

Disconnected Marriage, Connected Internet: Exploring the Relationship between  
Problematic Internet Use, Acculturative Stress, and Marital Intimacy among  
Korean Married Couples in the United States

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## **Dedication**

This dissertation is dedicated to my wife and two children, my parents, my mother-in-law, and, especially, my father-in-law in heaven.

## Abstract

Problematic Internet use (PIU) is a growing though unexplored problem among Korean married couples in the United States. The present study aimed to examine the relationship between PIU, acculturative stress (AC), and marital intimacy (MI) among Korean married couples in Minnesota. Forty Korean heterosexual couples aged 18 to 54 were recruited through a combination of convenience and snowball sample from metropolitan areas in Minnesota. Participants completed survey questionnaires via email. Outcome variables were self- and partner-rated Internet Addiction Test (IAT) scores, respectively. Primary predictor variables were AC scores and MI scores. Multilevel models were fitted to estimate the effects of Actor-Partner Interdependence Model (APIM), a statistical methodology designed to analyze dyadic data. Data analyses were conducted using SAS 9.3.

The results suggested that a person's levels of acculturative stress ( $p=.0574$ ) marginally influenced his or her own PIU scores while the partner's levels of acculturative stress ( $p=.0036$ ) significantly affected partner-rated PIU scores. Furthermore, the study demonstrated that a person's marital intimacy (Consensus,  $p=.0993$ ) marginally predicted his or her own PIU scores while the partner's levels of marital intimacy (Overall marital intimacy,  $p=.0063$ ; Consensus,  $p=.0004$ ; Openness,  $p=.0136$ ; Affection,  $p=.0282$ ; Commitment,  $p=.0020$ ) significantly predicted partner-rated PIU scores. In addition, the result indicated that marital intimacy decreased the estimate regression coefficient of the acculturative stress to self-rated IAT scores by 16.3% while social support satisfaction decreased the estimate regression coefficient of

the acculturative stress to self-rated IAT scores by 30.7%. Finally, the results showed that the degree of difference between self- and spouse-rated IAT scores was positively associated with the difference of actor's and partner's acculturative stress and partner's marital intimacy. On the practices with married couples seeking professional help especially for partners' PIU, it is noteworthy for mental health practitioners to investigate not only their Internet use but also their relational quality, especially marital intimacy. Moreover, these findings suggest the importance of interventions in decreasing PIU by enhancing couples' marital quality in a family structure, considering gender differences in their effects. Finally, these findings support the importance of culturally-tailored interventions that target PIU as a means of enhancing Asian couples' marital quality in the United States.

## Table of Contents

<b>List of Tables</b> .....	ix
<b>List of Figures</b> .....	xi
<b>1 INTRODUCTION</b> .....	1
1.1 Statement of the problem .....	1
1.1.1 PIU as a social problem .....	1
1.1.2 PIU in S. Korea .....	2
1.1.3 PIU of Koreans in the U.S. ....	3
1.2 Identified areas of research .....	5
<b>2 LITERATURE REVIEW</b> .....	6
2.1 Diagnostic definition of PIU .....	6
2.2 Prevalence and symptoms of PIU .....	7
2.3 Conceptual model of PIU .....	9
2.3.1 Cognitive-behavioral model.....	9
2.3.2 Escape from self theory .....	10
2.3.3 Compensation theory .....	10
2.4 Primary factors of PIU .....	11
2.4.1 Gender .....	11
2.4.2 Time spent online.....	12
2.4.3 Depression.....	12
2.4.4 Acculturative stress .....	13
2.4.5 Marital intimacy .....	14

2.4.6	Social support as a mediator to stress .....	16
2.5	Research gaps.....	18
2.6	Purpose of research .....	19
2.7	Research hypotheses .....	20
2.8	Significance of research .....	20
3	METHODS .....	23
3.1	Participants.....	23
3.2	Procedures .....	23
3.3	Measures.....	24
3.3.1	Socio-demographics.....	25
3.3.2	Internet use and psychological well-being.....	25
3.3.3	Acculturative stress.....	25
3.3.4	Marital intimacy.....	26
3.3.5	Internet addiction .....	26
3.3.6	Data analysis .....	27
4	RESULTS .....	30
4.1	Sample characteristics .....	30
4.1.1	Socio-demographics.....	30
4.1.2	Internet use.....	32
4.1.3	Mental health use .....	34
4.1.4	Psychological well-being.....	38
4.1.5	Internet addiction: IAT .....	39



4.1.6	Marital intimacy.....	39
4.1.7	Internet use hours and Internet addiction.....	40
4.2	Checking Zhang’s Adaptation of Berry’s Acculturation Model.....	40
4.3	Self-rated IAT .....	42
4.3.1	Self-rated IAT and predictors (Hypothesis 1 and 2).....	43
4.3.2	Self-rated IAT and predictors with time spent online.....	44
4.3.3	Self-rated IAT and acculturative stress with marital intimacy .....	45
4.3.4	Mediating effects: social support satisfaction and marital intimacy (Hypothesis 3).....	46
4.4	Partner-rated IAT .....	48
4.4.1	Partner-rated IAT and predictors (Hypothesis 4 and 5).....	49
4.4.2	Partner-rated IAT and predictors with time spent online.....	49
4.4.3	Partner-rated IAT and acculturative stress with marital intimacy .....	50
4.5	Difference between IAT scores rated by self and by partner (Hypothesis 6) ....	51
5	DISCUSSION.....	54
6	Implications for practice .....	61
7	Limitations of the study .....	62
8	References.....	63
9	Appendices.....	83
9.1	Appendix A .....	83
9.2	Appendix B .....	94
9.3	Appendix C .....	106

9.4	Appendix D .....	110
9.5	Appendix E.....	114
9.6	Appendix F.....	117

## List of Tables

Table 1. Socio-demographics (Values are mean $\pm$ standard deviation or percent) .....	30
Table 2. Internet use (Values are mean $\pm$ standard deviation or percent).....	32
Table 3. Online applications (essential + nonessential) by gender .....	33
Table 4. Persons you ask for help with problems related to Internet use .....	34
Table 5. Health information, willingness to use mental health service, and preference for therapy type.....	36
Table 6. Barriers to the use of mental health service .....	37
Table 7. Acculturative stress, depression, and satisfaction of social support .....	38
Table 8. Internet addiction test.....	39
Table 9. Marital intimacy rating by gender (number $\pm$ number = mean $\pm$ standard deviation) .....	39
Table 10. Model S-1 (Self-rated IAT = Actor's Acculturative Stress + Partner's Acculturative Stress).....	43
Table 11. Model S-2 (Self-rated IAT = Model S-1 + Actor's Internet Use + Partner's Internet Use).....	44
Table 12. Model S-3 (Self-rated IAT = Model S-1 + Actor's Marital Intimacy + Partner's Marital Intimacy) .....	45
Table 13. Model P-1 (Partner-rated IAT = Actor's Acculturative Stress + Partner's Acculturative Stress).....	49
Table 14. Model P-2 (Partner-rated IAT = Model P-1 + Actor's Internet Use + Partner's Internet Use).....	49

Table 15. Model P-3 (Partner-rated IAT = Model P-1 + Actor's Marital Intimacy + Partner's Marital Intimacy).....	50
Table 16. Predictors of self-rated IAT with/without time spent online (P-values).....	117
Table 17. Predictors of self-rated IAT with/without marital intimacy (P-values).....	117
Table 18. Predictors of partner-rated IAT with/without time spent online (P-values) ...	118
Table 19. Predictors of partner-rated IAT with/without marital intimacy (P-values) ....	118

## List of Figures

Figure 1. APIM of acculturative stress .....	29
Figure 2. Online applications (essential + nonessential) by gender.....	34
Figure 3. Persons you ask for help with problems related to Internet use .....	35
Figure 4. Barriers to the use of mental health service.....	38
Figure 5. Zhang’s adaptation of Berry’s acculturation model.....	41
Figure 6. Mediating effects of social support satisfaction .....	42
Figure 7. Modified Zhang’s adaptation of Berry’s model .....	46
Figure 8. Mediating effects of marital intimacy .....	47
Figure 9. Association between difference of IAT and difference of marital intimacy .....	52

# 1 INTRODUCTION

## 1.1 Statement of the problem

### 1.1.1 PIU as a social problem

Problematic Internet use (PIU) is a growing social problem across cultures and countries (Chou, 2001; Ha, Yoo, Cho, Chin, Shin, & Kim, 2006; Young & de Abreu, 2010). Specifically, in the United States, Internet addiction recovery or rehabilitation centers are numerous, including McLean Hospital in Boston, Proctor Hospital in Peoria, Illinois, and the Betty Ford Clinic, Sierra Tucson (Young & de Abreu, 2010). The United Kingdom has taken actions to treat, educate, and prevent PIU through centers (e.g., Child Exploitation and Online Protection Centre), websites (e.g., [www.chatdanger.com](http://www.chatdanger.com)), and clinics (e.g., the Computer Rehab Clinic in Weston-super-Mare, Somerset) (Yun & Park, 2010; The Telegraph, 2009). In India, some universities prohibit students from using the Internet during night hours due to awareness of suicide reports contributed by students' PIU (Swaminath, 2008). China introduced laws to restrict adolescents' computer games up to three hours per day to respond to dramatically increasing problematic Internet users (Block, 2008). South Korea has provided the treatment of Internet addiction through hospitals and treatment centers; counselors for the treatment; and has established education programs for preventing PIU at schools (Block, 2008).

Research has shown that PIU negatively affects individuals' physical and/or psychosocial well-being (Park, Kim, & Cho, 2008; Young & de Abreu, 2010). The negative consequences of PIU include behavioral, emotional, and/or relational forms: physical problems (e.g., less exercise, seeking less medical care, skipping meals, and

sleeping late and sleep deprivation); distress in vocational and academic settings (e.g., unemployment, poor performance); and conflict in interpersonal relationships (e.g., child neglect, marital discord, failed marriages) (Anderson, 1999; Brenner, 1997; Chou & Hsiao, 2000; Kim et al, 2010; Young, 1996). While there are many factors influencing PIU, researchers have indicated perceived stress as a critical predictor to PIU (Young & de Abreu, 2010). Some indicate that when people in stress begin using the Internet as an escape, people gradually increase the use of Internet in order to decrease stress and increase quality of life (Du, Jiang, & Vance, 2010; Young, 2007).

### **1.1.2 PIU in S. Korea**

For the last decade, PIU has been a primary social issue in South Korea, and currently is considered a serious public health problem (Block, 2008; Kwon, 2011). According to the recent annual survey conducted by the National Information Society Agency (NISA, 2012) in South Korea, 7.7 % of the 10,000 respondents were considered as being at high or potential risk of PIU. An analysis by age revealed that while the rate of PIU in adolescents ages 10 to 19 years was highest (10.4%), the rate of high risk PIU in adults ages 20 to 49 years doubled from 0.7% to 1.4% compared with a 2010 survey and the rate of PIU in this group was the highest within the last five years (NISA, 2012). Researchers have reported that PIU has led to cardiopulmonary-related deaths, social isolation, impulsive crimes, and family violence in South Korea (Chang & Hung, 2012; Park, Kim, & Cho, 2008; NISA, 2012). Furthermore, PIU has often resulted in familial conflicts between child and parents or spouses, which in turn has been associated with divorce or disorganization of the family.

Researchers have attributed Koreans' vulnerability to PIU to the following: wide distribution of high-speed broadband Internet at home or at PC cafés (Kim, 2011) and high accessibility to Internet through Internet-embedded devices such as mobile phones or tablets which enhance accessibility of Internet users (Greenfield, 1999). In addition to high levels of accessibility, cultural factors such as stress from rapid social change and structured social pressure may lead to PIU (Tao, 2005; Tao, Ying, Yue, & Hao, 2007). This stress especially among Koreans stems from extreme competition in education or business especially since the Asian financial crisis in 1997 and its resulting restructuring of economies under the International Monetary Fund program (Uutela, 2010). As a result, the advanced Internet-friendly social infra-structure as well as accessibility to the Internet may allow Koreans experiencing various stresses to resort to Internet use as an escape from stress and to accelerate their use of the Internet (Park, Kim, & Cho, 2008).

### **1.1.3 PIU of Koreans in the U.S.**

Despite the increased interest in PIU in South Korea, less attention has been paid to PIU among Koreans in the U.S. It is noted that Internet use in the United States increased from 22% of the general populace in 1998 to 75% in 2004 (NetRatings, 2004). One study revealed that about 13% of Americans had potential problem markers for PIU (Hardie & Tee, 2007). A recent report by Pew Research Center's Internet and American Life Project tracking survey (2012) shows that 88% of U.S. adults own a cell phone and the number of the adult cell phone owners accessing the Internet or email through using their cell phones increased from 31% in 2009 to 55% in 2012. In addition, a report by the U.S. Census Bureau (2010) shows that the number of individuals living in households with Internet access increased from 41.5% in 2000 to 75.9% in 2010.



Along with the wide spread use of the Internet and the dramatic increase in the number of its users in the U.S., the Internet users' characteristics also differ according to their demographics. The U.S. Census Bureau (2010) reported that the highest rate of Internet users in the U.S. was age 35 to 44 living in household with Internet access (82.1%) and accessing Internet at home (76.3%). Asians had the highest rate of Internet users living in household with Internet access (86.8%). Moreover, individuals who are employed, attain higher degrees, and have higher household income are likely to have the highest rate of Internet use in the U.S. (the U.S. Census Bureau, 2010). Those who have few opportunities for accessing the Internet are less likely than those with higher Internet access to benefit from necessary information for their lives. Those who have many opportunities for using the Internet, on the contrary, are more likely than those with less Internet access to suffer from various side effects such as PIU.

A comprehensive literature review found only one study on PIU of international college students in the U.S. addressed Korean students' being at risk of PIU (Ye, 2005). The review failed to find any study directly addressing PIU among other age groups such as adolescents, married couples, or families residing in the U.S. In addition to the factors influencing PIU among Koreans living in South Korea, acculturative stress resulting from the process of adjustment to a different culture may aggravate PIU of Koreans in the U.S. Moreover, a low level of English proficiency is a barrier to seeking mental health services among Koreans with PIU in the U.S., which hinders them from receiving treatment (Ye, 2005). Further, lack of social support deprives Koreans with PIU of opportunities to buffer to or prevent PIU (Torres, 2011).

## **1.2 Identified areas of research**

Therefore, there is a critical need to investigate PIU of Koreans living in the U.S. In particular, given the dearth of studies on PIU of adults and family, it seems urgent to investigate behaviors of the Internet use as well as attitudes toward and barriers to seeking mental health services among Korean married couples in the United States. Furthermore, it would be useful to examine the impacts of acculturative stress among these Korean couples on their PIU. Next, it might be beneficial to explore how the acculturative stress affects PIU of spouses within marital relationships. Finally, there exists an immediate need to identify key factors that increase or minimize the risk for PIU and to apply this knowledge in the development and testing of novel, couple-based interventions delivered in partnership with practitioners serving Asian couples with PIU in the United States.

## 2 LITERATURE REVIEW

### 2.1 Diagnostic definition of PIU

Since the proposal of the first set of diagnostic criteria for PIU relying on the DSM-IV definition for substance dependence by Dr. Young, PIU has been used in a broad term but interchangeably with various terms, including: Internet addiction, pathological Internet use, Internet behavior dependence, Internet use disorder, or Internet abuse. (Aboujaoude, 2010; Ko, Chen, Chen, & Yen, 2005; Young & de Abreu, 2010).

Researchers have consistently attempted to conceptualize PIU as an impulse control disorder in the DSM-IV which is classified as a non-chemical behavioral addiction such as eating addiction, sexual addiction, and gambling addiction (Aboujaoude, 2010; Griffiths, 1996; Meerkerk, Van den Eijnden, & Garretsen, 2006; Parsons, 2005; Young, 1996). The characteristic symptoms of PIU defined by Griffiths (1996) included salience, mood modification, tolerance, withdrawal, conflict, and relapse. Namely, problematic Internet users tend to fail in reducing amounts of Internet use, to use the Internet to maintain psychological well-being, and to disconnect from social interactions with family, friends, and co-workers (Griffiths, 1998; Parsons, 2005). Moreover, these symptoms result in interfering in daily living functioning of problematic Internet users (Chou, 2001; Griffiths, 2000).

Shapira and his colleagues (2003) broadened the diagnostic criteria for PIU into the general style of the impulse control disorders, arguing that the previous definitions of PIU had limitations for accommodating all the phenomena of PIU among diverse populations (Aboujaoude, 2010). The symptoms of this general criteria included preoccupation and clinically significant distress or functional impairment. Most recently, the authors of the

DSM-V considered PIU's potential inclusion. However, the need for more scientific proof and the lack of a universally agreed definition and diagnostic criteria hinder inclusion in the DSM-V (Durkee et al., 2012). In this study, PIU will be used as a term to accommodate Internet use-related symptoms since it is the broadest term to describe Internet-related behaviors. In addition, this study will adopt the definition by Shapira and his colleagues since this study is designed to explore unknown PIU among a minority population.

## **2.2 Prevalence and symptoms of PIU**

While studies on PIU of college students showed the rate of PIU ranged from 6% to 10%, one national study revealed 6% of non-college participants are classified as problematic Internet users (Chou & Hsiao, 2000; Greenfield, 1999; Kubey, Lavin, & Barrows, 2001). Despite lack of clinical evidence, many researchers suggest that problematic Internet users spend more than 20 hours per week online (Anderson, 1999; Armstrong, Phillips, & Saling, 2000; Brenner, 1997; Chou, 2001; Greenfield, 1999; Morahan-Martin & Schumacher, 2000; Weiser, 2001).

Research found that problematic Internet users are highly likely to be middle-age women ranging from 35 to 49 (Griffiths, 2000; Netratings, 2004; Young, 1996); the unemployed or marginally employed who have high flexibility in schedules and accessibility to the Internet (Eppright, Allwood, Stern, & Theiss, 1999); and those who feel lonely or isolated, or who are seeking intimate relationships (Eppright, Allwood, Stern, & Theiss, 1999; Kandell, 1998).

Parsons (2005) indicated PIU may negatively affect not only problematic Internet users themselves but also the users' various social relations, including families. Findings

from many studies support the negative effects of PIU on interpersonal relationships (Eppright, Allwood, Stern, & Theiss, 1999; Kandell, 1998). For example, in regard with the characteristics of PIU that have negative effects on social relationships, researchers suggest that virtual relationships through using the Internet provides a false sense of accomplishment and connection, thereby resulting in limiting the social development of the users (Kraut et al., 1998; Kubey, Lavin, & Barrows, 2001; Parsons, 2005). Therefore, while problematic Internet users are likely to report their social relationships as good, others who have intimate relationships with the problematic Internet users are likely to report their relationships as stressful (Peris et al., 2002). As a result, problematic Internet users are likely to have difficulty in maintaining social relations and instead to seek the Internet use in order to meet their social needs (Brenner, 1997; Kubey, Lavin, & Barrows, 2001; Scealy, Phillips, & Stevenson, 2002; Shotton, 1991; Young, 1996).

