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EXPLORING COMMUNICATION OF COMPULSIVE GAMERS
AND THEIR LOVED ONES: A TENSIONAL APPROACH

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ABSTRACT OF THE DISSERTATION

EXPLORING COMMUNICATION OF COMPULSIVE GAMERS

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With the increasing popularity of online games, compulsive gaming has emerged as an important social issue. Previous scholarship, especially from pathological perspectives, tends to focus on the effects of compulsive gaming on the gamer only at *individual* level, overlooking dynamic interpersonal communication processes between gamers and their loved ones (e.g., family, romantic partners, or friends). However, compulsive gaming (so-called game addiction) does not exist in a vacuum; compulsive gamers and their loved ones experience and deal with complex interpersonal relationship issues specific to unhealthy gaming.

The current study focuses on three particular online support groups that are designed for (recovering) compulsive online gamers and their loved ones where they share social support to cope with their problems associated with compulsive gaming. Assuming compulsive online gaming and online social support are two interrelated

aspects of internet use, this study examines the associations among compulsive gaming, gaming-related partner-control, gaming-specific relational conflict, and online social support. Drawing upon Relational Dialectics Theory (Baxter & Montgomery, 1996), Inconsistent Nurturing as Control Theory (Le Poire, 1995), and Buffering Effect Model of Social Support (Cobb, 1976; Cohen & Wills, 1985), the current study poses 18 hypotheses that link six study variables: compulsive gaming, partner-control, and relational conflict in *offline* contexts, and online support group participation, support group identification, and social support in *online* contexts.

Findings of an online survey of both gamers (N=103) and loved ones (N=57) supported the hypothesized positive associations between (a) compulsive gaming and consistent partner-control, (b) offline relational conflict and online support group participation level, (c) online support group participation and the amount of received online social support, and (d) online social support and online support group identification. The hypothesis on the mediating effects of relational conflict on online support group participation was also supported, indicating that (e) relational conflict between gamers and loved ones mediates the associations between partner-control and online support group participation. This highlights the important roles of both partner's controlling strategies and relationship problems in predicting online support group use for both compulsive gamers and their loved ones. Another path was found that (f) gamer's received online social support mediates the impact of positive partner-control on gamer's online support group participation. This suggests that positive reinforcement from non-gaming partners in tandem with online social support from other fellow recovering gamers predicts the level of online support group participation of recovering gamers.

Overall, the quantitative findings highlight the important role of the loved ones of gamers in both gamer's dyadic relational conflicts *offline* and the collective recovery process (social support) *online*.

In addition, qualitative interviews (N=20) found two overarching dialectics between (g) *expression* and *privacy* in the online support forum as well as (h) *nurturing* and *controlling* in offline relationship. 11 tension management strategies (e.g., selection, vacillation, separation, hybrid sense-making) were also identified and discussed along with specific instances of micro control strategies of loved ones (13 tactics) and gamers' responses (10 reactions), respectively.

This dissertation contributes to expanding the scholarship of problematic internet use, relationship tensions, and online social support. Moreover, discovering and highlighting the important role of the loved ones offers practical insights into the treatment of compulsive online gaming. This study also contributes to communication research with an integrated model of compulsive gaming, partner-control, relational conflict, and online social support group dynamics, which helps gamers, loved ones, scholars, and health practitioners understand the complexly interrelated problematic vs. supportive internet uses at the individual, interpersonal, and group level.

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I. INTRODUCTION

The internet has extended our ability to communicate across time and space, which has improved the overall quality of our lives in terms of information seeking and interpersonal relationships (Walther & Parks, 2002). According to the Pew Research Center, about 75% of Americans use the internet on a daily basis and 21% go online ‘almost constantly’ (Perrin, 2015). Given the widespread and ongoing use of the internet, scholarly attention to so-called ‘internet addiction’ has begun to emerge (Kardefelt-Winther, 2014; Young & de Abreu, 2011). In media history, whenever a new medium is adopted, both popular press and the scientific community begin to discuss its ‘addictive’ quality at some point (see Tokunaga, 2015). Television (Kubey & Csikszentmihalyi, 1990) and video games (Griffiths & Meredith, 2009) have been popular targets for the media ‘addiction’ discourse, and the internet has become perhaps the latest target (Young, 2004).

