social withdrawal and social anxiety.^{2,12} Recently, Lo et al. showed that the quality of interpersonal relationships decreased as the amount of social anxiety increased.³ Thus, the following hypothesis is proposed:

Hypothesis 2: The interpersonal relationship with peers will negatively correlate with a person's level of social anxiety.

TABLE 1. DESCRIPTIVE INFORMATION FOR EACH SCALE

Scale name	Scale description	Sample item
Parent-child relationship	This scale is based on the parent-adolescent adjustment scale originally developed by Stott in 1997 and later adapted by Huang specifically for Taiwan. ¹⁹ It includes three separate components: confidence, affection, and companionability.	I will discuss with my parents before I make a decision.
Interpersonal relationships	We employed the scale developed by Wang, who modified the scale that was originally proposed by Lu and Huang. ²⁰ Lu and Huang adapted the Minnesota personality scale to study interpersonal relationships in Taiwan. ²⁰	I feel that peers talk about me behind my back.
Social anxiety	The social anxiety measurement incorporates Leary's fear of negative evaluation (FNE) scale, which is based on Watson and Friendly's social-evaluative anxiety scale. ²¹	I am usually worried about the kind of impression I make.
Internet addiction	We employed Young's Internet addiction scale in this study. ⁵ This scale consists of 20 items. Students in the sample were asked to use a 5-point scale to respond to the 20 items, and scores were summed to obtain total scores. Total scores can be categorized into three levels: average, warring, and dangerous.	How often do others in your life complain to you about the amount of time you spend online?

TABLE 2. GOODNESS-OF-FIT MEASURES OF RESEARCH MODEL

Goodness-of-fit measure	Goodness-of-fit measure for research model	Acceptability
χ^2/df	3.7 = (62.89/17)	<5
NNFI	0.934	>0.9
GFI	0.972	>0.9
CFI	0.96	>0.9
RMSEA	0.07	<0.08

The criteria of acceptability are suggested by Bentler and Bonnet.²²

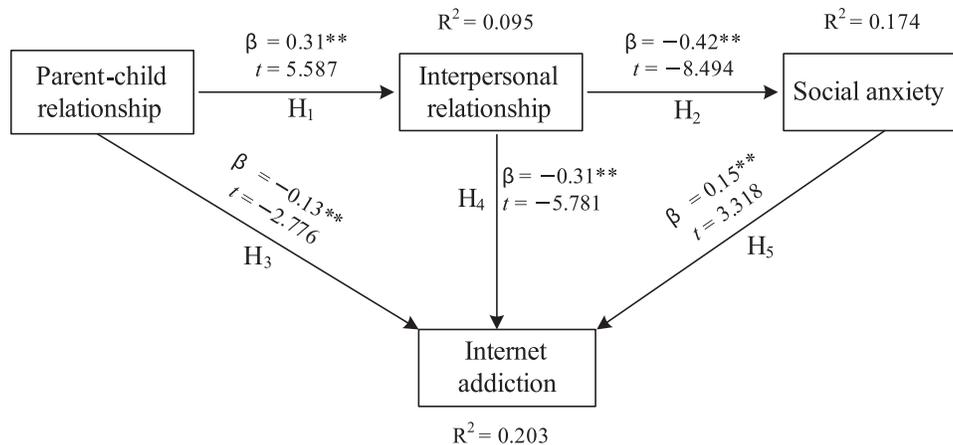
Internet addiction

People who lose control over their actions in life and, in general, spend more than 38 hours a week online are considered to have an Internet addiction. Young has identified eight symptoms of Internet addiction.¹³ Jones’s work further shows that “almost all addictions can be traced to difficulties in relationships during childhood.”¹⁴ A considerable number of studies have confirmed this negative correlation between interpersonal relationships and Internet overuse. The Internet may well fulfill social needs for those who have particular difficulty establishing social relationships, thus adding social connectedness and providing a sense of belonging.¹⁵ The following hypotheses are therefore formulated:

Hypothesis 3: The parent–child relationship will have a negative correlation to a person’s Internet addiction.

Hypothesis 4: Interpersonal relationships will have a negative correlation to a person’s Internet addiction.

Note that many studies have also found a high incidence of social anxiety among university students, who may turn to the Internet as a way of escaping their social fears.⁴ Peter et al. concluded that socially anxious adolescents are more likely to form online friendships and prefer to communicate with strangers online rather than face to face.¹⁶ Indeed, the Internet has been found to assist people who are isolated or disabled in developing social relationships.¹⁷ In cyberspace, anonymity and reduced cues allow individuals who are shy and introverted to learn social skills by creating a new identity.¹⁸ With anonymity, people who suffer from poor real-world interpersonal relationships may feel freer to speak without strict emotional control, anxiety, and fear. Thus, people may use the Internet as a substitute



* $p < 0.05$
 ** $p < 0.01$

FIG. 1. Results of model test.