Furthermore, problematic Internet users have different motivations for their Internet use, compared with non-problematic Internet users. For example, most problematic Internet users use the Internet for the purpose of their entertainment or leisure, whereas their counterparts use the Internet to gather information, utilize various social services, and communicate with others (Kubey, Lavin, & Barrows, 2001). This difference in the Internet use among problematic Internet users seems to be found in their lack of ability in maintaining satisfactory relationships (Kandell, 1998; Kraut et al., 1998). Moreover, research also found that adults with an increased level of emotional loneliness and lack of interpersonal relationships are likely to use the Internet (Sum, Mathews, Hughes, & Campbell, 2008; Milani, Osualdella & Di Blasio, 2009). Based on these findings, the use

of the Internet among adults is likely to be linked with reducing their sense of loneliness. The interpersonal motivation of Internet use was supported by Young's (1999) qualitative study that interviewed 35 counselors working with problematic Internet users. In the study, most (91%) of the counselors reported that their clients used the Internet for the purpose of seeking new relationships. Seventy four percent of the participant counselors reported they helped their clients with solving relational issues (Parsons, 2005).

### **2.3 Conceptual model of PIU**

For the last several decades, research has attempted to explore the cause-effect relationship between potential factors and PIU. The present study will help to identify how PIU develops and evolves through introducing three models which are commonly used.

#### **2.3.1 Cognitive-behavioral model**

Researchers have indicated that problematic Internet users tend to use the Internet to seek emotional relief from mental stress, tension, or agitation in their lives to find mental pleasure through momentary ignorance of the mental stressors (Peele & Brodsky, 1991; Twerski, 1990; Young, 2004). Greenfield (1999) argued that the Internet has powerful mood-altering capabilities that provide problematic Internet users with psychological escape.

Davis (2001) proposed that PIU has a distinct pattern of Internet-related cognitions and behaviors that have negative influences on daily life. In particular, he noted that the presence of maladaptive cognitions plays a major role in PIU as a behavioral addiction (Kwon, 2011). According to Davis, the maladaptive cognitions including thoughts about the self and thoughts about the world lead to PIU while

cognitive distortions such as rumination, self-doubt, low self-efficacy, and negative self-appraisal contribute to, intensify, and maintain PIU (Davis, 2001;Kwon, 2011). Moreover, he argued that the stressor triggers underlying psychopathology that results in PIU (Davis, 2001).

According to Davis (2001), PIU is classified into two forms: specific and generalized. Specific PIU is related to overuse of particular Internet content that does not involve the Internet itself; generalized PIU is related to overuse of the Internet itself (Young & de Abreu, 2010). Specifically, occurrences of generalized PIU is closely linked to use of communication contents including e-mail or social networks. Therefore, the person with generalized PIU tends to prefer use of virtual communication to face-to-face, interpersonal communication (Davis, 2001).

### **2.3.2 Escape from self theory**

Kwon and colleagues (2011) conceptualized PIU as the process of escape using Baumeister's (1990) escape from self theory. In light of the theory that a tendency to escape from the self could result in various self-destructive behaviors, Kwon and colleagues (2011) identified via structural equation modeling that escaping from the self could lead to a process of PIU. According to this model, a person's real-ideal self discrepancy influences his or her negative mood in which the person adopts and then revisits repeatedly the Internet to attempt an escape from painful reality (Young & de Abreu, 2010).

### **2.3.3 Compensation theory**

Compensation theory was formulated to account for the phenomenon of PIU among adolescents in China (Young & de Abreu, 2010). The compensation theory

addressed that the Internet-engaging activities by the adolescents stem from “spiritual compensation” for academic pressure and psychological compensation for self-identity, self-esteem, and social networking (Tao, 2005). Parsons (2005) also indicated that PIU stems from “an attempt to compensate for unsatisfactory relationships or situations” (p. 28). According to Parsons (2005), as individuals gradually increase their reliance on the Internet to improve their relationships, the stress stemming from excessive Internet use and from failure to discontinue the problematic Internet use, leads the individuals into seeking a deeper level of compensatory Internet use behavior and then significant impairments in their daily lives.

## **2.4 Primary factors of PIU**

Researchers have consistently indicated that gender, time of Internet use, depression, acculturative stress, and relational conflicts may contribute to PIU. Conversely, they have also reported that good quality of relationships or perceived social support may be determinants of decreased PIU.

### **2.4.1 Gender**

Research has stated that gender differences in Internet use exist. These differences are frequently found in reasons for accessing the Internet (Forstson, Scotti, Chen, Malone, & Del Ben, 2007). The studies showed that men access the Internet for the purposes of seeking entertainment, leisure, researching purchases, or checking the news; women access the Internet for the purposes related to interpersonal communication, educational assistance, or school-related research (Odell, Korgen, Schumacher, & Delucchi, 2000; Weiser, 2001).



### **2.4.2 Time spent online**

Time spent online has been a key index for PIU and problematic Internet users tend to spend more time online compared to non-addicts due to time distortion (Chou, 2001). Young's study (1998) reported that participants in the Internet-dependent group spent about 40 hours per week while those in the non-dependent group spent about 5 hours per week. Furthermore, a study reported that Internet addicts spent three times more hours (20-25 per week) online than non-addicts (Chou & Hsiao, 2000). An empirical study showed that participants with problematic Internet use reported the highest rate (96%) of problems in time spent online (Young, 2007).

With respect to the relationship between PIU and time spent online, research has focused on two distinct perspectives: clinical pathology and deficient self-regulation (Tokunaga & Rains, 2010). The former posits that psychosocial problems influence the increased amount of time spent online, which leads to PIU (Chou & Hsiao, 2000; Hur, 2006; Morahan-Martin, 1999). The latter posits that psychosocial problems weaken self-regulation, thereby developing into PIU, which eventually increases the amount of time spent online (LaRose, Lin, & Eastin, 2003).

### **2.4.3 Depression**

Depression has been known as one of predictors of PIU. The meta-analysis study by Tokunaga and Rains (2010) found that depression is a strong predictor of PIU and has an indirect significant effect through PIU on time spent online. A study by Fortson and colleagues found that there was a positive association between depressive symptoms and problematic Internet use among college students (Forstson, Scotti, Chen, Malone, & Del Ben, 2007). Another study on psychiatric comorbidity of PIU in college students also

reported the link between depressive disorders and PIU (Ko, Yen, Chen Chen, & Yen, 2008). Yen and colleagues also found that adolescents with higher PIU reported higher level of depression (Yen, Ko, Yen, Wu, & Yang, 2007).

#### **2.4.4 Acculturative stress**

Acculturative stress is often defined as stress that occurs in the process of adaptation to the host culture from a person's own culture (Choi, 1997; Mori, 2000; Sandhu & Asrabadi, 1994; Yang & Clum, 1994). According to the acculturation model by Berry (1997), a person's acculturative stress has negative effects on his or her psychological well-being. Research has also shown that acculturative stress may have negative impacts on disruptive behaviors such as drug use, homicide, and suicide (Berry, 1980). It is noted that a higher level of acculturative stress is associated with many factors: socio-demographic characteristics (e.g., older age, female, longer years of education, shorter period of residency in the United States), lower English proficiency, a deeper level of psychological distress, mode of acculturation, loss of social support, increased family and cultural conflicts, personality, and different social values and norms (Bacallao & Smokowski, 2007; Cuellar, Arnold, & Gonzalez, 1995; Flores, Tschann, Martin, & Pantoja., 2004; Padilla & Borrero, 2006).

Particularly, studies on international students in the United States identified that the more discrepancy there is between the host culture and the culture of origin, the higher the level of acculturative stress (Lee, Koeske, & Sales, 2004; Yang & Clum, 1994). Based on this relationship, those in the United States coming from Asian countries such as Korea are more likely to suffer acculturative stress than those from Western countries (Lee, Koeske, & Sales, 2004; Poyrazli, Kavanaugh, Baker, & Al\_Timimi, 2004).

Furthermore, research has shown that there is an indirect impact of acculturative stress on intimate relationships of individuals (Zheng & Berry, 1991; Neff & Hoppe, 1992).

Psychological problems caused by acculturative stress affect an individual's intimate relationships adversely (Karapanagiotis, 2008).

#### **2.4.5 Marital intimacy**

Marital intimacy has been widely employed to measure the degree of intimacy experienced in one's marital relationship (Van den Broucke, Vertommen, & Vandereycken, 1995). Acitelli and Duck (1987) defined marital intimacy either as a process or as a state. Gold (1997) viewed marital intimacy as "a subjective relational experience," which allows a partner to assess intimacy on a basis of reciprocal interactions within the relationship (Heller & Wood, 2000; Prager & Buhrmester, 1998). Researchers have attempted to define intimacy in varying aspects. Schaefer and Olson (1981) defined intimacy as a process and an experience resulting from disclosing intimate topics and sharing intimate experiences. The intimacy defined by Schaefer and Olson was comprised of five components: emotional, social, sexual, intellectual, and recreational (Karapanagiotis, 2008). Later, Wynne and Wynne (1986) regarded intimacy as a trust-based subjective experience through which partners care and nurture one another. In line with the definition by Wynne and Wynne, Weingarten (1991; 1992) viewed intimacy as shared meanings based on shared experiences as well as interactions with partner (Rampage, 1994). Overall, the common features of intimacy that researchers have described can be summarized as the meanings of shared experiences through interactions between partners.

Although researchers have consistently addressed the negative impact of PIU on family relationships, there are few studies that examined the relationship between marital relationships and PIU (Yen, Ko, Yen, Wu, & Yang, 2007). In Young's study (2007), 85% of 114 of problematic Internet users reported that they had problems with relationships associated with compulsive use of the Internet. Another study by Young (1998) showed that problematic Internet users are likely to reduce time with family and spend greater time using the Internet alone. Moreover, Brenner (1997) found that respondents showed a tendency to spend less time face-to-face with friends and simultaneously to spend more time with virtual friends.

According to communication theories, good marital relationships help couples cope appropriately with psychological problems (Kerkhof, Finkenauer, & Muusses, 2011). Thus, when there is poor relationship quality, it follows that people may rely heavily on media contents to escape from the relational situation (Caughlin, 2002; Christensen & Heavey, 1990; Vorderer, Klimmt, & Ritterfeld, 2004; Zillmann, 1988). These arguments are consistent with findings by Korgaonkar and Wolin (1999) that online users were motivated by escapism, using the Internet in order to avoid loneliness. Suler (1996) addressed the link between online communication behaviors and the third level of Maslow's hierarchy (a sense of belonging, interpersonal contact, and social recognition). The study suggested that people tend to participate in an interesting virtual environment due to their pursuit of feeling connected to somebody (Suler, 1996). Furthermore, a study indicated that boredom is the single critical determinant of

becoming an addict, suggesting the Internet with its chat rooms allows lonely people to fill their needs (Gong, 1998).

#### **2.4.6 Social support as a mediator to stress**

The family has often been characterized as a social unit in which family members interact with each other in ongoing relationships. The interactions influence other family members in either positive or negative ways (Walsh, 1996). In addition, from a family resilience perspective, the family has resources to cope with stresses that threaten familial stability and to recover from damages from continuing or persistent stresses (McCubbin & McCubbin, 1998; Walsh, 1996). In light of the definitions of intimacy and marital intimacy mentioned earlier, marital intimacy of a family is likely to enable family members to cope with stresses through how family members perceive the reciprocal interactions with the members as well as the resources that they have.

Theories also indicate a role of marital intimacy in coping with stresses. The Family Adjustment and Adaptation Response Model (Patterson, 1988) demonstrates how a family copes with internal and/or external stresses. Specifically, this model can be used to explain how a social support from family functions as a buffer of acculturative stress. Hobfoll & Vaux (1993) defined perceived social support as one's perception of available support. In light of this definition, marital intimacy can be a significant social support at a family level. According to the model, when a family as a unit encounters family demands (e.g., acculturative stress) from three different levels of the ecosystem, the family responds to the stress based on family capabilities (e.g., family social support) from the different levels. At this point, family meanings (perception of family demands and

capabilities) determine the nature and extent of both family demands and capabilities (Patterson, 1993; Patterson & Garwick, 1994; Patterson, 2002).

Therefore, the better the perceived quality of relationships in an immigrant family, the faster and the more appropriately the family copes with stresses such as acculturative stress. By contrast, an immigrant family whose relational quality is perceived as poor may be more vulnerable to the stresses compared with one in a better relationship. In particular, the quality of relationships between spouses in a family seems to be more influential to each other than the quality of any other relationships such as parents and children, siblings, or grandparents and grandchildren. Most married couples represent a core relationship within a family, spending the greatest amount of time together and having the greatest influence on each other. The poor relationship in a couple may weaken the capability to cope with stresses (Vinokur & van Ryn, 1993). The poor relationship itself may also play a role in worsening the stresses such as acculturative stress.

Given the characteristic of marital intimacy as a subjectively perceived relational experience, marital intimacy is one of the most significant components of social support. Research on effects of social support on mental health has shown that social support has distinct dichotomous functions: beneficial and adverse. If a person perceives his or her relationship with the partner as close, the relationship has a positive impact on his or her psychological well-being. On the contrary, if a person perceives his or her relationship with the partner as poor, the relationship has a negative impact on his or her mental health.

Research has supported the negative association between daily stress such as acculturative stress and social support especially from families that plays a key role in coping with the stress (Lee, Koeske, & Sales, 2004; Mallinckrodt & Leong, 1992). As mentioned earlier in the acculturation model, there is a negative association between acculturative stress and psychological well-being, with perceived social support mediating the relationship between acculturative stress and mental health (Berry, 1997; Koeske & Koeske, 1991b; Lee, Koeske, & Sales, 2004; McClelland & Judd, 1993; Morris, Sherman, & Mansfield, 1986).

In light of these theoretical models and the research findings, two models are proposed. First, marital intimacy that a couple perceives as good may play a key role in buffering the effects of acculturative stress on PIU (Cohen, 2004). Second, couples with a low level of marital intimacy and a high level of acculturative stress are likely to be at higher risk of PIU (Lee, Koeske, & Sales, 2004).

## **2.5 Research gaps**

Most studies on PIU have focused on PIU in adolescents or college students, and few studies have examined PIU among adult married couples. Also, the factors that affect PIU among ethnically diverse couples who are in the minority in the United States remain unclear. Further, little research has been completed that investigates the factors influencing PIU among Korean families, especially married couples living in the United States. While there may be multiple predictors of PIU among people, researchers have focused on individuals' acculturative stress. Some researchers have recently focused on relationship quality as a potential influential factor and an under-researched area of interest in relation to PIU among married couples (Kerkhof, Finkenauer, & Muusses,

2011). However, research to-date has failed to find evidence that relationship quality may predict PIU or mediate effects of the predictors on PIU in intimate relationships, whereas research has confirmed negative effects of PIU on relationship quality (Blais, Craig, Pepler, & Connolly, 2008; Locke, 1998; Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998; Mesch, 2006; Nie & Erbring, 2000; Valkenburg & Peter, 2007). The effect of relationships on PIU has been studied less frequently (Kerkhof, Finkenauer, & Muusses, 2011).

Moreover, the research often leaves an incomplete picture of the associations between PIU and acculturative stress and/or relationship quality, focusing on an individual level rather than interpersonal level as well as relying on samples from ethnically/racially major groups rather than from minority groups in the United States (Kerkhof, Finkenauer, & Muusses, 2011; Rusbult & Buunk, 1993; Young, 2007). Thus, many questions remain unanswered about the dynamics between PIU and acculturative stress and relationship quality, specifically, within the marital relationships among Korean couples in the United States. There is a critical need for a more comprehensive examination of acculturative stress as well as marital quality as a potential predictor of or a mediator of PIU in order to identify risk and protective factors for PIU in clinically underserved Korean couples in the United States.

## **2.6 Purpose of research**

The purpose of the present study is to explore the relationship between PIU and acculturative stress and marital intimacy among Korean married couples in metropolitan areas in Minnesota. To address this purpose, specific aims include: (1) examining the impact of acculturative stress on PIU; (2) assessing the impact of marital intimacy on PIU;



and (3) investigating the role of marital intimacy as a mediator to acculturative stress toward PIU.

## **2.7 Research hypotheses**

Based on previous research findings and the current study purposes, it is hypothesized that couples experiencing a higher level of acculturative stress and in poorer marital relationships may seek the Internet as an attractive alternative to the current relationship with their partner, which in turn may lead to PIU (Drigotas & Rusbult, 1992; Lydon, Menzies-Toman, Burton, & Bell, 2008; Rusbult & Buunk, 1993). Thus, the research hypotheses include:

H1. A person's acculturative stress will predict PIU rated by the person.

H2. A person's marital intimacy will predict PIU rated by the person.

H3. A person's marital intimacy will mediate the relationship between acculturative stress and PIU

H4. A person's acculturative stress will predict PIU rated by the person's partner.

H5. A person's marital intimacy will predict PIU rated by the person's partner.

H6. The difference between self-rated and partner-rated IAT scores will be associated with acculturative stress and marital intimacy. This difference can be used to help practitioners working with couples with PIU interpret the score gaps reported by each spouse with regard to spouse's level of PIU.

## **2.8 Significance of research**

Addressing PIU among adult Korean married couples is an important and relatively unexplored topic. First of all, PIU especially within a family structure may be likely to lead to various domestic issues such as divorce, violence, and child neglect or abuse,

which are difficult to be detected easily by non-family members (Quittner, 1997; Young, 1996). Taking into consideration the existing research findings that problematic Internet users tend to be aggressive, violent, and deficient in self-control toward not only non-family members but also their family members, the child living with these problematic Internet users at home may be more likely to be at higher risk of experiencing physical or mental abuse or neglect than a child living with normal Internet users. Therefore, PIU in a family should be explored to help prevent this potential threat to the family.

Next, the role of acculturation within married couples has rarely been explored. To date, the importance of acculturation in the PIU has been reported in two aspects. First, acculturation motivates those who are less acculturated into the host culture to rely on Internet use as an escape from reality. Second, the lack of acculturation hinders individuals from seeking mental health services such as counseling or therapy because of language barriers based on poor English proficiency. Therefore, investigating PIU among Korean married couples who are less acculturated into American culture is worthwhile. Furthermore, mental health practitioners who might meet with immigrants or refugees who are less acculturated and suffer from PIU need to understand PIU in order to help these problematic Internet users better cope with their difficulties in living in the United States.

Addressing PIU among Korean couples is beyond a matter of acculturation. Ethnic minority groups in the United States such as Koreans tend to stigmatize discussing a mental health issue itself with non-family members. Further, because of this social stigmatization, they even discourage family members from seeking mental health

services from counselors or therapists (Wu, Kviz, & Miller, 2009). Therefore, addressing PIU among those couples offers community mental health practitioners an opportunity to find best practices culturally tailored for these groups.

Finally, discussing PIU among Korean couples is of significance and importance in that it may shed light on how serious couples Internet-related problems are, as well as how to cope properly with the conflicts and problems derived from PIU in marriage.

## 3 METHODS

### 3.1 Participants

Sixty three couples were recruited by the researcher via a combination of a convenience and snowball sample. A total of forty Korean heterosexual couples completed questionnaires assessing their perceptions of Internet addiction, acculturative stress, and marital intimacy. All couples participated in this study as a couple and met the following inclusion criteria: ages 18 to 54, Korean, and married, living together in Minnesota and signing informed consent. The participant couples ranged in age from 28 to 52 years ( $M = 39.1$ ,  $SD = 5.75$ ) and had been married between 1.5 to 23.5 years ( $M = 11.1$ ,  $SD = 5.69$ ). The couples had been in the U.S. on an average of 8.6 years ( $SD = 6.25$ ; range = 0.7 to 30 years) and had been educated for an average of 19.2 years ( $SD = 3.60$ ; range = 12 to 30 years). The couples had an average of 1.7 children (range = 0 to 3). About 40% of the couples reported a household annual income between \$25,001 and \$50,000, 46% reported more than \$50,000 and 15% reported \$25,000 or less. Thirty four percent of the couples were employed while 31% were unemployed; 24% were undergraduate or graduate students while 11% were self-employed. Forty three percent of the couples did less than one hour of exercise per week with about half of them doing one to five hours exercise and 6% doing more than 6 hours of exercise per week, respectively. For religion, 85% of the couples were Protestant. Twenty one percent of the couples reported drinking alcohol.