Among various internet activities, this study focuses on compulsive online gaming and its associated tensions across online and offline contexts at individual, interpersonal, and group levels. Compulsive gaming is important to study for several reasons. First, the popularity of video and online games is increasing. Nearly 50% of American adults play games and 10% of them self-identify as a ‘gamer’ (Duggan & Page, 2015). Such popularity cultivated new discourses of ‘gaming disorder’ (APA, 2014; Sublette & Mullan, 2012). Compulsive gaming has been found to be negatively associated with the frequency and the quality of face-to-face human interaction, thereby damaging overall interpersonal communication within family dynamics and romantic relationships (Coyne et al., 2012; Peters & Malesky, 2008; Young, 2009). Scholars have

reported individual consequences of compulsive gaming such as increased aggression (Anderson et al., 2010), depression, anxiety, social phobia, and poor academic/vocational performance (Gentile et al., 2011), and loneliness (Lemmens et al., 2011).

Prior psychology studies tend to approach compulsive gaming from a pathological viewpoint by focusing more on the symptoms of individual compulsive gaming (Sim et al., 2012). In doing so, the dynamic interpersonal communication processes between compulsive gamers and their significant others, family, and friends (hereafter loved ones) have been overlooked. Previous studies have left some unanswered questions about compulsive gamers and their loved ones' interpersonal relationships. Namely, compulsive gaming influences not only an individual's well-being but also one's interpersonal relationships. The current study aims to explore how compulsive gamers and their loved ones experience interpersonal conflicts (e.g., argument) in their offline relationships and how they seek support inside and outside of their relationships to cope with both relational problems and gaming problems. Thus, the current study examines online communities for self-identified 'game addicts' and their loved ones, respectively.

There are many empirical studies on whether and how people derive social support from online communities to overcome their personal hardships, especially physical health problems (see Rains & Young, 2009). However, recovery-specific online support groups are still under-researched. For example, how compulsive gamers and their loved ones use online support communities to communicate social support to overcome their problems associated with compulsive gaming is still unknown. In this context, three specific online support forums for compulsive gamers and their loved ones

were explored to expand previous online support group scholarship to compulsive gaming and recovery context.

Compulsive online gaming and online social support groups show two sides of internet use. The existence of online support groups for compulsive gamers suggests that some internet users ironically experience both negative (i.e., compulsive gaming) and positive (i.e., online support group) uses of the internet simultaneously. Self-identified game addicts' online recovery support groups show how internet users are ironically carrying fire in one hand and water in the other. One form of the internet seduces people into compulsive gaming; the other form, online support communities, is used as its solution. The paradoxical relationship between compulsive gaming and online social support inspired the researcher to question (a) how these seemingly contradictory forces can coexist within specific online forums and (b) how those two phenomena are associated with interpersonal relationships. Thus, the main goal of this study is to examine the relational conflict of both compulsive gamers and their loved ones and its role in their participation in specific online support groups to receive online social support. In doing so, it will be possible to connect the compulsive online gaming phenomenon with the online social support framework. As a result, this study helps specific populations alleviate compulsive gaming-related negative outcomes.

Studying the experience of compulsive online gamers and their loved ones also tells us about important issues in communication studies, in particular supportive communication and relational communication. According to recent news (Denyer & Jinglu, 2016; Sanderson, 2017), China diagnoses compulsive internet use as an addiction disorder and runs many military style rehab 'boot-camps' where many unfortunate

accidents such as violence, abuse, injuries, and even several cases of murder happen. More than 10,000 Chinese teenagers have been through such ‘disciplining’ facilities. Such a controversial approach to compulsive gaming recovery, that is not grounded in scientific studies, raises the importance of empirical research on supportive communication processes between compulsive gamers in natural settings as well as more examination of interpersonal communication problems in daily relationships between the gamers and their loved ones. Through the current study, a bigger context – relational conflict and social support - of individual compulsive behavior will be identified, which can offer valuable insights to other compulsive behavior situations such as problematic uses of social media, mobile phone, online shopping, or online pornography.

I employed a mixed methods research design that includes an online survey (N=160) and in-depth interviews (N=20) of both compulsive gamers and loved ones. Grounded in both quantitative and qualitative methods and multilayered data, I build and test a research model to describe relationships among compulsive online gaming, relational conflicts, and online social support. As a result, this study proposes an integrative model of constructive and destructive aspects of internet use and how the double-sided internet uses are connected to interpersonal communication dynamics.