TABLE 3. ANOVA AND DESCRIPTIVE STATISTICS

<i>Variables</i>	<i>Source of variance</i>	<i>Sum of squares</i>	<i>df</i>	<i>Mean square</i>	<i>F ratio</i>	<i>p-value</i>	<i>Addiction levels</i>	<i>Mean</i>	<i>Standard deviation</i>
Social anxiety	Between groups	858.457	2	429.229	9.166	0.000	Average level	35.47	7.241
	Within-groups error	25848.559	552	46.827			Warring level	37.71	6.354
	Total	26707.016	554				Dangerous level	39.88	7.043
Interpersonal relationships	Between groups	7080.873	2	3540.436	32.627	0.000	Average level	65.55	10.811
	Within-groups error	59898.262	552	108.511			Warring level	59.02	9.896
	Total	66979.135	554				Dangerous level	53.41	11.314
Parent-child relationship	Between groups	2493.430	2	1246.715	17.116	0.000	Average level	57.00	9.062
	Within-groups error	40207.688	552	72.840			Warring level	53.33	8.021
	Total	42701.117	554				Dangerous level	48.82	6.569

for real-world social contacts or as an escape when they feel anxious about establishing real interpersonal relationships.³ Therefore, the following hypothesis is proposed:

Hypothesis 5: The level of social anxiety will have a positive correlation to a person's Internet addiction.

MATERIALS AND METHODS

In this study, we employed a questionnaire to collect data, which were then analyzed by using structural equation modeling (SEM). Table 1 summarizes all questionnaire items. Data for this study were collected in a convenience sample consisting of 611 students attending five educational institutions in Taiwan. Fifty-six responses were rejected because of missing data, resulting in a final sample of 555 respondents, of whom 46% were male.

RESULTS

The measures for a model's goodness-of-fit indicated that the observed data fit well with our hypothesized model, as shown in Table 2. Figure 1 shows the relative strengths of individual paths specified by the research model and the variance (R^2) explained by each path. First, interpersonal relationships are significantly related to the parent-child relationship ($\beta = 0.31$, $t = 5.59$, $p < 0.01$) and R^2 is 0.095. Second, the test results indicate that the interpersonal relationship has a significant influence on social anxiety ($\beta = -0.42$, $t = -8.494$, $p < 0.01$) and accounts for 17.4% of the variance in social anxiety. Finally, the parent-child relationship ($\beta = -0.13$, $t = -2.776$, $p < 0.01$), interpersonal relationships ($\beta = -0.31$, $t = -5.781$, $p < 0.01$), and social anxiety ($\beta = 0.15$, $t = 3.318$, $p < 0.01$) all have significant impacts on Internet addiction. Collectively, these three constructs also account for 20.3% of variance in Internet addiction. Therefore, the five individual paths hypothesized are supported.

Furthermore, based on the criteria of Internet addiction proposed by Young, most participants in this study can be classified as at the average (51%) or warring (46%) level, and only 3% belong to the dangerous level. An ANOVA test among three groups reveals that there exist statistically significant differences ($F_{(2,552)} = 9.166$, $p < 0.000$) in degree of social anxiety among participants in the average ($M = 35.47$), warring ($M = 37.71$), and

dangerous ($M = 39.88$) levels. Also, statistically significant differences ($F_{(2,552)} = 32.627$, $p < 0.000$) are found among average ($M = 65.55$), warring ($M = 59.02$), and dangerous ($M = 53.41$) level participants in terms of the quality of interpersonal relationships. Finally, the quality of the parent-child relationship differs significantly ($F_{(2,552)} = 17.116$, $p < 0.000$) among average ($M = 57.00$), warring ($M = 53.33$), and dangerous ($M = 48.82$) level participants (Table 3).

CONCLUSIONS

This addictive behavior can be relieved more effectively if we understand the reasons underlying the behavior. In this study, we identify predictors of Internet addiction by constructing a model from elucidating the linkages among Internet addiction, parent-child relationship, interpersonal relationships, and social anxiety. This finding is consistent with the positions of Suler and Young, who have said that addiction to the Internet is a reaction to poor adaptation in the real world.^{5,14} Most individuals who are addicted to the Internet experience more social anxiety because of bad social skills and frustrated personal companionship, which in turn may be shaped by qualities of the parent-child relationship. Anxiety picked up from caregivers or parents in the early stages of development, however, can be overcome and social skills can be improved if people develop good relationships during adolescence.⁶ Therefore, educators and parents should focus on early prevention by ensuring healthy interpersonal and parent-child relationships during childhood and on programs that help to improve social skills for the adolescent.

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Address reprint requests to:

Chia-Yi Liu

Department of Information

Management and Communication

Wenzao Ursuline College of Languages

Kaohsiung, Taiwan

E-mail: helenliu@ms5.hinet.net

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