### 3.2 Procedures

All of the couples were recruited between September 2011 and February 2012 from the Minnesota Twin Cities metropolitan areas' Korean communities, including: the

University of Minnesota housing apartments, local churches, and college alumni associations, etc. For the recruitment of this population, a combination of a convenience and snowball sample was employed using flyers, acquaintances, and community leaders related to Korean organizations. To be included in the study both spouses needed to consent to participation and each spouse provided an email address to the researcher. The requirement for both spouses to participate was essential because the current study was designed to examine predictors to problematic Internet use of spouses as well as their mutual effects on spouses. All email addresses were kept confidential. A consent form for this study was sent via the obtained email separately to each spouse of the participant couples. Upon the receipt of the consent forms from both spouses, the study survey questionnaire was sent to each via personal email. The completed survey questionnaire was sent directly to the researcher via the researcher's email that was provided to all participants in order to keep all information obtained confidential and to prevent social desirability bias with face-to-face contact. Each participant was provided with an online gift voucher worth \$5 as an honorarium. The participation was strictly voluntary. The Institutional Review Board at the University of Minnesota approved this study.

### **3.3 Measures**

Measures were selected from the PIU literature as well as family relationships literature. The bilingual researcher translated the measures into Korean, and another bilingual researcher back-translated the measures translated into Korean into English again. Finally, the researchers compared the original measures written in English with the back-translated measures in English.

### **3.3.1 Socio-demographics**

The questionnaire included socio-demographic items measuring the participants' gender, age, length of education, marriage, and residence in the United States. In addition, participants were asked to report the number of children they had and their annual income.

### **3.3.2 Internet use and psychological well-being**

The questionnaire included health-related information: having health insurance and a primary doctor, mental health service experience, willingness to use mental health services, preference for therapy type, and barriers to mental health services in the United States. The health information also included health status, frequency of exercise and drinking and smoking. Moreover, depression was assessed by the Center for Epidemiologic Studies Depression Scale (CES-D). Satisfaction of social support was rated by the Social Support Questionnaire 6 (SSQ6) (Sarason, Sarason, Shearin, & Pierce, 1987). Finally, time spent online was reported based on per day vs. week and essential use vs. non-essential use. The online application name or site the participant couples visited most often or considered most important was obtained in a ranking order from 1 to 10.

### **3.3.3 Acculturative stress**

Acculturative stress was assessed by the index of life stress (ILS) for the study of cultural adjustment among Asian international students (Yang & Clum, 1994). The ILS consisted of 31 items of six acculturative stressors, including: English language proficiency, academic pressure, cultural adjustment, financial concern, perceived racial discrimination, and future concern (Kim, 2009). The response ranged from 1 to 7, with 1

and 7 indicating ‘never’ and ‘very often,’ respectively. The test-retest reliability of the ILS was reported as .87; the internal consistency estimate .86 (Yang and Clum, 1994). For this study, the reliability Cronbach’s alpha was .91.

#### **3.3.4 Marital intimacy**

Participant couples rated marital intimacy they perceived to their partners using the Marital Intimacy Questionnaire (MIQ; Broiucke, Vertommen, & Vandereycken, 1995). The MIQ is a 56 item self-report questionnaire assessing 5 components (Intimacy problems, Consensus, Openness, Affection, and Commitment) of marital intimacy. Due to the research interest in the marital commitment, each of the subscales was analyzed. All responses to each sub-scale (e.g., “My partner and I remain faithful to each other”) were computed using a 10 point-Likert scale ranging from 1 (strongly disagree) to 10 (strongly agree) and then summed with a minimum score of a10 and a maximum score of 100. Previous reliability testing has shown that the commitment subscale has a Cronbach’s alpha of .70 and validity ranging from -.42 to .28. For this study, the reliability Cronbach’s alpha was .59.

#### **3.3.5 Internet addiction**

Participant couples self-reported their IA using Young’s Internet Addiction Test (IAT; Young, 1998). The IAT has been widely used to assess problematic Internet use of individuals as well as couples across cultures and in many clinical settings. The IAT consists of 20 items ranging from 0 (minimum) to 100 (maximum). Furthermore, participants were asked to report their partner’s IA using the partner’s IAT (e.g., “How often do you find that your spouse stays on-line longer than he/she intended?”). In particular, this study gathered participants’ self-reported IAT and also participants’ report

of their partner's IAT since many researchers have addressed the tendency of Internet addicts to hide his or her own heavy use of the Internet (Hechanova & Czincz, 2008; Young & de Abreu, 2010). Thus, in this study we were able to compare an IAT score which a person self-reported with an IAT score which the partner reported for the person, allowing for interesting comparisons regarding concordance and discordance on responses between partners. The literature has reported reliability of the IAT with Cronbach's alpha ranging between .54-.93, and all six factors significantly correlated with each other (Hardie & Tee, 2007; Widyanto & McMurrin, 2004; Young, 1998). Reliability of person-reported IAT and a person-reported partner's IAT has been high, with Cronbach's alphas of .90 and .97, respectively.

### **3.3.6 Data analysis**

For descriptive statistics of the dyadic data, paired t-tests were conducted to examine the differences in time spent on the Internet per week, marital intimacy, a person's IAT score, and partner self-reported IAT score, respectively, for men and women. A Spearman correlation was used to test associations of the variables between men and women.

To test the actor and partner effects of the models, the Actor-Partner Interdependence Model (APIM) was used. The APIM is a statistical methodology designed to use the dyad as the unit of analysis and to allow for gender interactions (Kenny, Kashy, & Cook, 2006). In dyadic relationships such as married couples, a person's cognitions, emotions, and behaviors impact his or her spouse's, and thus are not independent (Cambell & Kashy, 2002). Therefore, it is essential that consequences of one person especially in a close relationship should be analyzed within the nature of the



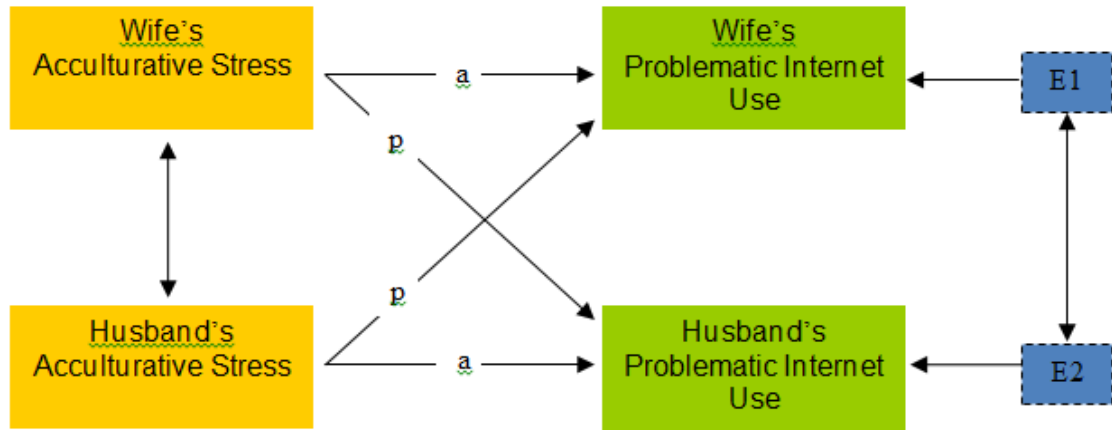
interdependence. However, it is true that many studies on relationships have either ignored these interdependence effects or focused on intrapersonal effects, thereby biasing tests of statistical significance (Kenny, 1995; Kenny & Judd, 1986; Rodriguez, Overup, & Neighbors, 2013).

The APIM allows the analysis to overcome these statistical limitations. In the early study on providing methods to estimate actor, partner, and interaction effects for dyadic data, Cambell and Kashy (2002) pointed to advantages of the APIM:

“This model [APIM] suggests that a person’s independent variable score affects both his and her own dependent variable score (known as the actor effect), and his or her partner’s dependent variable score (known as the partner effect). The partner effect from the APIM directly models the mutual influence that may occur between individuals involved in a dyadic relationship.” (p. 328)

The APIM analyses in this study followed the guidelines provided by Cambell and Kashy (2002): each score of individual marital intimacy was connected with his or her own score as well as with his or her partner’s marital intimacy score; a person’s acculturative stress, marital intimacy, the amount of time a person spent on the Internet per week were connected as the marital intimacy score was connected. Finally, H1, H2, H3, H4, and H5 were tested with the APIM to analyze dyadic data. See Figure 1 for a visual representation of the APIM model for this study. All data analyses were conducted using SAS 9.3 software.

Figure 1. APIM of acculturative stress



APIM model where a is the actor effect and p is the partner effect

## 4 RESULTS

### 4.1 Sample characteristics

#### 4.1.1 Socio-demographics

**Table 1. Socio-demographics (Values are mean  $\pm$  standard deviation or percent)**

By couple (n=40)				
Years of marriage (range from 1.5 to 23.5)			11.1 $\pm$ 6	
Number of children			1.7 $\pm$ 1	
None			8%	
1 or more			93%	
Age 5 or less			30%	
Age 5 or more			70%	
Household income (annual total)				
\$25,000 or below			13%	
\$25,001-\$50,000			43%	
\$50,001 or more			45%	
Number of student(s) within couple				
Neither			73%	
At least one			28%	
(Both)			(10%)	
By gender	Spearman correlation	Wife (n=40)	Husband (n=40)	P-value
Age (range from 27.5 to 52.3)	0.88	38.1 $\pm$ 6	40.2 $\pm$ 6	<.0001
Years in the U.S. (range from 0.7 to 30.0)	0.96	8.2 $\pm$ 6	9.1 $\pm$ 6	0.0379
Years of education (range from 12 to 30)	-0.004	17.4 $\pm$ 3	21.0 $\pm$ 4	<.0001
Highest degree completed				
High School		0%	3%	
College		55%	8%	<.0001
Master		38%	38%	
Doctorate		8%	51%	
Financial status perception (1=very bad; 5=very good)	0.70	2.9 $\pm$ 1	3.0 $\pm$ 1	0.4738

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Employment				
Employed		8%	60%	
Self-employed		13%	10%	<.0001
Student		18%	30%	
Unemployed		63%	0%	
Religion				
Protestant		90%	80%	0.2104
Non protestant		10%	20%	
English fluency	0.13	2.7 ± 1	3.4 ± 1	0.0004
(1=very poor; 5=very good)				
Health status	-0.11	3.4 ± 1	3.5 ± 1	0.6799
(1=very poor; 5=very good)				
Exercise (per week)				
Less than 1 hour		45%	40%	
1 to 5 hours		45%	58%	0.2826
6 or more		10%	3%	
Alcohol: drinks per week				
Non-drinker		89%	69%	
1 or less		11%	26%	0.0980
More than 1		0%	5%	

---

A variety of sociodemographic information was gathered about each participant. A summary of this information can be found in Table 1. The participant couples in this study were married for an average of 11 years and had about 2 children. More than half reported that their annual household total income was \$50,000 or below. In one out of four of the couples the spouse was either an undergraduate or a graduate student and ten percent of the couples indicated both spouses were undergraduate or graduate students. On average, husbands were older, more educated, more fluent in English, and stayed longer in the U.S. than their wives. There was no difference in perceptions of financial

and health status for husbands and wives. Husbands had completed almost two times more graduate degrees than wives (89% vs. 46%). Most husbands were employed; most wives were unemployed. Both husbands and wives reported their religion was Protestant. Fifty five percent of wives and 60% of husbands reported they exercised for more than one hour per week. About three times as many as husbands reported drinking alcohol per week compared to wives (31% vs. 11%).

#### 4.1.2 Internet use

**Table 2. Internet use (Values are mean  $\pm$  standard deviation or percent)**

By gender	Spearman correlation	Wife (n=40)	Husband (n=40)	P-value
Total hours (per week)	-0.11	16.3 $\pm$ 10	33.0 $\pm$ 20	<.0001
Less than 5 hours		13%	5%	0.2352
5 hours or more		88%	95%	
For nonessential use	-0.05	9.4 $\pm$ 6	11.3 $\pm$ 8	.244
For essential use	-0.16	8.1 $\pm$ 8	21.7 $\pm$ 16	<.001

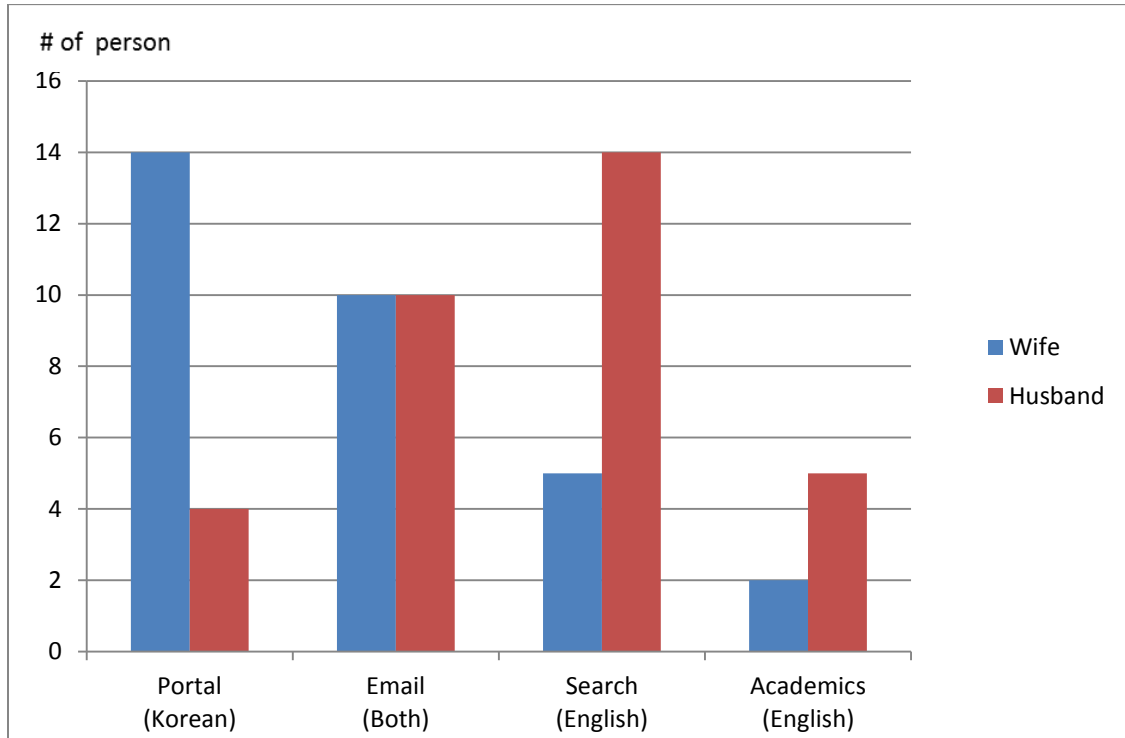
Internet use by the couples for the past month was investigated (See Table 2). For time spent online, the total amount of hours husbands spent per week was twice that of wives. In the division of the time spent online at five hours per week, 13 percent of wives spent less than five hours per week online, whereas five percent of husbands spent less than five hours per week online. In the division by essential (e.g., study, job) vs. nonessential (recreation, entertainment) use of the Internet, husbands spent almost three times more hours online for the essential use than wives, while the time for nonessential use was similar.

**Table 3. Online applications (essential + nonessential) by gender**

Wife			Husband		
Rank	%	Application or site (language)	Rank	%	Application or site (language)
1	36	Portal (Korean)	1	35	Search (English)
2	26	Email (Both)	2	25	Email (Both)
3	13	Search (English)	3	13	Academics (English)

The participant couples were asked to report online applications or sites along with their languages used which they visit most often or consider most important according to the ranking order (See Table 3). Wives reported using portals in Korean the most frequently; husbands reported using search engines in English the most frequently. Using email in both English and Korean was next most frequent for both wives and husbands. The least frequent online application was using search engines in English for wives while husbands reported using academics in English.

**Figure 2. Online applications (essential + nonessential) by gender**



**4.1.3 Mental health use**

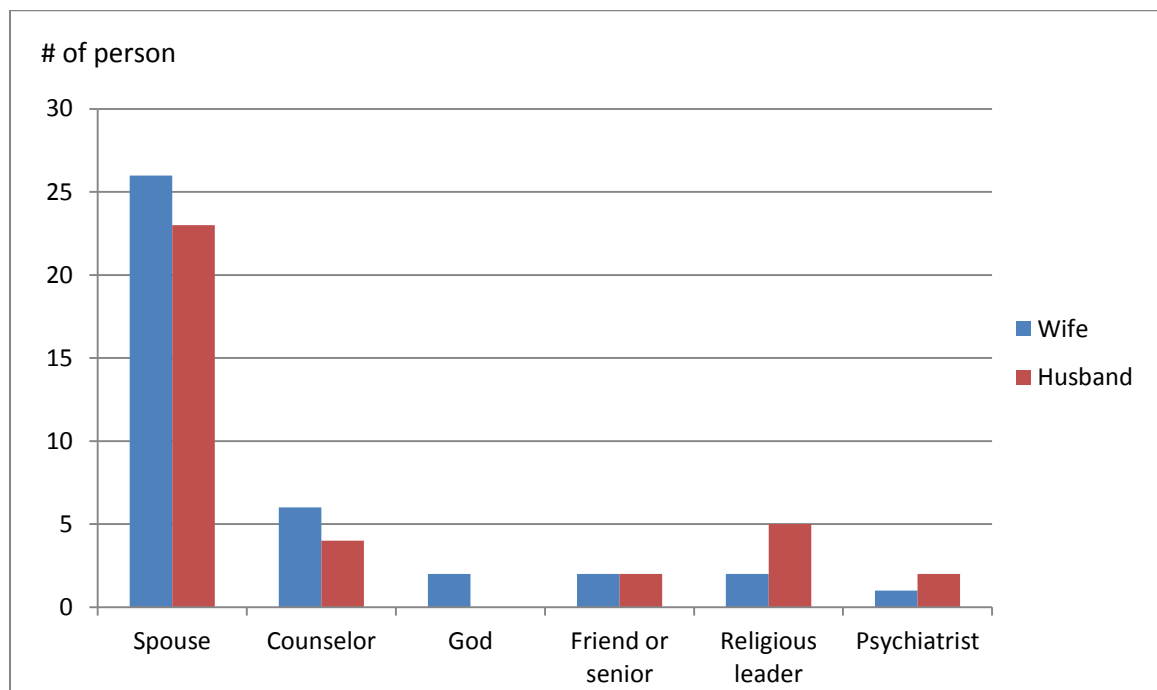
**Table 4. Persons you ask for help with problems related to Internet use**

Wife			Husband		
Rank	%	Person	Rank	%	Person
1	65	Spouse	1	61	Spouse
2	15	Counselor	2	13	Religious leader
3	5	God	3	11	Counselor
3	5	Friend or senior	4	5	Friend or senior
3	5	Religious leader	4	5	Psychiatrist

The participant couples were asked to report which person(s) they ask for help when they experience distress caused by Internet use. They were also asked to report the individuals they asked for help according to the order of each person from most to least

important. The couples were provided examples including psychiatrist, counselor/therapist, doctor, parents, spouse, friend, religious leader, etc. As seen in Table 4, more than half of both wives (65%) and husbands (61%) reported spouse as the person they ask for help the most. For wives, counselor was the second person, followed by God, friend or senior, and then religious leader. For husbands, religious leader was the second most frequently asked for help, followed by counselor, friend or senior, and then psychiatrist.