The dissertation is structured as follows. Chapter II reviews prior studies on two online activities: online gaming and online social support. First, I reviewed the impact of compulsive gaming on both gamers and their loved ones (e.g., family, partners, friends). Through reviewing relevant literature on game addiction and problematic internet use, problems of pathology frameworks are identified. As an alternative to the addiction framework, the cognitive-behavioral model (Caplan, 2002, 2003; Davis, 2001) was

chosen to approach the compulsive gaming problem in the current study. Next, online social support predictors and outcomes are reviewed.

Chapter III introduces a tensional approach as the main framework of the current study along with three theories that provide the theoretical foundation for two research questions and 18 hypotheses. First, Relational Dialectics Theory (Baxter, 1988; Baxter, & Montgomery, 1996) is discussed as the first theoretical basis to examine relational tensions between compulsive gamers and their loved ones and their tension management strategies. Inconsistent Nurturing as Control Theory (Le Poire, 1995) was also chosen as a second theoretical base because of its implications for the complex interaction effect between addicts and caregivers. The current study is the first study that applies both INC and RDT to the relational context between compulsive gamers and loved ones. In addition, the Buffering Effect Model of Social Support (Cobb, 1976; Cohen & Wills, 1985) offered grounds to explore the mediating role of online social support on the amount of online social support and identification with the support group.

Chapter IV proposes a mixed methods design because mixed methods can provide rich insight that surpass studies that use a single method design by reinforcing, integrating, and elaborating our understandings of human communication behavior (Myers & Powers, 2017). Characteristics of three research sites are briefly described where both online survey and online interview participants (gamers in recovery and loved ones) were recruited. Then, the online survey procedures, sample, and survey instrument are described. Next, the qualitative in-depth interview data collection and analysis procedures are explained.

Chapter V reports the results of both quantitative research and qualitative research.

Quantitative findings include descriptive analysis results along with reliability, factor analysis, bivariate correlations, and independent sample t-tests. Multiple regression analysis and mediation analysis results are also reported. Qualitative research findings have two central themes: nurture- control dialectics and expression – privacy dialectics. Each dialectical tension is explained in detail with specific subcategories of tension management strategies and interview quotes.

Chapter VI interprets and discusses the findings. First, both the quantitative and qualitative findings are summarized. Then their key findings are connected based on the overarching theoretical framework. Theoretical contributions to Relational Dialectics Theory, Inconsistent Nurturing as Control Theory, and social support scholarship are discussed. Practical implications for therapists and researchers in compulsive gaming and recovery programs are also addressed. Methodological limitations and suggestions for future research are mentioned, followed by brief concluding remarks.

II. LITERATURE REVIEW

Based on its interactivity, multimedia features, accessibility and synchronicity, computer-mediated communication (CMC) attracts more and more internet users. Two popular forms of CMC, multiplayer online gaming and online social support groups, show how the same internet technology can be appropriated for different purposes and thereby bring its users varied outcomes. Previous studies of compulsive gaming have not examined online support groups as a potential recovery tool. Prior online social support research has not paid attention to compulsive gaming or problematic internet use as a context either. Moreover, there is no prior study on the relational tensions and coping strategies that the loved ones of gamers experience. Therefore, the current study attempts to fill a gap in the previous literature by connecting compulsive gaming (individual problem), loved ones' response (relational problem), and online social support (group level solutions to those two problems) in order to draw an extended model of social support communication for compulsive online gamers and their loved ones. To begin with, I will review literature on compulsive online gaming and its impacts.

Problematic Internet Use: Compulsive Online Gaming

Before reviewing gaming impacts on both gamers and their loved ones, the broader context of problematic internet use (PIU) needs to be discussed.

Generalized Problematic Internet Use. Researchers have used divergent terms to address unhealthy attachment to internet-based technologies and online activities (Tokunaga & Rains, 2010). These terms include 'problematic internet use' (Caplan, 2003; 2005; Caplan, Williams, & Yee, 2009), 'pathological internet use' (Morahan-Martin, & Schumacher, 2000; Sim et al., 2012), and 'internet addiction' (Griffiths, 2000; Young,

1998). The aforementioned terms are often used interchangeably; however, they are conceptually different. For example, *excessive internet use* refers to internet use that is disproportionate. Time spent on the internet, however, is not necessarily a sufficient predictor of problems because some heavy internet users may use the internet constructively for productive purposes (Brand et al., 2011; Tokunaga & Rains, 2010). To better operationalize unhealthy internet use, psychosocial and cognitive antecedents are more adequate indicators than the simple amount of time spent on the internet (Liu & Peng, 2009). In other words, the sum of time spent on online activities is more likely to be the *result* of unhealthy internet use rather than a predictor. In comparison with excessive internet use, *pathological internet use* focuses on an individual's persistent inability to control excessive online activities despite their social or emotional consequences (Lemmens et al. 2011). *Compulsive internet use* (LaRose, Lin, & Eastin, 2003) describes a loss of control over one's internet use. *Problematic internet use* is a bi-dimensional construct composed of cognitive distortion (e.g., preoccupation with the internet use, preference of online interaction) and dysfunctional behavior (e.g., compulsive use, using the internet to regulate mood) that results in negative consequences (Caplan, 2002; Davis, 2001). Overall, the existence of the aforementioned divergent terms and more than 45 different assessments (see Laconi, Rodgers, & Chabrol, 2014 for a review) suggest that there is still definitional imprecision and a lack of clarity in the operationalization of unhealthy internet use. The current study accepts and uses *problematic internet use* (hereafter PIU) conceptualizations because it addresses both cognitive and behavioral symptoms (Davis, 2001) compared to other terms and views that focus only on one dimensional factor (e.g., time, frequency). Problematic internet use

is not merely an addiction or habit but a set of behaviors and preoccupations that show a continuum of unregulated internet use behavior (Muusses et al., 2013).

Problematic internet users reported lower quality of interpersonal relationships (Milani, Osualdella, & Di Blasio, 2009), decreased relational well-being, commitment, and intimacy in marriage (Kerkhof, Finkenauer, & Muusses, 2011), which suggests the important role of PIU in interpersonal conflicts. One of the goals of the current study is to explore the interpersonal conflict between individuals with PIU and their loved ones. Generalized PIU, however, is too broad a construct to explain the unique affordances of particular online activities. In fact, the American Psychiatric Association (APA, 2014) has not diagnosed problematic internet use as an official addiction disorder in the latest Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Instead, APA included ‘internet gaming disorder’ in the DSM-5 appendix of disorders for further consideration and study¹. This suggests that there is a clear distinction between *generalized* PIU and *specific* PIU (Cole & Hooley, 2013) because specific PIU occurs independently from GPIU (Laconi, Tricard, & Chabrol, 2015). Apparently, the internet is “*media* rather than *medium*” (Walther, Gay, & Hancock, 2005, p. 651). Simply put, dependence *on* the internet *content* and addiction *to* the internet *channel* need to be distinguished (Griffiths, 2000a; Kim & Haridakis, 2009; Tokunaga & Rains, 2010). Namely, so-called internet “addicts” use the internet as a *medium* to enable and “fuel” other addictions rather than being addicted *to* the internet *per se* (Griffiths, 2008). For instance, social uses of the internet such as social networking or chatting (LaRose, Kim, & Peng, 2011; Laconi et al., 2015) and multiplayer online gaming are prominent subcategories of PIU. Beside specific online activity types (e.g., information seeking, sex, gaming, gambling,

shopping), gender, age (Laconi et al., 2015), and personality factors such as openness² to experience (Kuss, Griffiths, & Binder, 2013), impulsivity (Mottram & Fleming, 2009), and novelty-seeking (Ko et al., 2010) are found predict PIU. In such a complex context of PIU, the current study will narrow down the scope to online gaming.

Effects of gaming on gamers. Although the focus of the current study is not on the gaming per se, previous research on gaming effects can provide insight into its associated outcomes. The negative effects of compulsive gaming have been widely studied (for a systematic review, see Lee & Peng, 2006 and Sublette & Mullan, 2012). Online gaming has been positively linked to aggression (Anderson et al., 2010), gender stereotyping (Dill, Brown, & Collins, 2008), depression, anxiety, social phobia (Gentile et al., 2011), sensation-seeking, neuroticism (Mehroof & Griffiths, 2010), loneliness (Lemmens et al., 2011), lower offline social capital (Collins & Freeman, 2013), low quality of interpersonal relationships (Lo, Wang, & Fang, 2005), low self-regulation, low agreeableness, impulsivity (Collins, Freeman, & Chamarro-Premuzic, 2012), decreased happiness, and stress (Muusses et al., 2014). The aforementioned studies that focus on the negative consequences of gaming are mainly conducted and published in the psychology discipline.