**Figure 3. Persons you ask for help with problems related to Internet use**





**Table 5. Health information, willingness to use mental health service, and preference for therapy type**

	Wife	Husband	P-value
Health insurance			
Yes (%)	88	93	0.4561
Having a primary doctor			
Yes (%)	50	41	0.4233
Willingness to use mental health service			
Yes (%)	87	78	0.2600
Preference for therapy type <sup>†</sup>			
Individual therapy (%)	80	71	
Couple therapy (%)	11	23	
Group therapy (%)	6	16	

<sup>†</sup>: Some chose more than one.

As seen in Table 5, most wives (88%) and husbands (93%) had health insurance while half of wives and about forty percent of husbands, respectively, had a primary doctor. For the question of willingness to use mental health service, wives reported greater willingness than husbands (87% vs. 78%). Those who showed willingness to use mental health service were also asked to select the type of therapy (individual, couple, or group therapy allowing for multiple choices) they prefer. Most of wives (80%) and husbands (71%) preferred individual therapy. More husbands expressed a preference for couple or group therapy than wives.

**Table 6. Barriers to the use of mental health service**

Wife			Husband		
Rank	%	Barrier	Rank	%	Barrier
1	38	Language	1	26	Lack of information
2	25	No previous experience	2	21	No previous experience
3	13	Cost	3	16	Language
4	8	Child care	3	16	Cost
5	5	Lack of information	5	13	Social stigma
5	5	Social stigma	6	3	Child care

Next, the participant couples were asked to report what barriers they expect in seeking mental health services in the United States. The greatest barrier varied between wives and husbands with 38% of wives reporting language and about a quarter of husbands reporting lack of information (See Table 6). No previous experience was the second barrier for both wives and husbands (25% vs. 21%). Thirteen percent of wives reported cost as the third barrier, followed by child care (8%), and then lack of information (5%) and social stigma (5%); 16% of husbands reported language and cost as the third ones, followed by social stigma (13%) and then child care (3%).

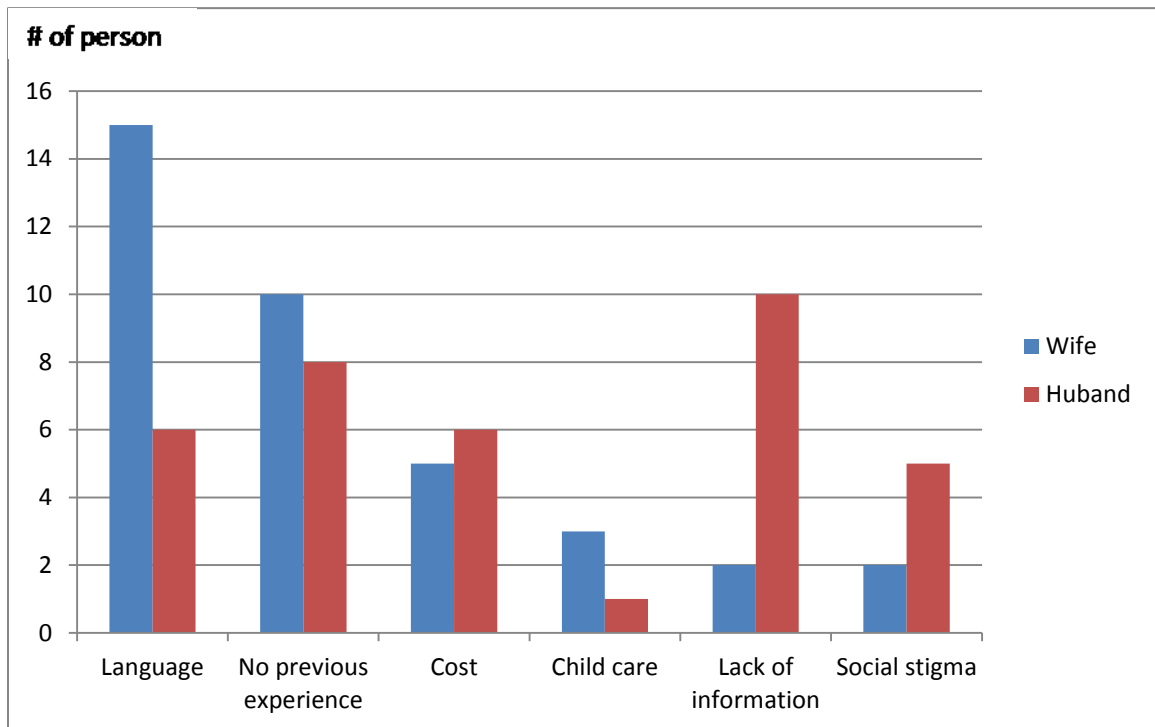


Figure 4. Barriers to the use of mental health service

#### 4.1.4 Psychological well-being

Table 7. Acculturative stress, depression, and satisfaction of social support

By gender	Spearman correlation	Wife (n=40)	Husband (n=40)	P-value
Acculturative stress (1= lowest; 7=highest)	0.51	3.1 ± 1	2.8 ± 1	0.0226*
Depression (0=min; 60=max)	0.21	11.8 ± 6	8.3 ± 8	0.0109*
< 16		80%	78%	0.7846
≥ 16 (clinical cutoff)		20%	23%	
Social support satisfaction (1=very dissatisfied; 6=very satisfied)	0.14	4.6 ± 1	5.0 ± 1	0.0204*

Note: Values are mean ± standard deviation or percent. A \* means a statistically significant finding.

This study assessed acculturative stress, depression, and social support satisfaction among the participant couples at the point. As seen in Table 7, on average, wives reported more acculturative stress and depression than husbands whereas wives reported less satisfaction with social support than husbands, with all indicating significant difference ( $P < .05$ ).

#### 4.1.5 Internet addiction: IAT

**Table 8. Internet addiction test**

By gender	Wife (n=40)	Husband (n=40)	P-value
Internet addiction rated by self (0 to 100)	20.4 ± 10	19.4 ± 12	0.6238
Internet addiction rated by spouse (0 to 100)	10.4 ± 10	21.0 ± 19	0.0011*

Note: a \* means a statistically significant finding.

The participant couples reported Internet addiction test scores of themselves as well as their spouse. As seen in Table 8, on average, both wives and husbands self-reported similar scores (20.4 vs.19.4) of Internet addiction whereas husbands reported statistically lower scores of Internet addiction for their spouses than did wives (10.4 vs. 21).

#### 4.1.6 Marital intimacy

**Table 9. Marital intimacy rating by gender (number ± number = mean ± standard deviation)**

Marital Intimacy (1=least, 10=most)	Spearman correlation	Wife (n=40)	Husband (n=40)	P-value
Overall marital intimacy <sup>†</sup>	0.44	23.9 ± 6	25.2 ± 5	0.1612
Intimacy Problems	0.33	4.2 ± 1	4.1 ± 1	0.5578
Consensus	0.36	6.9 ± 2	7.4 ± 1	0.0642
Openness	0.35	7.0 ± 1	7.0 ± 1	0.9514
Affection	0.67	7.4 ± 1	7.8 ± 2	0.0901

Commitment	0.49	6.9 ± 1	7.1 ± 1	0.1367
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†: Overall marital intimacy = (Consensus + Openness + Affection + Commitment) - Intimacy Problems.

Marital intimacy of the participant couples was assessed. On average, husbands reported more consensus, affection, commitment in marital intimacy than wives. Furthermore, wives reported more intimacy problems than husbands while means scores on openness was the same (See Table 9).

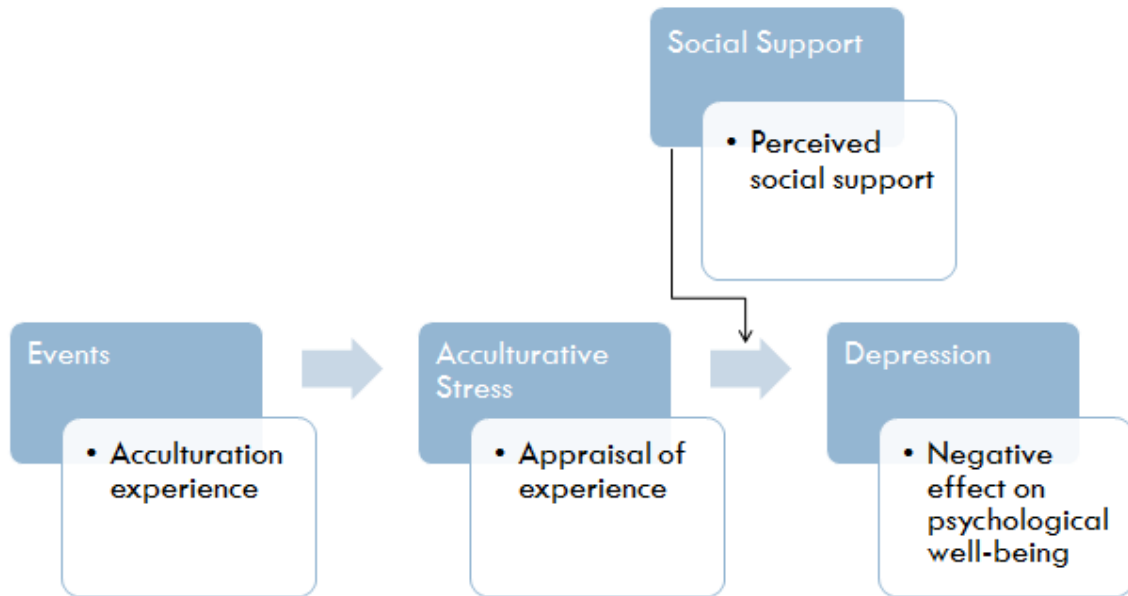
#### 4.1.7 Internet use hours and Internet addiction

The result showed that there are positive associations between nonessential Internet use and (self-rated or partner-rated) IAT scores. Given the time spent online for the purpose of nonessential Internet use, the analysis by gender revealed that husbands tended to report lower levels of self-rated and partner self-rated IAT scores, than did wives.

#### 4.2 Checking Zhang’s Adaptation of Berry’s Acculturation Model

The present study employed Berry’s (1997) acculturation model adapted by Zhang (2012) as a theoretical frame to test the effects of acculturative stress as a predictor on Internet addiction as well as effects of perceived social support (i.e., marital intimacy in this study) as a mediator on the relationship between acculturative stress and Internet addiction (See Figure 5). Before conducting these tests, therefore, it was essential that this study should first test if the relationships between the corresponding variables (acculturative stress, depression, and satisfaction of social support) generated by this study data were properly established based on the conceptual model.

Figure 5. Zhang's adaptation of Berry's acculturation model

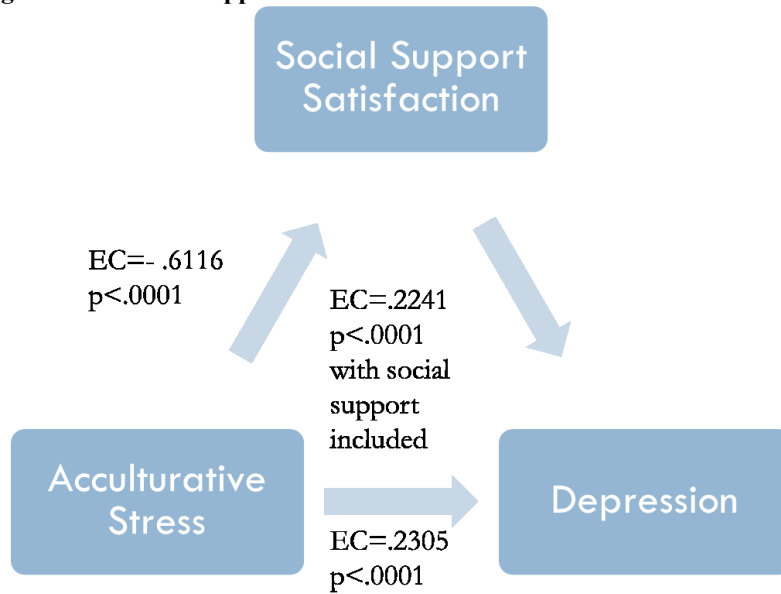


First, the study tested whether acculturative stress predicts levels of depression. The result showed that a higher level of acculturative stress (Estimate Regression Coefficient,  $EC=.2305$ ,  $p<.0001$ ) was highly significantly associated with levels of depression.

Second, the relationship between depression and social support satisfaction was investigated. The result showed the higher the level of depression, the lower the level of social support satisfaction ( $EC=-.6116$ ,  $p<.0001$ ).

Lastly, social support satisfaction was added to the previous acculturative stress-depression model to test whether social support satisfaction mediates the effects of acculturative stress on depression. The result showed that social support satisfaction mildly decreased effects of acculturative stress ( $EC=$  from  $.2305$  to  $.2241$ ,  $p=.9459$ ) on depression with the effect being significant (See Figure 6).

**Figure 6. Mediating effects of social support satisfaction**



### 4.3 Self-rated IAT

To test whether a person's levels of acculturative stress will predict self-rated IAT scores (Hypothesis 1: Model S-1) as well as whether a person's levels of marital intimacy will predict self-rated IAT scores (Hypothesis 2: Model S-1), the present study investigated the relationships between acculturative stress, marital intimacy, and IAT.

*Model S-1:*

Self-rated IAT = Actor's Acculturative Stress + Partner's Acculturative Stress

In addition, the study adjusted the model S-1 with actor's and partner's time spent online and overall scores/subscales of marital intimacy, respectively, in order to examine pure effects of each predictor on IAT (Model S-2).

*Model S-2:*

Self-rated IAT = Model S-1 + Actor's Internet Use + Partner's Internet Use

Furthermore, to test whether a person’s marital intimacy will mediate the relationship between acculturative stress and IAT (Hypothesis 3: Model S-3), the present study examined mediating effects of overall scores/sub-scales of marital intimacy on acculturative stress to IAT.

*Model S-3:*

Self-rated IAT = Model S-1 + Actor’s Marital Intimacy + Partner’s Marital Intimacy

#### 4.3.1 Self-rated IAT and predictors (Hypothesis 1 and 2)

**Table 10. Model S-1 (Self-rated IAT = Actor’s Acculturative Stress + Partner’s Acculturative Stress)**

Predictor	Model S-1., P-value	
	Actor	Partner
Acculturative stress	.0574	.4506
Overall marital intimacy	.1769	.4986
Intimacy problem	.3942	.4458
Consensus	.0993	.5889
Openness	.3852	.5088
Affection	.2875	.9276
Commitment	.1476	.3319

As seen Table 10, actor and partner effects of each variable on self-rated IAT were examined. The results showed that actor effect of hours spent online for nonessential Internet use and actor effect of depression were significant on self-rated IAT scores. The result also revealed that acculturative stress and consensus had marginalized effect, respectively, on self-rated IAT. However, the result revealed no partner effect on self-rated IAT (See Table 16 in Appendix F).



### 4.3.2 Self-rated IAT and predictors with time spent online

**Table 11. Model S-2 (Self-rated IAT = Model S-1 + Actor's Internet Use + Partner's Internet Use)**

Predictor	Model S-1, P-value		Model S-2, P-value	
	Actor	Partner	Actor	Partner
Acculturative stress	.0574	.4506	.0040*	.5404
Overall marital intimacy	.1769	.4986	.2744	.8704
Intimacy problem	.3942	.4458	.3316	.3237
Consensus	.0993	.5889	.2099	.8297
Openness	.3852	.5088	.9717	.8964
Affection	.2875	.9276	.3659	.3714
Commitment	.1476	.3319	.0778	.3940

Note: a \* means a statistically significant finding.

In order to investigate how the actor and partner effects of each variable change, each model was adjusted with actor's and partner's time spent online for nonessential Internet use (See Table 11). The result showed that the actor effect of acculturative stress changed from marginalized into highly significant while the actor effect of depression disappeared slightly. For the effects of marital intimacy, the actor effect of consensus changed from  $p=.0993$  to  $p=.2099$  while the actor effect of commitment changed from  $p=.1476$  to  $p=.0778$  (See Table 16 in Appendix F).

### 4.3.3 Self-rated IAT and acculturative stress with marital intimacy

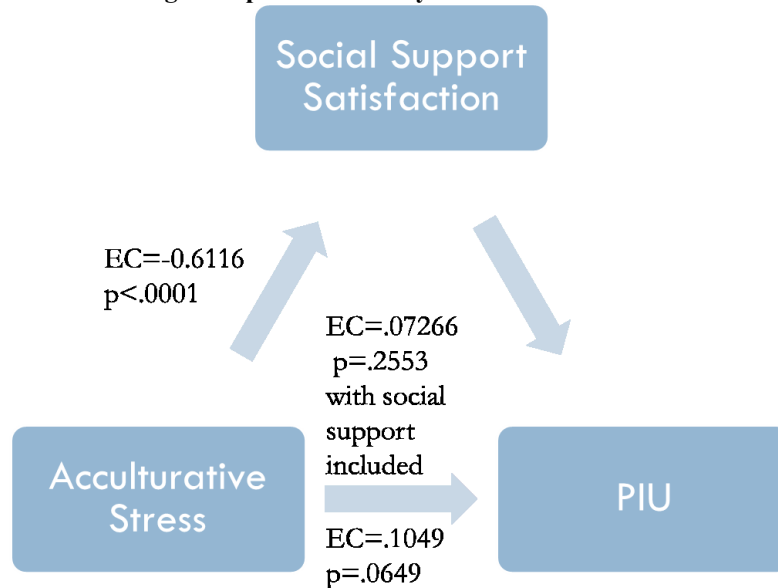
**Table 12. Model S-3 (Self-rated IAT = Model S-1 + Actor's Marital Intimacy + Partner's Marital Intimacy)**

Predictor	Model S-1, P-value		Model S-3, P-value	
	Actor	Partner	Actor	Partner
Acculturative stress	.0574	.4506	.0962	.3255

Moreover, to examine the pure effect of each predictor on self-rated IAT, each model was adjusted with variables of marital intimacy (See Table 12). The result showed that the effect of time spent online for nonessential Internet use still remained highly significant upon each adjustment. For the effects of acculturative stress, the marginal actor effect of acculturative stress dissipated when adjusted with each variable of marital intimacy. In a similar vein, the actor effect of depression disappeared for the adjustment. The effect of social support satisfaction remained insignificant for the adjustment (See Table 17 in Appendix F).

#### 4.3.4 Mediating effects: social support satisfaction and marital intimacy (Hypothesis 3)

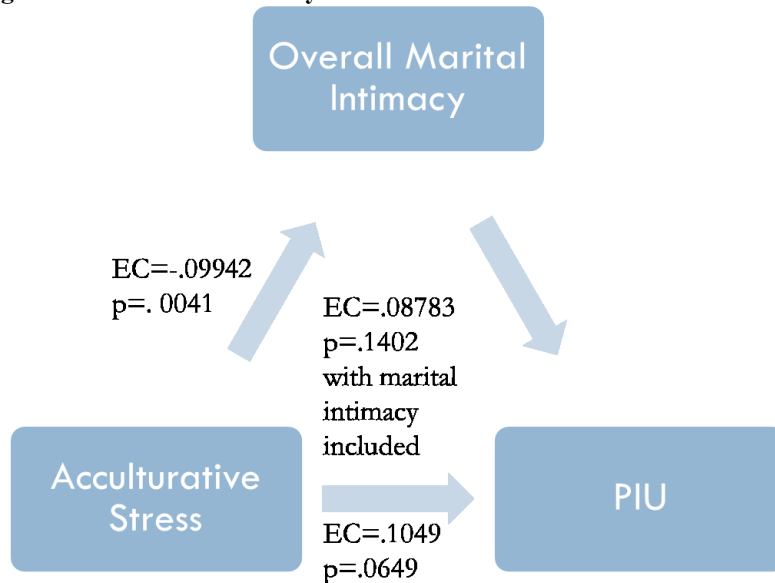
Figure 7. Modified Zhang's adaptation of Berry's model



One of the main interests in this study was to test whether marital intimacy mediates the relationship between IAT and acculturative stress. Prior to directly testing the mediating effect of marital intimacy, the effect of social support satisfaction on the relationship was first investigated, since this study operationalizes marital intimacy as one of perceived social support at a family level.