On the other hand, there is substantial evidence to challenge these findings, especially from communication scholarship. For instance, Williams and Skoric (2005) found that violent games did not necessarily lead to real-world aggression. Sherry (2001) also found that the aggression effect of gaming was less than that of television watching. Interestingly, longer game playing even resulted in less aggression. In fact, the initial effects of short-term laboratory experiments on aggression from gaming are more likely

to be simple arousals, which do not necessarily increase real-life aggression. Moreover, notable benefits from moderate gaming include enjoyment, feelings of achievement, a sense of community (Sublette & Mullan, 2012), sociability, learning (for a review, see Lee & Peng, 2006), teamwork, exploration (Shen & Williams, 2011; Yee, 2006), and in-game social support (Longman, O'Connor, & Obst, 2009).

Clearly, gaming impact is a complicated research area influenced by conflicting assumptions and diverse approaches. Thus, gaming effects are hard to generalize because games are neither inherently good nor bad; rather, it depends on how individuals use this medium. The content, context, format, structural features of the game, and the purpose and the characteristics of individual gamers are important factors to consider when examining gaming impact (Charlton & Danforth, 2007; Eastin & Griffiths, 2006; Jenkins, 1999; King et al., 2011a; Shen & Williams, 2011; Williams & Skoric, 2005). Such complexity of gaming effects research suggests the important role of communicative approaches using communication theory and frameworks. Communication scholars are well-positioned to explain processes of media selection and motivations, media exposure, and their antecedents and outcomes (Tokunaga, 2015) not only at the individual level but also at the interpersonal level. To complement and extend prior gaming studies, this study also examines the effects of compulsive gaming in interpersonal relationships between gamers and their loved ones.

Effects of compulsive behavior on relationships. Prior gaming studies have mainly focused on gaming effects at the individual level, from the gamer's perspective. However, compulsive gaming is not only an individual issue but also an interpersonal issue. Compulsive gaming has been found to be negatively associated with family

cohesion (Han et al., 2012). Compared to substance addicts, compulsive gamers can hide their behaviors from their family or friends for certain periods of time because gaming alone rarely gets a person into legal consequences (e.g., driving under influence, arrest), financial trouble (e.g., bankruptcy), or health issues (e.g., overdose, death). Thus, compulsive gamers' behaviors can go unnoticed until the problem develops significantly, which may bring chronic consequences for one's interpersonal relationships. According to Young (2009), game addiction harms marriage, social life in school or the workplace, and family dynamics. These interpersonal communication problems occur when the gamers stop engaging with their offline relationships because they think their real-life relationships are less fulfilling and less significant than online equivalents (Young, 2004; 2009). Massive multiplayer online gamers, in particular, reported more interference with real-life socializing and interpersonal relationship development, and heavy players showed lower quality of relationships than non-gamers (Peters & Malesky, 2008).

Previous gaming studies have argued the negative relational impacts of compulsive gaming from the perspective of gamers. For instance, about half of gamers reported gaming harmed their relationships with their non-gaming partners (Cole, & Griffiths, 2007). However, the prior studies rarely examined the specific interpersonal tensions and coping strategies through the actual accounts of the loved ones of gamers. Two recent studies in family therapy discipline (Lianekhammy & van de Venne, 2015; Northrup & Shumway, 2014) focused only on the struggles of compulsive gamers' spouses. However, the impact of compulsive gaming on varied forms of interpersonal relationships (e.g., parents, sibling, partners, and friends) is still under-researched. Those who are in relationships with compulsive gamers also deserve to be invited as

research participants in compulsive gaming studies. Getting both perspectives is necessary to understand how compulsive gaming affects interpersonal relationships between gamers and loved ones. Considering the scarcity of gaming studies in communication research that focus on the perspectives of the loved ones of compulsive gamers, prior studies on other compulsive behavior contexts (e.g., gambling, sex) might illuminate how loved ones experience relational tensions and react to their partners' compulsive behavior.

In response to the compulsion problems of their loved ones, family or partners tend to show similar feeling and reactions. In the cybersex context, family of those with compulsive cybersex problems go through three phases: (a) ignorance or denial, followed by (b) discovery of addiction activities, and then (c) problem-solving attempts. When their loved one's recovery fails, they enter a (d) crisis stage that leads to separation or closure of the relationship (Schneider, 2003). Likewise, family or partners of compulsive gamblers also reported multifaceted negative feelings such as isolation, guilt, anxiety, humiliation, and helplessness (Kalischuk et al, 2006). Other common responses that loved ones showed include resentment, loneliness, stress, anger, distrust, and frustration (Northrup & Shumway, 2014; Schneider, 2003).

Those negative experiences, in turn, can trigger interpersonal conflicts such as poor communication, confusion of family roles, and marital problems (Holdsworth et al., 2013; Kalischuk et al, 2006). To deal with this relational crisis, some loved ones join support groups for the loved ones and share social support (Young & Timko, 2015). For example, family members of alcoholics form their own support group (i.e., Al-Anon) to share support and empower each other. In alcoholics' family support groups, adult

children of alcoholics commonly express low self-esteem, insecurity, anger, resentment, relationship issues, and communication problems through their posts (Haverfield & Theiss, 2014). The aforementioned studies were conducted in different compulsive behavior contexts (sex, gambling, and alcoholism respectively); however, their findings on the relational impact of compulsion still offer insights to the context of compulsive gaming. The current study will revisit this discussion on relational tensions and specific coping strategies of the loved ones and compulsive gamers later.

Problems of game ‘addiction’ framework. Similar to the dissonance in defining problematic internet use, there still is no clear consensus on how to conceptualize compulsive gaming. There are at least 19 unique instruments that operationalize online gaming disorder differently (see King et al., 2013; Pontes & Griffiths, 2014). When approaching compulsive gaming, some clinical psychologists (e.g., King et al, 2013; 2014) and medical doctors (e.g., Gentile et al., 2011; Sim et al., 2012) use the *pathology framework* that was originally designed to diagnose and treat substance dependence (Kim et al., 2012; Montag & Reuter, 2015) or gambling disorder (e.g., *Pathological Video Gaming Scale* developed by Gentile, 2009). However, expanding the definition of addiction to include behavioral problems is not without controversy (Karim & Chaudhri, 2012). For instance, defining behavioral addiction as a medical disorder will bring significant changes in law (e.g., criminal sentencing, disability employment) and health care system and public cost (e.g., over-diagnosis, over-institutionalization, over-medication) (Thombs & Osborn, 2013).

Scholars should be cautious about using the addiction framework for compulsive gaming research for three main reasons. First, previous gaming effect studies that adapt

an addiction framework tend to only highlight the harmful consequences of gaming while overlooking more fundamental issues. Online gaming is not a direct cause of all problems, but one of many indicators of underlying psychosocial issues (Gentile et al., 2011; Tokunaga, 2014). There is an argument that compulsive gaming is a secondary manifestation of pre-existing comorbid symptoms including affective disorders (e.g., depression), anxiety (including both generalized and social anxiety), obsessive-compulsive disorder, impulse-control disorder, and attention deficit hyperactivity disorder (see Weinstein et al., 2014). Merely quitting online games might not be the ultimate solution to such multifaceted problems that compulsive gamers have. The relationships among the aforementioned psychosocial traits and the outcomes of compulsive internet use are hard to disentangle clearly. There is a feedback loop from antecedents of compulsive internet use to the results of compulsive internet use.

Second, framing compulsive gaming as a bona fide addiction may trivialize the concept of addiction (King, Delfabbro, & Griffiths, 2011a). Third, the pathology framework downplays the agency of gamers to change their behavior. Not all gamers necessarily need therapy or medication to improve their conditions. Some gamers are found to be able to quit gaming when they enter a new life phase (Domahidi & Quandt, 2014). Most empirical studies on compulsive gaming tend to approach it from a pathological framework rather than taking a communicative approach. For instance, most studies on gaming “disorder” treatment used an adapted version of Young Internet Addiction Test/Scale (YIAT/S), (Young, 1998) as a diagnostic questionnaire, and about half of them were pharmacological interventions prescribing bupropion (Kim et al., 2012) or methylphenidate (Han et al., 2009) to adolescents with gaming problems. This implies

that YIAS, the most popular pathological assessment, provides a foundation for medication-driven treatment for gaming “disorder.” In this context, communication scholarship can suggest a unique perspective and contribute to the compulsive gaming research field by approaching the compulsive gaming phenomenon using instruments and interventions that are grounded in human communication theory and mixed research methods.