Based on the test presented by Baron and Kenny (1986), the result of the test showed that actor's satisfaction of social support decreased the estimate regression coefficient of actor's acculturative stress for self-rated IAT from .1049 to .07266 (See Figure 7). However, no significant relationship was found.

**Figure 8. Mediating effects of marital intimacy**



Based on the modified Zhang's adaption of Barry's model, instead of social support satisfaction, each of the overall/sub marital intimacy variables was put into the model and examined to test whether marital intimacy mediates the relationship between acculturative stress and IAT (See Figure 8). However, the results did not produce any significant mediating effect of openness and affection, respectively, on the acculturative stress to self-rated IAT: others (i.e., overall marital intimacy, intimacy problem, consensus, and commitment) decreased the estimate regression coefficients of acculturative stress slightly. No variable turned out to be significant in the mediating effect in the models.

#### 4.4 Partner-rated IAT

To test whether a person's acculturative stress predicts partner-rated IAT scores (Hypothesis 4: Model P-1) as well as whether a person's marital intimacy will predict partner-rated IAT scores (Hypothesis 5: Model P-1), the present study examined the relationships between acculturative stress, marital intimacy, and IAT.

*Model P-1:*

Partner-rated IAT = Actor's Acculturative Stress + Partner's Acculturative Stress

In addition, the study adjusted the Model P-1 with actor's and partner's time spent online and overall scores/sub-scales of marital intimacy, respectively, in order to examine pure effects of each predictor on IAT (Model P-2).

*Model P-2:*

Self-rated IAT = Model P-1 + Actor's Internet Use + Partner's Internet Use

Furthermore, to test whether the difference between self-rated and spouse-rated IAT scores will be associated with acculturative stress and marital intimacy (Hypothesis 6: Model D-3), the present study investigated the relationships between the gaps of acculturative stress and marital intimacy within the couples and the differences of self-rated and partner self-rated IAT scores.

*Model D-3:*

Difference between Self- and Partner-rated IAT = (Actor's Acculturative Stress – Partner's Acculturative Stress) + Partner's Marital Intimacy

#### 4.4.1 Partner-rated IAT and predictors (Hypothesis 4 and 5)

**Table 13. Model P-1 (Partner-rated IAT = Actor's Acculturative Stress + Partner's Acculturative Stress)**

Predictor	Model P-1, P-value	
	Actor	Partner
Acculturative stress	.3878	.0036*
Overall marital intimacy	.9451	.0063*
Intimacy problem	.5275	.1506
Consensus	.8041	.0004*
Openness	.6630	.0136*
Affection	.5907	.0282*
Commitment	.8981	.0020*

Note: a \* means a statistically significant finding.

As seen Table 13, the associations between spouse-rated IAT and each predictor were also examined. The result showed that actor effect of time spent online for nonessential Internet use was significant on spouse-rated IAT scores: partner effect of the time spent online was not significant. In addition, the result revealed that partner's acculturative stress, depression, social support satisfaction, and marital intimacy variables (except intimacy problem) predicted partner-rated IAT scores (See Table 18 in Appendix F)

#### 4.4.2 Partner-rated IAT and predictors with time spent online

**Table 14. Model P-2 (Partner-rated IAT = Model P-1 + Actor's Internet Use + Partner's Internet Use)**

Predictor	Model P-1, P-value	Model P-2, P-value
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	Actor	Partner	Actor	Partner
Acculturative stress	.3878	.0036*	.7394	.0018*
Overall marital intimacy	.9451	.0063*	.8418	.0255*
Intimacy problem	.5275	.1506	.3944	.1636
Consensus	.8041	.0004*	.5449	.0020*
Openness	.6630	.0136*	.3065	.0375*
Affection	.5907	.0282*	.4422	.0988
Commitment	.8981	.0020*	.8311	.0010*

Note: a \* means a statistically significant finding.

To examine pure effect of the predictors above, the model P-1 was adjusted with hours spent online for nonessential Internet use (See Table 14). Overall, the adjustment did not influence the significance of the effect of the predictors. For the adjustment, however, the actor effect of social support satisfaction became significant while the partner effect of affection changed from significant to marginalized (See Table 17 in Appendix F).

#### 4.4.3 Partner-rated IAT and acculturative stress with marital intimacy

**Table 15. Model P-3 (Partner-rated IAT = Model P-1 + Actor's Marital Intimacy + Partner's Marital Intimacy)**

Predictor	Model P-1, P-value		Model P-3, P-value	
	Actor	Partner	Actor	Partner

Acculturative stress	.3878	.0036*	.8418	.0255*
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Note: a \* means a statistically significant finding.

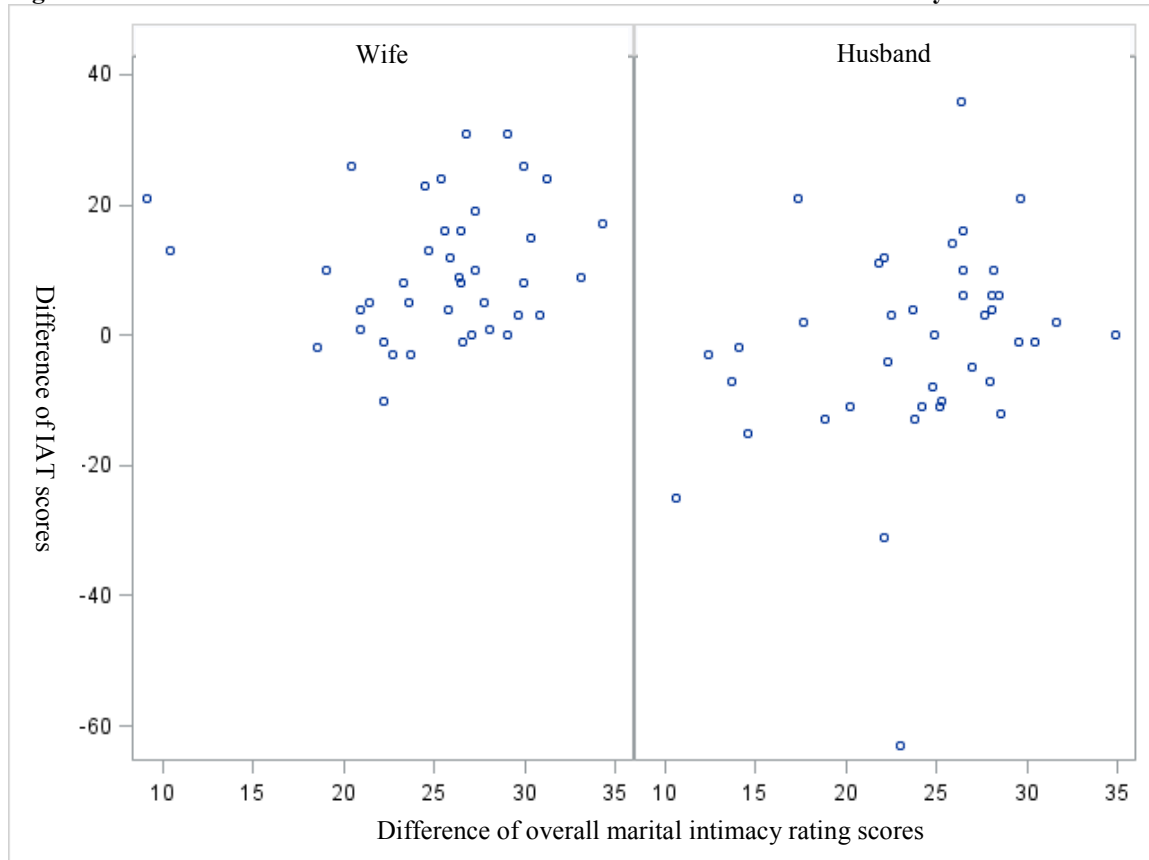
In response to the findings model P-1 was adjusted with each of the marital intimacy (See Table 15). The result showed that the adjustment tended to slightly weaken the actor effect of time spent online for nonessential Internet use. For the adjustment, the partner effects of acculturative stress, depression, and social support satisfaction remained significant. However, adjusted with consensus, the partner effect of marital intimacy disappeared or marginalized (See Table 18 in Appendix F).

#### **4.5 Difference between IAT scores rated by self and by partner (Hypothesis 6)**

As seen Figure 9, scatterplots of the relationship of the difference between IAT scores rated by self and by partner with spouse's marital intimacy showed that wives tended to report higher scores for their husbands than husbands reported for their wives.



**Figure 9. Association between difference of IAT and difference of marital intimacy**



Based on a person's IAT scores rated by himself/herself and by his/her partner, the differences between the two IAT scores (i.e. IAT score rated by self - IAT score rated by spouse) was examined. As seen in the models of self-rated IAT, scores of self-rated IAT were predicted by a person's level of acculturative stress and time a person spent online for nonessential purposes (Model D-1).

*Model D-1:*

Self-rated IAT = Actor's Acculturative Stress + Actor's Internet use

For the models of partner-rated IAT, scores of partner-rated IAT were predicted by partner's level of acculturative stress, partner's level of marital intimacy, and time a person spent online for nonessential purposes (Model D-2)

*Model D-2:*

Partner-rated IAT = Partner's Acculturative Stress + Actor's Internet use +  
Partner's marital intimacy

Therefore, the model of differences between the two IAT scores is as following:

*Model D-3:*

Difference of IAT = Model D-1 – Model D-2 = Difference of Acculturative Stress  
(Actor's Acculturative Stress – Partner's Acculturative Stress) + Partner's Marital  
Intimacy

The study tested this model, and the result revealed that degree of the difference between self- and spouse-rated IAT scores was positively associated with the difference of actor's and partner's acculturative stress and partner's marital intimacy. Specifically, when an actor has a greater acculturative stress than his/her partner, the difference is positive, which predicts a larger gap in assessment in IAT scores: when an actor has a lesser acculturative stress than his/her partner, the difference is negative, which predicts a smaller gap in IAT scores.

## 5 DISCUSSION

This study aimed to examine how PIU was associated with acculturative stress and marital intimacy among Korean married couples in the United States. Taken together, the results suggest that marital intimacy plays a mediating role in the relationships between PIU and acculturative stress that the couples perceive.

First, couples demonstrated gender differences in time spent on the Internet per week. Consistent with previous findings, men spent more time on the Internet than women (Morahan-Martin, 2009; Nie & Erbring, 2000; Young & de Abreu, 2010). In this study, this difference was due to the time spent on the Internet for their essential purpose (e.g., job, study), suggesting that while men spend a similar amount of time on the Internet for nonessential (e.g., entertainment, recreation) purposes compared with their counterpart, they spend additional time for their daily duties related to employment or studies.

In addition to Internet use time, this study's findings showed that wives access portals in Korean the most while husbands use search engines in English. This gender characteristic in the use of online contents as well as their languages (i.e., Korean, English or both) shows how wives and husbands differ in the use of the Internet for seeking essential information or entertainment. This difference may stem from the difference in employment (8% vs. 60%,  $p < .0001$ ) and English fluency (2.7 vs. 3.4,  $p = 0.0004$ ) between wives and husbands. Therefore, this implies to policy makers or health professionals working with Koreans that interventions or policies for Koreans

should consider this gender characteristic in the Internet use to reach Koreans in the U.S. and to distribute information for them.

The findings of the present study showed that a spouse is a significant person that the participant couples ask for help with problems related to Internet use. For Korean couples living in the US, this indicates the importance of spouse's role especially in helping their partners with problematic Internet use or in referring them to mental health practitioners. Particularly, this importance of the spouse's role becomes more obvious in light of language as the greatest barrier to the use of mental health services among participants who are wives.

Furthermore, the result showed that all the participants had never accessed mental health services in the U.S.; most of the couple participants had willingness to use mental health services; and individual therapy was the most preference among them. This result may indicate that social stigma exists in Korean married couples residing in the U.S. Although the participants regarded their spouses as a primary helping person for their mental health problems including problematic Internet use, couples therapy was chosen by only about 10% of wives and 20% of husbands. This notes that Korean couples may be reluctant to reveal their partner's mental health problems occurring within the boundary of marital relationships to non-family members such as mental health practitioners. Therefore, this suggests that when Korean married couples encounter mental health problems such as problematic Internet use, mental health practitioners should consider involvement of clients' spouse in their treatment plans as a co-worker or

a cooperator who can help the clients outside of sessions, but should ask the clients about their preference regarding the presence of their partners in counseling or therapy sessions.

The result of this study also showed gender difference in barriers to the use of mental health services in the U.S. Hence, this result suggests that mental health services for Korean married couples in the U.S. should consider these gender differences. For example, mental health services for wives should include interpreter services, while mental health services for husbands should include increasing accessibility to information of the use of local mental health service through online search engines which they often use. In addition, the study's result showed that no previous experience of the use of mental health services was the second biggest barrier among both wives and husbands. Therefore, mental health services should consider how they approach and initiate these couples needing help accessing the services. In addition, mental health services for Korean wives in the U.S. should consider how they provide child care services during their clinical session. Furthermore, in situations where a child accompanies a parent to a mental health appointment the provider should be prepared or provide the child with culturally appropriate activities (e.g., Korean movies, cartoons or books)

The findings of Zhang (2012)'s adaptation of Berry's acculturation model (1997) revealed that the relationships of the variables in the present study fit Berry's model. Namely, the findings confirmed the relationships in which acculturative stress is a predictor of depression, with satisfaction of social support as a mediator of acculturative stress on depression (Lee, Koeske, & Sales, 2004). This suggests that interventions to

ameliorate a person's depression should focus on decreasing a level of acculturative stress through social supports from a spouse, other family members, or non-family members including friends, churches, or neighbors. Moreover, these findings also provide important frames for the researcher to expand data analyses into further relationships among PIU, acculturative stress, and satisfaction of social support.

With respect to acculturative stress, the findings of the current study suggest that a person's levels of acculturative stress influenced his or her own PIU scores while the partner's levels of acculturative stress affected partner-rated PIU scores. Moreover, when each relationship was adjusted with time spent online for the purpose of nonessential Internet use and marital intimacy variables, respectively, the results showed similar patterns. For example, when the relationships between acculturative stress and self-rated PIU or partner-rated PIU were adjusted with the time spent online for the purpose of nonessential Internet use, each p value of actor's acculturative stress and partner's acculturative stress became stronger in each model. On the other hand, when the same models were adjusted with marital intimacy values, the p values of actor's acculturative stress and partner's acculturative stress, respectively, became weaker. These findings suggest that each person's rating scores of IAT may rely on his or her own estimating an objective indicator (time spent online) as well as a subjective indicator (relational quality: i.e., marital intimacy). These findings support the studies on the relationships between perceptions of one's own as well as one's partner's drinking behaviors and relational satisfaction (Connors & Maisto, 2003; Antoine, Christophe, & Nandrino, 2009). These studies' findings showed that objective indicators (e.g., average number of drinks per

week) was associated with degree of agreement in partners, whereas subjective indicators (e.g., perceived temptation to drink, perceived marital satisfaction) are associated with degree of partner's discrepancies which are also associated with divorce in the couple over times. Therefore, in order to assess clients more exactly, it is important for mental health practitioners to collect objective as well as subjective information regarding PIU from both partners. In addition, it is noteworthy for mental health practitioners to understand that when the assessments by both partners reveal discrepancies, the practitioners should further investigate subjective information such as marital intimacy and satisfaction of social support.

Although the time on the Internet use was not of main interest for this study, results confirmed the positive relationships between Internet use and PIU (Whang, Lee, & Chang, 2003; Widyanto & McMurrin, 2004; Young, 1998). Findings indicated that a person's time spent on the Internet predicted a level of his or her PIU. Specifically, a person's time spent online for nonessential purposes strongly predicted his or her PIU. Further, the result showed that his or her partner also relied on the person's time spent online for nonessential purposes upon assessment of his or her partner's PIU. This result implies that it is critical for mental health practitioners to take into account recreational-related time clients spent on the Internet rather than to screen how much they spent only on overall Internet use without any classification. In addition, this result suggests that it is important for clinical practitioners to involve the partners of clients' seeking professional help for PIU in reporting time spent online for the clients and then to compare the times

reported from clients with the times reported from their partners on counseling intake interviews.

Next, as expected, the study demonstrated that a person's marital intimacy predicted a level of his or her perception toward his or her partner's PIU. However, the partner's marital intimacy did not predict a level of the person's PIU. This may indicate that the relational quality people perceive within their marital relationship has a great influence on their perception of PIU toward their partners (Fiske, Gilbert, & Lindzey, 2010). Further, this result indicates that a person's perception of PIU toward their partner relies on his or her own perceived marital intimacy rather than on the partner's perceived marital intimacy. Therefore, it may be interpreted that a person committed deeply to his or her partner tends to underestimate a level of the partner's PIU regardless of how much the partner is actually addicted to the Internet and committed to marriage. Likewise, this tendency can be found in other addictive behaviors such as problematic alcohol use. Rodriguez and colleagues (2013) indicated that problematic alcohol users are likely to overestimate the marital satisfaction of their spouse, whereas the spouses are likely to underestimate the marital satisfaction of the problematic alcohol users. This tendency may be due to the misperception of married couples with one partner reporting alcohol problems toward their marital satisfaction (Antoine, Christophe, & Nandrino, 2009). This may provide an important cue for the intervention in PIU among married couples. When married couples seek professional help, especially for partners' PIU, it is noteworthy for mental health practitioners to investigate not only the Internet use times but also the couple's relational quality, especially marital intimacy.



Finally, the study demonstrated that men and women differ in perceiving PIU of spouses. The present study did not clearly explain why this difference existed or what caused this difference. However, the study may suggest that women are more likely than men to be relatively sensitive to the Internet use by their spouse, thereby perceiving a higher level of PIU for their spouse than do men. This may reflect that women are less patient in watching their spouse using the Internet due to women's feeling overburdened from caring for family or feeling disconnected from their spouse. In contrast, this may reflect that men tend to underestimate a level of spouses' PIU since women may use the Internet in the absence of their spouses at home or men may not be aware of exactly how many hours their spouses spend online.

This study also suggests future studies. The next study needs to further investigate whether any other factors regarding marital quality are associated with PIU among couples. Moreover, the following study needs to answer the question of why gender difference exists in perception of PIU toward the partner. Additionally, it is necessary that further study should examine whether the findings found in the current study are applicable to other relationships such as parent-child relationships, dating couples, or homosexual relationships. Finally, an additional study should examine the relationships between marital intimacy and PIU among other ethnic groups. In particular, the study should assess whether there are relationships between PIU and cultural factors among underserved populations in the United States.

## 6 Implications for practice

In conclusion, this study is significant in that it provides both researchers and practitioners with deeper insights into the importance of relational quality in relation to PIU within a romantic relationship. Furthermore, the current study found that a person's marital intimacy had a buffering effect on his or her perception of PIU for the partner. This finding also supports the importance of interventions in decreasing the PIU by enhancing couples' marital quality in a family structure, considering gender differences in their effects. As they tend to underutilize conventional mental health services due to unfamiliarity and stigma, culturally-tailored social work practice and research are particularly needed.

In addition, for couples therapy, IAT scores reported by both husband and wife can provide useful information for practitioners. In particular, as seen earlier, the results of the present study suggest that practitioners working with immigrant couples with PIU need to investigate the difference of the IAT scores between partners, focusing on the difference of acculturative stress within the couple and the partner's level of marital intimacy. This implies that when a couple reports a large gap in acculturative stress, but a spouse is addicted to the internet, a level of marital intimacy in the partner can influence the scores of IAT reported by the other partner. Therefore, when the practitioners use the IAT scores reported by spouses to more exactly assess level of Internet addiction of the client, they need to pay attention to each IAT score as well as the scores by the partner.

## 7 Limitations of the study

The present study has several limitations. First, the sample size is small. Although the forty couples may be sufficient for obtaining meaningful results through conducting dyadic analyses (Kenny, Kashy, & Cook, 2006), the result of the study may not be generalized into Korean couples in the U.S. Second, the sample may be biased in terms of the recruitment method. This study used convenience sample due to difficulty in reaching ethnic minority couples. Therefore, the participants cannot represent all of Korean couples residing in the U. S. Moreover, most of the study participants indicated a low level of PIU. Therefore, clinical samples may provide different results. In addition, the cross-sectional nature of the present study may not explain cause-result effects on the relationships between PIU, acculturative stress, and marital intimacy. Therefore, longitudinal study is needed to provide evidences of causal effect of acculturative stress on PIU. Last, the findings of the present study may not apply to other ethnic groups. Each ethnic group has its own characteristics in dealing with acculturative stress and developing marital relationships. A comparative study between different ethnic groups may provide more useful information on PIU within married couples.

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## 9 Appendices

### 9.1 Appendix A

#### A questionnaire (English)

##### INTERNET USE (3 items)

1. When did you first begin to use Internet?
2. How many hours per day/week did you spend online for the past month? (for nonessential use such as recreation and for essential use such as job or work)

		Nonessential use	Essential use	
per day		hour(s)		hour(s)
per week		hour(s)		hour(s)

3. What applications do you use on the Internet (specific names or sites visited)? Please fill the blanks below according to the ranking order of each application from most to least important or from most often to least use. (1=first, 10=last)

Ranking	Application Name or Site	Ranking	Application Name or Site
1		6	
2		7	
3		8	
4		9	
5		10	

##### HEALTH CARE ACCESSIBILITY (6 items)

*I would like to ask you some questions related to your health care accessibility in the United States. Please **WRITE THE ONE NUMBER** that corresponds to your best answer to each question.*

**[Example] 0=No, 1=Yes**

1. Do you have any health insurance coverage?
2. Do you have a primary physician?
3. Have you ever used any mental health service (counseling, psychiatric treatment, etc.)?
4. If you experience mental health problems caused by using Internet, whom do you ask of a help? Please fill the blanks below according to the ranking order of each person from most to least important. (e.g., psychiatrist, counselor/therapist, doctor, parents, spouse, friend, religious leader, etc.)

Ranking	Persons you ask of a help
1	
2	
3	

5. If you experience mental health problems caused by Internet heavy use and are referred to a counselor or therapist, will you use the mental health services?
  - 5-1. If 0 (=No) in 5, why? (specify)
  - 5-2. If 1 (=Yes) in 5, which type of therapy do you like?
 

**[Example]** 1. Individual therapy 2. Couple therapy 3. Group therapy 4. Others (specify)



6. What barriers do you expect in seeking mental health services? Please fill the blanks below according to the ranking order of each barrier from the biggest to the smallest. (1=the biggest barrier, 8=the smallest barrier)

**[Example]** Language, Absence of counselor/therapist speaking Korean,  
Lack of information, Absence of Transportation, Kids care,  
High expense, Negative social perception, No previous experience

Ranking	Barrier to using mental health	Ranking	Barrier to using mental health
1		5	
2		6	
3		7	
4		8	
Others			

**ACCULTURATIVE STRESS (31 items)**

Please answer how often you feel the way described in each of the statements below by **WRITE THE ONE NUMBER** which most closely your own personal experience living in the U.S.

**[Example]** (Never) 1 2 3 4 5 6 7 (Very often)

1. My English embarrasses me when I talk to people.
2. I don't like the religions in the U.S.A.
3. I worry about my academic performance.
4. I worry about my future career in my home country.
5. I can feel racial discrimination toward me from other students.
6. I'm not doing as good as I want to in school.
7. My English makes it hard for me to read articles, books, etc.
8. It's hard for me to develop opposite-sex relationships here.
9. I don't like the ways people treat each other here.
10. I don't like American food.
11. People treat me badly just because I am a foreigner.
12. I owe money to others.
13. I think that people are very selfish here.
14. I don't like the things people do for their entertainment here.
15. I can feel racial discrimination toward me in stores.
16. I worry about whether I will have my future career in the U.S.A.



7. I felt that everything I did was an effort.
8. I felt hopeful about the future.
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.
13. I talked less than usual.
14. I felt lonely.
15. People were unfriendly.
16. I enjoyed life.
17. I had crying spells.
18. I felt sad.
19. I felt that people disliked me.
20. I could not get going.

**SOCIAL SUPPORT (12 items)**

*The following questions ask about people in your environment who provide you with help or support. Each question has two parts. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give the persons' initials, their relationship to you. Do not list more than one person next to each of the numbers beneath the question. For the second part, please **WRITE THE ONE NUMBER** that indicates how satisfied you are with the overall support you have. If you have had no support for a question, check the words "No one" with "X," but still rate your level of satisfaction. Don not list more than nine persons per question. Please answer all the questions as best you can. All you responses will be kept confidential.*

**[Example]**

<b>6=very satisfied</b>	<b>5=fairly satisfied</b>	<b>4=a little satisfied</b>	<b>3=a little dissatisfied</b>	<b>2=fairly dissatisfied</b>	<b>1=very dissatisfied</b>
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1. Whom can you really count on to be dependable when you need help?

No one	1		4		7	
	2		5		8	
	3		6		9	

1-1. How satisfied?

2. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?

No one	1		4		7	
	2		5		8	
	3		6		9	

2-1. How satisfied?

3. Who accept you totally, including both your worst and your best points?

No one	1		4		7	
	2		5		8	
	3		6		9	

3-1. How satisfied?

4. Who can you really count on to care about you, regardless of what is happening to you?

No one	1		4		7	
	2		5		8	
	3		6		9	

4-1. How satisfied?

5. Whom can you really count on to help you feel better when you are feeling generally down-in-the dumps?

No one	1		4		7	
	2		5		8	
	3		6		9	

5-1. How satisfied?

6. Whom can you count on to console you when you are very upset?

No one	1		4		7	
	2		5		8	
	3		6		9	

6-1. How satisfied?

**INTERNET ADDICTION TEST (40 items)**

*The part consists of two sections: the one for your Internet use and the other you're your spouse's Internet use. Please **WRITE THE ONE NUMBER** that corresponds to your best answer to each question.*

**For YOUR Internet use (20 items)**

[Example] 0=Never 1=Rarely 2=Occasionally 3=Frequently 4=Often 5=Always

- How often do you find that you stay on-line longer than you intended?
- How often do you neglect household chores to spend more time on-line?
- How often do you prefer the excitement of the Internet to intimacy with your partner?
- How often do you form new relationships with fellow on-line users?
- How often do others in your life complain to you about the amount of time you spend on-line?

6. How often do your grades or school work suffer because of the amount of time you spend on-line?
7. How often do you check your e-mail before something else that you need to do?
8. How often does your job performance or productivity suffer because of the Internet?
9. How often do you become defensive or secretive when anyone asks you what you do on-line?
10. How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?
11. How often do you find yourself anticipating when you will go on-line again?
12. How often do you fear that life without the Internet would be boring, empty, and joyless?
13. How often do you snap, yell, or act annoyed if someone bothers you while you are on-line?
14. How often do you lose sleep due to late-night log-ins?
15. How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?
16. How often do you find yourself saying "just a few more minutes" when on-line?
17. How often do you try to cut down the amount of time you spend on-line and fail?
18. How often do you try to hide how long you've been on-line?
19. How often do you choose to spend more time on-line over going out with others?
20. How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back on-line?

**For YOUR SPOUSE's Internet use (20 items)**

**[Example] 0=Never 1=Rarely 2=Occasionally 3=Frequently 4=Often 5=Always**

1. How often do you find that your spouse stays on-line longer than he/she intended?
2. How often does your spouse neglect household chores to spend more time on-line?
3. How often does your spouse prefer the excitement of the Internet to intimacy with you?
4. How often does your spouse form new relationships with fellow on-line users?
5. How often do others in your life complain to your spouse about the amount of time he/she spends on-line?
6. How often do your spouse's grades or school work suffer because of the amount of time he/she spends on-line?
7. How often does your spouse check his/her e-mail before something else that he/she needs to do?
8. How often does your spouse's job performance or productivity suffer because of the Internet?



10. My partner has all the qualities I expect a good spouse to possess.
11. My partner and I could easily live without each other.
12. My partner and I often have a different opinion.
13. I can entrust the most intimate things to my partner.
14. I think others have more to offer to their partner than I can offer mine.
15. My partner and I leave each other free to engage in other relationships.
16. My partner and I share each other's feelings.
17. My partner and I are not on the same wavelength.
18. My partner and I don't always know what we can expect from each other.
19. My partner and I completely understand each other.
20. My partner and I accept each other the way we are.
21. My partner and I can easily make joint decisions.
22. I prefer to keep very personal things hidden from my partner.
23. I think I have little to offer to my partner.
24. The relationship between my partner and me is more important than our relationships with other persons.
25. I don't think there are couples who are happier than my partner and me.
26. My partner and I try to please each other.
27. My partner and I can sense what the other thinks or feels, even if he/she does not say so.
28. I try to tell my partner only those things I think he/she will like to hear.
29. If I have a different opinion than my partner, I speak up.
30. There are things my partner and I prefer to discuss with our parents rather than with each other.
31. My partner and I share the same view about our relationship.
32. My partner and I complement each other.
33. My partner and I talk to each other about sex.
34. My partner and I need other personal relationships than ours.
35. My partner and I understand each other.

36. If there are problems, my partner and I can usually solve them together.
37. When I say personal things to my partner I often feel sorry afterwards.
38. I consider myself attractive for my partner.
39. There is a great distance between my partner and me.
40. Sometimes I just pretend I am listening to my partner.
41. I think my partner accepts me as I am.
42. When important things are concerned, my partner and I have little in common.
43. I show my true feelings to my partner.
44. My partner and I sometimes tell personal things about each other to friends.
45. My partner and I consider it important to show our love to each other.
46. My partner and I often try to impose our own ideas onto each other.
47. My partner and I go our own ways.
48. My partner and I discuss personal things.
49. I often lose myself in the relationship with my partner.
50. My partner and I usually need much time to get tuned in to each other when performing certain tasks.
51. My partner and I understand each other intuitively.
52. In our relationship everything can be discussed openly.
53. The relationship with my partner inhibits my self-development.
54. Faith is an important aspect of the relationship between my partner and me.
55. My partner and I long for each other when we are apart.
56. My partner and I count each other in when we make plans.

**DEMOGRAPHIC AND OTHER BACKGROUND INFORMATION (17 items)**

1. Gender? 0=Female 1=Male 2=Others
2. Date of Birth?
3. Date of Marriage?



4. Number of children?

4-1. Children's Age(s)

5. How long have you lived in the United States?  Year(s)

6. What is your religious affiliation?

- I have no religion ..... 0
- Catholic ..... 1
- Protestant ..... 2
- Jewish ..... 3
- Buddhist ..... 4
- Other ..... 5

7. Do you feel that you are religious?

- Not at all religious ..... 0
- Not religious ..... 1
- Somewhat religious ..... 2
- Very religious ..... 3

8. How important is religion to you?

- Not at all important ..... 0
- Not very important ..... 1
- Somewhat important ..... 2
- Very important ..... 3

9. What is the number of years of formal education?  Year(s)

9-1. Your final education?

- Graduated from Elementary school ..... 1
- Graduated from Middle school ..... 2
- Graduated from High school ..... 3
- Graduated from College or University ..... 4
- Graduated from Master's program ..... 5
- Graduated from Doctoral program ..... 6

10. What is your primary job?

- |                         |                                      |
|-------------------------|--------------------------------------|
| Undergraduate ..... 1   | Housewife ..... 6                    |
| Graduate ..... 2        | Freelancer ..... 7                   |
| Postdoc ..... 3         | Engineer/Technician ..... 8          |
| Salaried worker ..... 4 | Clergy ..... 9                       |
| Self-employed ..... 5   | Teacher/Government employee ..... 10 |
| Others ..... 11         |                                      |

11. What is total annual household income including your own and your spouse?

Under \$10,000.....	1
\$10,001-\$15,000.....	2
\$15,001-\$25,000.....	3
\$25,001-\$50,000.....	4
\$50,001-\$75,000.....	5
\$75,001-\$100,000.....	6
\$100,000 or more.....	7

12. What would you say about your overall financial situation?

Very bad .....	1
Bad .....	2
Fair .....	3
Good .....	4
Very good.....	5

13. How would you rate your overall English proficiency?

Very poor .....	1
Poor .....	2
Fair .....	3
Good.....	4
Excellent or very good .....	5

14. How would you rate your health at the present time?

Very poor .....	1
Poor .....	2
Fair .....	3
Good.....	4
Excellent or very good .....	5

15. How many hours do you exercise totally per week?

Less than 1 hour .....	1
1 to 5 hours.....	2
6 to 10 hours.....	3
11 to 15 hours.....	4
16 to 20 hours.....	5
More than 20 hours .....	6

15-1. How vigorously do you tend to exercise?

Very gently .....	1
Gently .....	2
Moderately .....	3
Vigorously .....	4
Very vigorously.....	5

16. Height / Weight

17. How often do you smoke or drink alcohol per week?

Smoking: Times per week, Drinking: Times per week

- Thank You. The End -

## **9.2 Appendix B**

### **A questionnaire (Korean)**

**인터넷 사용 (3 문항)**

1. 처음으로 인터넷을 사용하기 시작한 것은 언제입니까?  년도
2. 지난 한달 동안 온라인을 이용한 평균 시간은? [필수불가결한 사용목적 (일 또는 업무 등)과 그 이외의 사용목적 (기분전환 또는 채팅 등)을 위한 하루/주 당 평균 사용시간]

	필수불가결한 사용 목적	그외 사용 목적
하루	<input type="text"/> 시간	<input type="text"/> 시간
일주일	<input type="text"/> 시간	<input type="text"/> 시간

3. 인터넷에서 주로 이용하는 콘텐츠는? (구체적 웹사이트의 이름 또는 주소) 가장 중요하거나 자주 이용하는 것 부터 순서대로 아래 빈칸에 기록해 주세요

(1=중요도/사용빈도 최고, 10=중요도/사용빈도 최하)

순위	사용 콘텐츠의 이름 및 주소	순위	사용 콘텐츠의 이름 및 주소
1	<input type="text"/>	6	<input type="text"/>
2	<input type="text"/>	7	<input type="text"/>
3	<input type="text"/>	8	<input type="text"/>
4	<input type="text"/>	9	<input type="text"/>
5	<input type="text"/>	10	<input type="text"/>

**의료 서비스 이용가능성 (6 문항)**

미국 내에서 건강 관련 의료 서비스들을 얼마나 이용하고 있는지에 관련된 질문입니다. 각각의 질문에 대해 가장 적합한 답의 **번호 하나**를 보기에서 찾아 빈칸에 적어 주세요.

[보기] 0 = 아니요, 1 = 예

1. 의료보험에 가입되어 있습니까?
2. 주치의가 있습니까?
3. 정신 건강 관련 서비스 (상담, 정신과 치료 등)를 이용해 본적이 있습니까?
4. 만약 과도한 인터넷 사용으로 인한 정신건강 문제가 발생한다면 누구에게 도움을 요청하겠습니까? 가장 도움을 요청할 것 같은 사람 순으로 1번에서 3번까지 적어 주세요. (예, 정신과 의사, 상담치료사, 의사, 부모, 배우자, 친구, 종교지도자 등등)

순위	도움 요청 대상자
1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>

5. 만약 과도한 인터넷 사용으로 인한 정신건강 문제로 상담치료 서비스를 받도록 권유 받게 된다면 이용할 생각이 있습니까?

5-1. 만약 위의 대답이 "0 (=아니오)" 라면 그 이유는? (구체적으로)

5-2. 만약 위의 대답이 "1 (=예)" 라면 다음 중 어떤 형태의 상담치료를 이용하기 원하는지 아래 보기에서 적절한 답을 찾아 그 번호를 적어 주세요.

**[보기]** 1. 개인 상담치료 2. 부부 상담치료 3. 집단 상담치료 4. 기타 (구체적으로)

6. 상담치료 서비스를 이용하고자 할 때 예상되는 어려움을 아래 보기에서 골라 가장 큰 어려움으로 부터 적은 순으로 아래 빈칸에 적어 주세요.

(1=가장 큰 어려움, 8=가장 덜 어려움)

**[보기]** 언어, 한국어 가능 상담치료사 부재, 필요한 정보의 부족, 교통수단 부재  
아이들 돌보기, 비싼 비용, 주위의 부정적 인식, 이전 이용 경험 없음

순위	상담치료 이용의 어려움	순위	상담치료의 어려움
1		5	
2		6	
3		7	
4		8	
기타			

**문화 적응 스트레스 (31 항목)**

미국 생활에서 아래 기술된 내용들을 개인적으로 얼마나 자주 느끼고 있지를 보기의 1 에서 7 까지의 숫자 중 하나를 골라 적어주세요.

**[보기]** (전혀 없음)

(매우 자주)

1 2 3 4 5 6 7

1. 사람들에게 이야기 할 때 내 영어는 나를 당혹케 한다.
2. 미국에 있는 종교들을 좋아하지 않는다.
3. 학업 성적 또는 일의 성과가 걱정된다.
4. 향후 한국에서의 진로가 걱정된다.
5. 나에 대한 인종적 차별을 느낄 수 있다.
6. 학교나 집 등 주로 일하는 곳에서 내가 바라는 만큼 잘하고 있지 못하다.
7. 내 영어 실력은 기사나 책 등을 읽기 어렵게 한다.
8. 여기서 이성과 우정을 쌓기가 쉽지않다.
9. 여기 사람들의 서로를 대하는 방식을 좋아하지 않는다.
10. 미국 음식을 좋아하지 않는다.
11. 내가 외국인이기 때문에 사람들은 나를 나쁘게 대한다.
12. 다른 사람에게 빌린 돈이 있다.
13. 여기 사람들은 매우 이기적이라고 생각한다.
14. 여기 사람들이 오락으로 즐기는 것들을 좋아하지 않는다.

15. 상점에서 나에게 대한 인종적 차별을 느낄 수 있다.
16. 향후 미국에서 직업을 갖을 수 있을지 걱정이다.
17. 미국인들의 너무나 직선적인 태도가 불편하다.
18. 나의 가족을 실망시키지 않기 위해서 열심히 공부 또는 일을 한다.
19. 가르치는 사람들(교수, 교사 등)로부터 나 또는 아이들에 대한 인종적 차별을 느낄 수 있다.
20. 영어로 자신을 잘 표현할 수 없다.
21. 나 또는 자녀가 학교에서 실패한다면 이것은 가장 큰 부끄러움이 될 것이다.
22. 재정상태가 걱정이 된다.
23. 미국음악을 좋아하지 않는다.
24. 식당에서 인종적 차별을 느낄 수 있다.
25. 나의 재정상태는 나 또는 자녀들의 학업에 영향을 미친다.
26. 미국에 머무르지 한국으로 돌아갈지 앞으로의 미래가 걱정이 된다.
27. 미국 명절들을 즐기는데 아직 익숙치 않다.
28. 한국으로 돌아가길 원하지 않지만 그렇게 될 것 같다.
29. 영어로 된 강의들(수업, 설교, 교육 동영상 등)은 이해하기 어렵다.
30. 앞으로 한국으로 돌아가고 싶지만 그렇게 될 수 없을지도 모른다.
31. 재정상황이 이곳에서의 삶을 매우 어렵게 만든다.

**우울증 척도 (20 문항)**

아래의 항목들이 지난 일주일 동안 귀하에게 얼마나 자주 일어났었는지를 보기에서 가장 적합한 답을 찾아 해당되는 **번호 하나**를 적어 주세요.

- [보기]** 지난주 동안:   **0=극히 드물다 (1 일 이하)**  
                                   **1=가끔 있었다 (1-2 일간)**  
                                   **2=종종 있었다 (3-4 일간)**  
                                   **3=대부분 그랬다 (5 일 이상)**

1. 평소에 아무렇지도 않던 일들이 괴롭고 귀찮게 느껴졌다.
2. 먹고 싶지 않고 식욕이 없다.
3. 가족이나 친구들의 도움으로도 우울한 기분을 떨칠 수 없다고 느꼈다.
4. 적어도 보통 사람들만큼의 능력은 있다고 생각했다.

5. 무슨 일을 하든 정신을 집중하기가 힘들었다.
6. 우울하다고 느꼈다.
7. 모든 일들이 힘들게 느껴졌다.
8. 미래가 희망적으로 느껴졌다.
9. 지금까지의 내 인생은 실패작이라는 생각이 들었다.
10. 두려움을 느꼈다.
11. 잠을 잘 이루지 못했다.
12. 행복하다고 느꼈다.
13. 평소에 비해 말수가 적었다.
14. 외롭다고 느꼈다.
15. 사람들이 나에게 차갑게 대하는 것 같았다.
16. 큰 불만없이 생활했다.
17. 갑자기 울음이 나왔다.
18. 마음이 슬펐다.
19. 사람들이 나를 싫어하는 것 같았다.
20. 도무지 뭘 해 나갈 엄두가 나지 않았다.

### 사회적 지원 (12 문항)

다음은 귀하가 처한 상황 속에서 귀하에게 도움이나 지원을 제공할 수 있는 사람들과 관련된 질문들입니다. 각 질문은 두 부분으로 나누어져 있습니다. 첫 부분은, 본인을 제외하고 귀하가 도움이나 지원을 받을 수 있다고 생각하는 모든 사람의 목록을 만드는 것입니다. 해당자들의 성(姓)과 관계(친구, 어머니 등)를 빈칸에 기록해 주십시오. 두번째 부분은, 귀하가 첫번째 질문의 상황에서 받은 사회적 지원에 대한 만족도와 관련된 질문입니다. 귀하의 만족도를 나타내는 숫자를 보기에서 찾아 적어 주세요. 만약 현재 어떠한 지원도 받고 있지 않다면, 첫번째 질문 부분에 “없음”에 표시(X)해 주시고, 반드시 두번째 질문에는 귀하의 만족도를 표시해 주세요. 모든 답변은 비밀이 보장됩니다

#### [보기]

<b>6=매우</b> 만족스럽다	<b>5=꽤</b> 만족스럽다	<b>4=약간</b> 만족스럽다	<b>3=약간</b> 불만족스럽다	<b>2=꽤</b> 불만족스럽다	<b>1=매우</b> 불만족스럽다
----------------------	---------------------	----------------------	-----------------------	----------------------	-----------------------

1. 도움을 필요로 할때 의지할 만한 사람은 누구입니까?

없음	1		4		7	
	2		5		8	
	3		6		9	

1-1. 위의 경우 얼마나 만족하십니까?

2. 압박감이나 긴장감을 느낄 때 긴장을 풀어주도록 도와줄 사람은 누구입니까?

없음	1		4		7	
	2		5		8	
	3		6		9	

2-1. 위의 경우 얼마나 만족하십니까?

3. 좋은 점과 나쁜점을 포함해 귀하의 모든 것을 받아줄 사람은 누구입니까?

없음	1		4		7	
	2		5		8	
	3		6		9	

3-1. 위의 경우 얼마나 만족하십니까?

4. 무슨 일에든지 귀하에게 관심을 갖는 사람은 누구입니까?

없음	1		4		7	
	2		5		8	
	3		6		9	

4-1. 위의 경우 얼마나 만족하십니까?

5. 침울해있을 때 기분을 풀어줄 사람은 누구입니까?

없음	1		4		7	
	2		5		8	
	3		6		9	

5-1. 위의 경우 얼마나 만족하십니까?

6. 속이 몹시 상해있을 때 위로해 줄 사람은 누구입니까?

없음	1		4		7	
	2		5		8	
	3		6		9	

6-1. 위의 경우 얼마나 만족하십니까?

인터넷 중독 검사 (40 항목)



본 질문들은 두 부분으로 나뉘어져 있습니다. 첫번째 부분은 본인의 인터넷 사용과 관련된 질문이고 두번째 부분은 귀하의 배우자의 인터넷 사용에 대한 귀하의 생각을 묻는 질문입니다. 각 질문에 가장 적절한 답을 보기에서 골라 하나의 숫자로 표기해 주세요.

**귀하의 인터넷 사용에 대해 (20 항목)**

[보기] 0=전혀 없음 1=드물게 가끔씩 2=때때로 3=자주 4=거의 항상 5=항상

1. 얼마나 자주 생각했던 것 보다 더 오래 온라인 상태에 머무르게 됩니까?
2. 온라인 상태에 좀더 있고 싶어 얼마나 자주 집안 일들을 소홀히 하게 됩니까?
3. 얼마나 자주 배우자와의 친밀함 보다 인터넷의 재미를 더 좋아하게 됩니까?
4. 얼마나 자주 온라인 상으로 새로운 친구 관계를 형성하게 됩니까?
5. 온라인에서 보내는 시간에 대해 사람들로 부터 얼마나 자주 불평을 듣습니까?
6. 온라인에서 보내는 시간 때문에 학업(성적) 또는 집안 일 등에 어려움을 얼마나 자주 겪습니까?
7. 얼마나 자주 해야할 일을 하기 전에 이메일을 확인하게 됩니까?
8. 얼마나 자주 인터넷 때문에 일의 실적이나 생산성에 어려움을 겪습니까?
9. 온라인에서 무엇을 하고 있는지 질문을 받게 되면 얼마나 자주 방어적이 되거나 비밀스럽게 됩니까?
10. 얼마나 자주 삶에 대한 피로운 생각들을 인터넷에 대한 생각으로 달래서 떨쳐 버리려고 합니까?
11. 언제 다시 온라인 상태가 될 수 있을지를 고대하고 있는 당신을 얼마나 자주 발견합니까?
12. 얼마나 자주 인터넷 없는 삶은 지루하고, 공허하고, 그리고 재미없을 것이라고 우려합니까?
13. 온라인 상태에 있을 때 누군가 당신을 귀찮게 하면 얼마나 자주 쏘아부치거나, 소리지르거나, 혹은 짜증을 내게 됩니까?
14. 얼마나 자주 늦은 밤까지 인터넷에 로그인 해 있느라 잠이 부족하게 됩니까?
15. 얼마나 자주 오프라인 상태일 때 인터넷을 사용하고픈 생각에 온통 정신이 나가 있거나 혹은 온라인 상태를 꿈꿔 봅니까?
16. 온라인 상태일 때 얼마나 자주 “몇 분만 더 할께”라고 말합니까?
17. 얼마나 자주 온라인 사용 시간을 줄이고자 노력하지만 실패합니까?
18. 얼마나 자주 온라인 사용 시간을 숨기려고 합니까?
19. 얼마나 자주 사람들과 밖에 나가서 보내는 시간 보다 온라인에 더 많은 시간을 보내고자 합니까?

20. 얼마나 자주 오프라인 상태에 있을 땐 우울하거나 침울하거나 혹은 불안해 하다가도 다시 온라인 상태로 돌아오면 그러한 기분이 사라집니까?

**귀하의 배우자의 인터넷 사용에 대해 (20 항목)**

**[보기] 0=전혀 없음 1=드물게 가끔씩 2=때때로 3=자주 4=거의 항상 5=항상**

1. 배우자는 얼마나 자주 생각했던 것 보다 더 오래 온라인 상태에 머무릅니까?
2. 배우자는 온라인 상태에 좀 더 있고 싶어 얼마나 자주 집안 일들을 소홀히 하게 됩니까?
3. 배우자는 얼마나 자주 귀하와의 친밀함 보다 인터넷의 재미를 더 좋아합니까?
4. 배우자는 얼마나 자주 온라인 상에서 새로운 친구 관계를 형성합니까?
5. 배우자는 온라인에서 보내는 시간에 대해 귀하 또는 사람들로 부터 얼마나 자주 불평을 듣습니까?
6. 배우자는 온라인에서 보내는 시간 때문에 학업(성적) 또는 집안 일 등에 어려움을 얼마나 자주 겪습니까?
7. 배우자는 얼마나 자주 해야할 일을 하기 전에 이메일을 확인합니까?
8. 배우자는 얼마나 자주 인터넷 때문에 일의 실적이나 생산성에 어려움을 겪습니까?
9. 배우자는 온라인에서 무엇을 하고 있는지 질문을 받게 되면 얼마나 자주 방어적이 되거나 비밀스럽게 됩니까?
10. 배우자는 삶에 대한 괴로운 생각들을 얼마나 자주 인터넷에 대한 생각으로 달래서 떨쳐 버리려고 합니까?
11. 언제 다시 온라인 상태가 될 수 있을지를 고대하고 있는 배우자를 얼마나 자주 발견합니까?
12. 배우자는 인터넷 없는 삶은 지루하고, 공허하고, 그리고 재미없을 것이라고 얼마나 자주 우려합니까?
13. 배우자는 온라인 상태에 있을 때 누군가 귀찮게 하면 얼마나 자주 쏘아부치거나, 소리지르거나, 혹은 짜증을 냅니까?
14. 배우자는 얼마나 자주 늦은 밤까지 인터넷에 로그인해 있느라 잠을 부족해합니까?
15. 배우자는 얼마나 자주 오프 라인 상태일때 인터넷을 하고 뜬 생각에 온통 정신이 나가 있거나 혹은 온라인 상황을 꿈꿨습니까?
16. 배우자는 온라인 상태일 때 얼마나 자주 “몇 분만 더 할게”라고 말합니까?
17. 배우자는 얼마나 자주 온라인 사용 시간을 줄이고자 노력하지만 실패합니까?
18. 배우자는 얼마나 자주 온라인 사용 시간을 숨기려고 합니까?



19. 배우자와 나는 서로를 완벽히 이해한다.
20. 배우자와 나는 서로의 있는 그대로를 받아들인다.
21. 배우자와 나는 공통의 결정을 쉽게 내릴수 있다.
22. 매우 사적인 일은 배우자가 모르도록 감추길 좋아한다.
23. 배우자에게 해줄게 별로 없다고 생각한다.
24. 다른 사람들과의 관계 보다 배우자와의 관계가 더 중요하다.
25. 우리 보다 더 행복한 커플들은 없을 것이다라고 생각한다.
26. 배우자와 나는 서로를 즐겁게 해주려고 노력한다.
27. 배우자와 나는 상대방이 말하지 않더라도 서로가 생각하고 느끼는 것을 알수 있다.
28. 나는 배우자가 듣고 싶어 하는 것들만을 말하려고 노력한다.
29. 만약 배우자와 의견이 다르면 나는 언성을 높인다.
30. 배우자와 나는 서로에게 보다 각자의 부모와 의논하고 싶은 것들이 있다.
31. 배우자와 나는 서로의 관계에 대해 같은 견해를 공유하고 있다.
32. 배우자와 나는 서로 칭찬한다.
33. 배우자와 나는 성(性)에 대해 서로 대화 한다.
34. 배우자와 나는 서로의 관계 이외의 다른 관계들도 필요로 한다.
35. 배우자와 나는 서로를 이해한다.
36. 만약 문제가 있으면 배우자와 나는 보통 함께 문제를 해결할 수 있다.
37. 배우자에게 개인적인 것을 이야기하고는 이후에 후회할 때가 있다.
38. 나는 내 배우자에게 매력적이라고 생각한다.
39. 배우자와 나에겐 상당한 거리감이 있다.
40. 때때로 나는 배우자의 이야기를 듣는 척할 때가 있다. .
41. 배우자는 나를 있는 그대로 받아들인다.
42. 중요한 것들에 있어 배우자와 나는 공통점이 거의 없다.
43. 배우자에게 나의 진실한 감정을 보여준다.

44. 배우자와 나는 때때로 서로에 대한 개인적인 일들을 친구들에게 이야기 한다.
45. 배우자와 나는 서로에게 사랑을 표현하는 것을 중요하게 여긴다.
46. 배우자와 나는 자주 자신의 생각을 상대방에게 주입하려고 한다.
47. 배우자와 나는 각자의 방식대로 산다.
48. 배우자와 나는 개인적인 일들을 의논한다.
49. 나는 종종 배우자와의 관계에 푹 빠져있다.
50. 배우자와 나는 어떤 일을 해야할 때 조율하는데에 보통 많은 시간이 걸린다.
51. 배우자와 나는 직감적으로 서로를 이해한다.
52. 배우자와의 관계에 있어 모든 것은 공개적으로 의논될 수 있다.
53. 배우자와의 관계가 내 자신의 발전을 저해한다.
54. 배우자와의 관계에 있어 믿음이 가장 중요한 요소이다.
55. 배우자와 나는 떨어져 있을 때 서로 애타한다.
56. 배우자와 나는 계획을 세울때 서로를 고려한다.

**인구학 및 기타 배경 정보 (17 문항)**

1. 성별 0=여자 1=남자 2=기타
2. 출생년월
3. 결혼일
4. 자녀 수
  - 4-1. 자녀의 연령
5. 미국 거주 기간  년
6. 귀하의 종교는?

- |           |   |
|-----------|---|
| 무교 .....  | 0 |
| 카톨릭 ..... | 1 |
| 개신교 ..... | 2 |
| 유대교 ..... | 3 |
| 불교 .....  | 4 |
| 기타 .....  | 5 |

7. 귀하의 신앙이 깊다고 느끼십니까?

- 전혀 아니다.....0
- 깊지는 않다.....1
- 어느정도 깊다.....2
- 매우 깊다.....3

8. 귀하에게 종교는 얼마나 중요합니까?

- 전혀 중요치 않다.....0
- 아주 중요하지는 않다.....1
- 어느정도 중요하다.....2
- 매우 중요하다.....3

9. 정규 교육 기간은?    년

9-1 최종 학위는?

- |          |          |
|----------|----------|
| 초졸.....1 | 대졸.....4 |
| 중졸.....2 | 석사.....5 |
| 고졸.....3 | 박사.....6 |

10. 귀하의 현재 주된 직업은?

- |               |               |
|---------------|---------------|
| 대학생.....1     | 주부.....6      |
| 대학원생.....2    | 프리랜서.....7    |
| 박사후 과정생.....3 | 기술자.....8     |
| 회사원.....4     | 성직자.....9     |
| 자영업.....5     | 교사/공무원.....10 |
| 기타.....11     |               |

11. 귀하 및 배우자를 포함한 총 월 가계 수입은 얼마입니까?

- \$10,000 미만.....1
- \$10,001-\$15,000.....2
- \$15,001-\$25,000.....3
- \$25,001-\$50,000.....4
- \$50,001-\$75,000.....5
- \$75,001-\$100,000.....6
- \$100,000 초과.....7

12. 귀하의 재정 상태는?

- 매우 나쁨.....1

나쁨 .....	2
보통 .....	3
좋음 .....	4
매우 좋음 .....	5

13. 귀하의 전반적인 영어 실력은?

매우 나쁨 .....	1
나쁨 .....	2
보통 .....	3
좋음 .....	4
우수 또는 매우 좋음 .....	5

14. 현재 귀하의 건강 상태를 평가한다면?

매우 나쁨 .....	1
나쁨 .....	2
보통 .....	3
좋음 .....	4
우수 또는 매우 좋음 .....	5

15. 일주일에 총 몇시간 정도 운동을 합니까?

1 시간 미만 .....	1
1-5 시간 .....	2
6-10 시간 .....	3
11-15 시간 .....	4
16-20 시간 .....	5
20 시간 초과 .....	6

15-1. 어느 정도의 강도로 운동을 하는 편입니까?

매우 약하게 .....	1
약하게 .....	2
적당하게 .....	3
강렬하게 .....	4
매우 강렬하게 .....	5

16. 신장 / 체중

17. 일주일에 담배를 피우거나 술을 마시는 날수는?

흡연: 회/주, 음주: 회/주

- 수고하셨습니다. 끝 -

### 9.3 Appendix C

#### Informed consent form (English)

## **CONSENT FORM**

### **Exploring the Relationship between Internet Use and Marital Quality among Adult Korean Couples aged 18 to 54 in the United States.**

You are invited to participate in a study of exploring the relationship between Internet use and marital quality among adult Korean aged 18 to 54 living in Minnesota. The study will help us begin to develop culturally appropriate and strengths-based Internet abuse intervention models to maximize quality of healthy and vital marital relationships. You were selected as a possible participant because you are a married Korean student or immigrant aged 18 to 54 living in the Minnesota. Your participation in this study is entirely voluntary.

This study is being conducted by Seok Won Jin, a doctoral student at the School of Social Work, the University of Minnesota. Before you decide whether or not to participate, please read the important information below and ask questions about anything you do not understand.

#### **Background Information**

The purpose of this study is to investigate the utilization of Internet among adult Korean couples aged 18 to 54 in Minnesota and to examine correlations between Internet use and marital quality in this group. Specifically this study seeks to understand: (1) the experience of Internet use, to this group, in the light of culture, and in the light of experiences of marriage in the United States; (2) experiences of religion, social supports, and health care services in the Internet-use experience; and (3) needed mental health services and programs in the community to coping with Internet abuse and marital issues.

The results of this research will produce rich information about the Internet use of adult Korean couples and their marriage. On a larger scale, we intend to use this information as a basis for developing strategies to minimize a negative impact of Internet use on mental health among couples from different cultural groups. We will work with community health care providers to help “translate” this information into social work practice, research, and policies that take into account the Internet use experiences of different cultural groups in your community.

#### **Procedures**

If you agree to be in this study, we would ask you to do the following things: You will be asked through email questions about how you experienced your Internet use, and how you perceived the quality of your marriage. In order to better understand the roles of culture, health status, health care accessibility, religion, and social support in your Internet use and marital quality, questions related to these will be asked through



email. The questionnaire consists of multiple-choice questions along with a few open-ended discussions.

There is no right or wrong answer to any questions, and we want you to answer freely in your own thoughts, describing your own opinions and experiences. The survey questionnaire will be delivered through email, with your permission. The entire questionnaire will take approximately one hour to complete. When you complete the questionnaire, please make sure to save the questionnaire as a MS Word file type and send it back to us through email as soon as possible.

### **Risks and Benefits of being in the Study**

The study has minimal risks for you. There may be some issues that you find uncomfortable to think about and answer. If so, you may choose not to answer particular questions, or not to describe particular issues. However, we expect that you will find answering these questions to be interesting and self-affirming, and that you may even come to think about Internet use behaviors and marital relationship you can count on in yourself and your life, that you were not fully aware of before. The researcher will take special steps to protect your privacy. Your name will not appear on the questionnaire itself.

A benefit of this research is that if you ask, the researcher will provide information of mental health services available in the community and in Minnesota. In addition, this research could be an initial step in increasing the level of knowledge of potential of Internet heavy use as well as related mental health services and in eliminating health disparities among minority groups. The findings from this study will help health professionals and policymakers in understanding the scope and the nature of the mental health and marital issues related to Internet use in minority communities, identifying service needs, and developing appropriate prevention, intervention and public policies that are culturally relevant to minority ethnic populations.

### **Compensation**

You will receive an online gift voucher worth \$5 as an expression of our appreciation for your participation in this research. You will receive this gift voucher through email when you return the completed questionnaire back to the researcher through email. If you decide not to answer some questions, you will still receive that gift voucher.

### **Confidentiality**

The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify you. Research records will be stored securely and only a researcher will have access to the records. Since all data will be collected through using email, the research data and personal

information including email addresses of participants in this study will be kept in locked filing cabinets and secured computer files, under the control of the researcher. Only the researcher will have access to original information. Your email address will be separated from your questionnaire attached in the email immediately after being printed out, and will be stored, separately, in a file secured by the researcher. Only the researcher will have access to even the de-identified research information. The research data and personal information of participants in this study will be kept for 5 years for subsequent research and then they will be destroyed.

You will be given a copy of this form written in Korean and be asked to read it. The information you provide will remain confidential. You have a right to refuse to participate in the study and are free to withdraw your consent at any time without penalty.

### **Voluntary Nature of the Study**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

### **Contacts and Questions**

The researchers conducting this study are Seok Won Jin, doctoral student and Ronald Rooney, Ph.D, Professor at the School of Social Work, University of Minnesota. You may ask any questions you have at this time. If you have questions later, **you are encouraged** to contact either of the two researchers:

Seok Won Jin: contact via phone (612-703-9612) or email ([jinxx140@umn.edu](mailto:jinxx140@umn.edu)). He can also be contacted at the following address: School of Social Work, University of Minnesota, 1404 Gortner Ave. St. Paul, MN 55108.

Ronald Rooney: contact via phone (612-624-3712) or email ([rrooney@umn.edu](mailto:rrooney@umn.edu)). He can also be contacted at the following address: School of Social Work, University of Minnesota, 1404 Gortner Ave. St. Paul, MN 55108.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

***You will be given a copy of this information to keep for your records.***

### **Statement of Consent:**

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Interviewer: \_\_\_\_\_ Date: \_\_\_\_\_

## 9.4 Appendix D

### Informed consent form (Korean)

연구참가 동의서

## 미국 거주 18-54 세 한국인 성인 부부의 인터넷 사용과 결혼생활의 질에 대한 관련성 연구

귀하는 미네소타 거주 18-54 세 한국인 성인 부부의 인터넷 사용과 결혼생활의 질에 대한 관련성 연구에 참여를 요청 받고 계십니다. 본 연구는 건강하고 활기찬 결혼 관계를 극대화하기 위해 문화적으로 적절하고 또한 개인의 강점에 근거한 인터넷 남용 방지 모델을 개발하는데 도움을 줄 것입니다. 귀하는 미네소타에 거주하는 18-54 세 기혼 한국인 학생 또는 이민자로서 본 연구에 선발되신 것입니다. 귀하의 본 연구참여는 전적으로 자발적입니다.

본 연구는 미네소타 대학교 사회복지대학의 진석원 박사과정 학생에 의해서 수행되고 있습니다. 참여 여부를 결정하기에 앞서, 아래의 중요한 정보를 읽어 보신 후 이해가 되지 않는 것에 대해 질문해주시기 바랍니다.

### 배경 정보

본 연구의 목적은 미네소타 거주 18-54 세 성인 한국인 부부의 인터넷 활용도를 살펴보고 이들의 인터넷 사용과 결혼의 질 사이의 관련성에 대해 조사하는 것입니다. 특별히, 본 연구가 이해하고자 하는 바는: (1) 연구 집단에 있어서, 문화 및 미국 내 결혼생활의 경험을 감안한 인터넷 사용 경험; (2) 인터넷 사용 경험 속에서 종교, 사회적 지원 및 의료 서비스에 대한 경험; (3) 인터넷 남용과 결혼 문제의 대처를 위해 지역사회가 필요로 하는 정신 건강 서비스들입니다.

본 연구 결과들은 성인 한국인 부부 및 그들의 결혼 생활에 대해 많은 정보를 제공해 줄 것입니다. 넓게 보면, 다른 문화 집단 부부들의 정신 건강에 대한 인터넷 사용의 부정적 영향을 최소화 할 수 있는 전략 개발의 기초로서 본 이러한 정보는 사용될 것입니다. 지역사회 의료 공급자들과의 협력을 통해 이러한 정보가 사회 사업 실천, 연구 및 귀하 지역사회의 다른 문화 집단들의 인터넷 사용 경험을 고려하는 정책들로 “변환시키도록” 노력을 다할 것입니다.

### 연구 절차

만약 본 연구에 참여하기로 동의하신다면, 다음의 사항을 요청받게 되실 겁니다: 귀하의 인터넷 사용과 귀하의 결혼 생활의 질에 대해 귀하가 각각 어떻게 경험하고 인식했었는지에 대해 이메일을 통해 질문에 답하도록 요청받게 될 것입니다. 귀하의 인터넷 사용과 결혼 생활의 질에 있어 문화, 건강 상태, 의료 서비스 이용성, 종교, 그리고 사회적 지원역할을 더욱 잘 이해하기 위해, 관련 질문을 이메일을

통해 받게 되실 겁니다. 질문지는 객관식과 몇 개의 주관식 질문들로 구성되어 있습니다.

모든 질문에 오답 또는 정답은 없으며, 귀하의 의견이나 경험을 설명한다고 생각하는 것에 자유롭게 답하여 주시기 바랍니다. 설문지는 귀하의 허락 속에 이메일로 보내질 것입니다. 질문 전체에 답하는데 걸리는 시간은 약 한시간 정도입니다. 질문지를 끝마치시게 되면, MS Word 화일로 저장 하신 후 가능한 빨리 이메일로 보내주시면 감사하겠습니다.

### **연구 참여의 위험성 및 혜택**

본 연구의 위험성은 극히 적습니다. 귀하가 생각하거나 답하기에 불편한 문제가 있을 수 있습니다. 그러한 경우, 특정 질문에 답을 하지 않거나 특정 문제를 기술하지 않으실 수 있습니다. 하지만, 예상컨대 질문들은 흥미롭고 자기 확인의 기회를 제공하며, 귀하 자신과 귀하의 삶 속에서 예전에 미처 인식하지 못했던 인터넷 사용 행동양식과 결혼 관계를 생각해 볼 수 있는 기회를 제공하게 될 것입니다. 연구자는 귀하의 사생활을 보호하기 위해 특별한 절차 단계들을 밟게 될 것입니다. 귀하의 이름은 설문지에 표시되지 않을 것입니다.

본 연구의 혜택으로서, 만일 귀하의 요청이 있는 경우, 본 연구자는 지역사회와 미네소타에서 이용가능한 정신 건강 서비스 관련 정보를 제공하게 될 것입니다. 또한, 본 연구는 인터넷 과다 사용 잠재성 및 관련 정신 건강 서비스에 대한 지식의 수준을 높이는 동시에 소수 집단의 건강 불균형을 제거하는 첫 걸음이 될 수 있을 것입니다. 본 연구로 부터 얻어진 결과들은 건강 전문가 및 정책 입안자들을 도와 소수집단의 지역사회의 인터넷 사용과 관련된 정신 건강 및 결혼 문제의 폭과 본질을 이해하도록 돕는 동시에 서비스 필요를 확인하고 소수 민족 인구에 문화적으로 관련 있는 적절한 예방, 개입 및 공공 정책을 개발하도록 돕게 될 것입니다.

### **보상**

귀하의 본 연구 참여에 대한 감사의 표시로 5불 상당의 온라인상품권을 받게 될 것입니다. 설문지를 끝마친 후 본 연구자에게 이메일을 통하여 제출하여 주시면 이메일을 통해 본 상품권을 수령하게 됩니다. 만약 몇몇의 질문에 답하지 않으셨더라도 본 상품권을 받으실 수 있습니다.

### **비밀보장**

본 연구의 기록들은 비밀에 부쳐질 것입니다. 발간될 어떠한 종류의 보고서에서도 귀하를 알 수 있는 어떤 정보도 포함되지 않을 것입니다. 연구 기록들은 안전하게

보관 될 것이며 오직 본 연구자만이 기록들에 접근할 수 있습니다. 모든 자료들이 이메일을 통해 수집되기 때문에, 연구 자료 및 참여자의 이메일 주소를 포함한 개인 정보는 서랍 속에 넣어져 잠겨질 것이며 컴퓨터 파일들 또한 연구자의 통제 아래 안전하게 보관되어 질 것입니다. 오직 본 연구자만이 본 정보에 접근 가능합니다. 귀하께서 작성 후 이메일에 첨부하여 보내 주신 설문지는 출력 후 귀하의 이메일 주소와 분리 되어 본 연구자의 서랍에 별도 보관되어 저장될 것입니다. 신원이 확인이 불가능하게 된 연구 정보라 하더라도 오직 본 연구자만이 접근할 수 있습니다. 연구 자료 및 참여자의 개인 정보는 계속될 연구를 위해 향후 5년간 보관 된 후 파기 처분될 것입니다.

귀하께서는 한글로 작성된 본 동의서 사본 한부를 제공받게 되시며 읽도록 요청을 받으실 것입니다. 귀하께서 제공한 정보들은 비밀로 남게 됩니다. 귀하께서는 본 연구에 대한 참여를 거부하실 권리가 있으며 어떠한 불이익을 받지 않고 자유로이 연구참여 동의를 철회하실 수 있습니다.

### 연구 참여의 자발성

본 연구에 대한 참여는 자발적인 것입니다. 참여 여부에 대한 귀하의 결정은 현재 및 향후 미네소타 대학과의 관계에 어떠한 영향도 미치지 않을 것입니다. 만일 귀하께서 참여를 결정하게 되실지라도 자유로이 질문에 대답하지 않거나 어떠한 관계에 영향을 미치는 것 없이 언제든지 참여를 철회하실 수 있습니다.

### 연락처 및 질문

본 연구를 수행하고 있는 연구자는 미네소타 대학교 사회복지대학 진석원 박사과정 학생과 로널드 루니 교수입니다. 어떠한 질문이던 관계 없이 지금하실 수도 있으며 향후 질문이 있으시면 두 연구자들에게 연락을 주십시오:

진석원: 전화 (612-703-9612) 혹은 이메일 ([jinx140@umn.edu](mailto:jinx140@umn.edu)). 다음의 주소로도 연락하실 수 있습니다: School of Social Work, University of Minnesota, 1404 Gortner Ave. St. Paul, MN 55108.

Ronald Rooney: 전화 (612-624-3712) 혹은 이메일 ([rrooney@umn.edu](mailto:rrooney@umn.edu)). 다음의 주소로도 연락하실 수 있습니다: School of Social Work, University of Minnesota, 1404 Gortner Ave. St. Paul, MN 55108.

본 연구와 관련하여 어떠한 질문과 걱정을 본 연구자 이외의 다른 사람과 이야기 나누길 원하신다면 다음의 주소로 연락하실 수 있습니다: the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

*귀하의 보관을 위해 본 정보는 사본이 제공됩니다.*

**동의 진술:**

본인은 위의 모든 정보를 읽었으며 궁금한 사항에 대하여 질문 후 답변을  
받았습니다. 이에 본인은 본 연구에 참여하기를 동의하는 바입니다.

서명: \_\_\_\_\_ 날짜: \_\_\_\_\_

연구자 서명: \_\_\_\_\_ 날짜: \_\_\_\_\_

**9.5 Appendix E**

**Institutional Review Board (IRB) Approval Letter**

## UNIVERSITY OF MINNESOTA

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*Twin Cities Campus*

*Human Research Protection Program  
Office of the Vice President for Research*

*1528 Mayo Memorial Building  
420 Delaware Street S.E.  
MMC 820  
Minneapolis, MN 55455  
Office: 612-626-5654  
Fax: 612-626-6061  
E-mail: [irb@umn.edu](mailto:irb@umn.edu) or [ibc@umn.edu](mailto:ibc@umn.edu)  
Website: <http://research.umn.edu/subjects/>*

09/08/2011

Seok Won Jin

RE: "Exploring the Relationship between Internet Use and Marital Quality among Adult Korean Couples aged 18 to 54 in the United States"  
IRB Code Number: **1108P03322**

Dear Seok Won Jin:

The referenced study was reviewed by expedited review procedures and approved on September 7, 2011. If you have applied for a grant, this date is required for certification purposes as well as the Assurance of Compliance number which is FWA00000312 (Fairview Health Systems Research FWA00000325, Gillette Children's Specialty Healthcare FWA 00004003). Approval for the study will expire one year from that date. A report form will be sent out two months before the expiration date.

Institutional Review Board (IRB) approval of this study includes the consent form and recruitment flyer, both received August 12, 2011.

The IRB would like to stress that subjects who go through the consent process are considered enrolled participants and are counted toward the total number of subjects, even if they have no further participation in the study. Please keep this in mind when calculating the number of subjects you request. This study is currently approved for 200 subjects. If you desire an increase in the number of approved subjects, you will need to make a formal request to the IRB.

The code number above is assigned to your research. That number and the title of your study must be used in all communication with the IRB office.



As the Principal Investigator of this project, you are required by federal regulations to inform the IRB of any proposed changes in your research that will affect human subjects. Changes should not be initiated until written IRB approval is received. Unanticipated problems and adverse events should be reported to the IRB as they occur. Research projects are subject to continuing review and renewal. If you have any questions, call the IRB office at 612-626-5654.

On behalf of the IRB, I wish you success with your research.

Sincerely,



Christina Dobrovolny, CIP  
Research Compliance Supervisor  
CD/ks

CC: Ronald Rooney

## 9.6 Appendix F

### Tables

**Table 16. Predictors of self-rated IAT with/without time spent online (P-values)**

Predictor	Without nonessential Internet use		With nonessential Internet use	
	Self	Spouse	Self	Spouse
Nonessential Internet use	<b>&lt;.0001</b>	.5094	-	-
Acculturative stress	<b>.0574</b>	.4506	<b>.0040</b>	.5404
Depression	<b>.0368</b>	.3433	<b>.0605</b>	.3268
Satisfaction of social support	.2002	.2502	.2471	<b>.0175</b>
Overall marital intimacy	.1769	.4986	.2744	.8704
Intimacy problem	.3942	.4458	.3316	.3237
Consensus	<b>.0993</b>	.5889	<b>.2099</b>	.8297
Openness	.3852	.5088	.9717	.8964
Affection	.2875	.9276	.3659	.3714
Commitment	.1476	.3319	<b>.0778</b>	.3940

**Table 17. Predictors of self-rated IAT with/without marital intimacy (P-values)**

Predictor	Without marital intimacy		With marital intimacy					
	Self	Spouse	Overall MI		IP		CS	
			Self	Spouse	Self	Spouse	Self	Spouse
NIU	<b>&lt;.0001</b>	.5094	<b>&lt;.0001</b>	.6242	<b>&lt;.0001</b>	.5742	<b>&lt;.0001</b>	.5924
AS	<b>.0574</b>	.4506	<b>.0962</b>	.3255	<b>.0976</b>	.3478	.1265	.3610
Depression	<b>.0368</b>	.3433	.1099	.4952	<b>.0636</b>	.4449	.1477	.4500
SSS	.2002	.2502	.2175	.2114	.1693	.2577	.2894	.2907

Predictor	With marital intimacy					
	OP		AF		CM	
	Self	Spouse	Self	Spouse	Self	Spouse
NIU	<b>&lt;.0001</b>	.5418	<b>&lt;.0001</b>	.5657	<b>&lt;.0001</b>	.5974
AS	<b>.0653</b>	.3748	<b>.0789</b>	.3902	.1094	.3077
Depression	<b>.0640</b>	.4525	<b>.0753</b>	.3541	.1218	.6109
SSS	.1755	.2139	.2455	.2436	.1924	.2378

Note: NIU = Nonessential Internet Use, AS = Acculturative Stress, SSS = Social Support Satisfaction, MI = Marital Intimacy, IP = Intimacy Problems, CS = Consensus, OP = Openness, AF = Affection, and CM = Commitment

**Table 18. Predictors of partner-rated IAT with/without time spent online (P-values)**

Predictor	Without nonessential Internet use		With nonessential Internet use	
	Self	Spouse	Self	Spouse
Nonessential Internet use	<b>.0009</b>	.2918	-	-
Acculturative stress	.3878	<b>.0036</b>	.7394	<b>.0018</b>
Depression	.6616	<b>.0025</b>	.8297	<b>.0030</b>
Satisfaction of social support	<b>.0900</b>	<b>.0073</b>	<b>.0460</b>	<b>.0256</b>
Overall marital intimacy	.9451	<b>.0063</b>	.8418	<b>.0255</b>
Intimacy problem	.5275	.1506	.3944	.1636
Consensus	.8041	<b>.0004</b>	.5449	<b>.0020</b>
Openness	.6630	<b>.0136</b>	.3065	<b>.0375</b>
Affection	.5907	<b>.0282</b>	.4422	<b>.0988</b>
Commitment	.8981	<b>.0020</b>	.8311	<b>.0010</b>

**Table 19. Predictors of partner-rated IAT with/without marital intimacy (P-values)**

Predictor	Without marital intimacy		With marital intimacy					
	Self	Spouse	MI		IP		CS	
			Self	Spouse	Self	Spouse	Self	Spouse
NIU	<b>.0009</b>	.2918	<b>.0025</b>	.3785	<b>.0012</b>	.3451	<b>.0014</b>	.3809
AS	.3878	<b>.0036</b>	.4243	<b>.0252</b>	.2955	<b>.0093</b>	.5677	<b>.0560</b>
Depression	.6616	<b>.0025</b>	.7431	<b>.0480</b>	.7969	<b>.0095</b>	.6345	.1183
SSS	<b>.0900</b>	<b>.0073</b>	.1357	<b>.0270</b>	.1047	<b>.0059</b>	.2786	<b>.0684</b>

Predictor	With marital intimacy					
	OP		AF		CM	
	Self	Spouse	Self	Spouse	Self	Spouse
NIU	<b>.0013</b>	.4114	<b>.0020</b>	.3040	<b>.0007</b>	.3343
AS	.5071	<b>.0126</b>	.5204	<b>.0205</b>	.2974	<b>.0159</b>
Depression	.6066	<b>.0171</b>	.5565	<b>.0204</b>	.9016	<b>.0459</b>
SSS	.1784	<b>.0232</b>	.1356	<b>.0264</b>	.1778	<b>.0206</b>

Note: NIU = Nonessential Internet Use, AS = Acculturative Stress, SSS = Social Support Satisfaction, MI = Marital Intimacy, IP = Intimacy Problems, CS = Consensus, OP = Openness, AF = Affection, and CM = Commitment