Fourth, previous game addiction frameworks commonly show two methodological problems: operationalization and sampling bias. To operationalize game “addiction,” diverse instruments have been developed based on the addiction literature: ‘Addiction-Engagement Questionnaire’ (Charlton & Danforth, 2007, 24 items), ‘Game Addiction Scale’ (Lemmens et al., 2009, 7 or 21 items), ‘Pathological Video Game Use’ (Gentile, 2009, 11 items based on pathological gambling screening criteria on DSM-4), and ‘Problematic Video Game Playing Test’ (King, Delfabbro, & Griffiths, 2011b, 20 items). These instruments assess game addiction using multiple criteria: salience, tolerance, mood modification, relapse, withdrawal, problem, conflict (Lemmens et al., 2009), euphoria (Charlton & Danforth, 2007) and escapism, isolation, loss of interest in other activities, deception/concealment (Young, 2009). Some research studies using the aforementioned game “addiction” instrument (e.g., adapted version of YIAT) can be criticized due to their dichotomous classification (i.e., game addict vs. non-addict) drawing on inconsistent cut-off points to simply compare two arbitrary groups. Considering the existence of diverse measures, definitional imprecision, and a lack of clarity in the operationalization of compulsive gaming (and PIU), compulsive gaming as well as PIU should be treated as a continuous variable.

Moreover, previous game addiction studies have shown the limitations of sampling mainly youth, especially students (e.g., Lemmens et al., 2011). Reliance on cross-sectional self-report surveys of limited numbers of students presents issues with generalizability. Contrary to the stereotypical image of a typical online gamer being a socially inept and sedentary obese boy, online gamers are found to be mainly middle-class, college educated white adults (Griffiths, Davies, & Chappell, 2003; Williams, Yee, & Caplan, 2008). Thus, the sampling frame in prior game addiction studies that targeted only high school or college students (e.g., Morahan-Martin, & Schumacher, 2000) cannot be generalizable to all ages. Therefore, online gaming studies should consider a broader range of samples. In addition, inconsistent research findings in gaming effects have been derived from quick lab experiments that measured only short-term impact. To increase external validity, it is crucial to examine how actual gamers perceive and describe the gaming effects that they have experienced in real life settings.

Considering the limitations of the addiction framework, a more holistic and communicative framework is needed to examine complex psychosocial mechanisms of compulsive gaming such as relational aspects of compulsive gamers and their loved ones. By highlighting the role of interpersonal communication in the acknowledgement or the resolution of compulsive gaming problems, the communicative framework can contribute to both gaming effects research and the interpersonal communication discipline.

Cognitive-behavioral model. When approaching compulsive gaming with the aforementioned pathological frameworks, its solutions to compulsive gaming tend to focus on individual counseling or medication in which the role of human communication is overlooked. The cognitive-behavioral model of PIU (Caplan, 2002, 2003; Davis, 2001)

is an alternative approach to the pathological view, because it examines the role of problematic cognitions (e.g., preoccupation, online social interaction preference) and maladaptive behaviors (e.g., compulsion, going online for mood regulation) in developing and maintaining PIU (Caplan, 2003; Davis, 2001). Understanding such psychosocial aspects is more important to examine compulsive gamers and their loved ones from communicative perspectives. For instance, a preference for online social interaction (POSI) (Caplan, 2002; 2003; 2005) provides valuable insights to the current study in investigating the role of compulsive gamer's online communication preference in their *offline* relational conflict and *online* support group participation or received online social support. Individuals who prefer CMC to face-to-face communication display multidimensional communication motives and patterns: deriving a sense of community from online relationships (Caplan et al, 2009), relying on online social capital due to insufficient offline social capital (Collins & Freeman, 2013), deriving social support from online gaming (Longman et al., 2009) or online support group (Cummings, Sproull, & Kiesler, 2002), meeting social acceptance needs from online communication (King & Delfabbro, 2014a; 2014b; Lemmens et al., 2011), preferring disinhibition based on reduced nonverbal cues and enhanced message controllability online (Casale, Fiovaranti, & Caplan, 2015), and making up for their poor offline social skills (Caplan, 2005; Liu & Peng, 2009). Such online communication preference provides an important clue in bridging compulsive online gaming and the online social support process.

Relational problems emerge when the balance between online and offline communication is broken and online communication becomes the main source of social interaction. According to PIU/internet addiction counselors and clinicians (Acier & Kern,

2011; Chrismore et al., 2011), many individuals with PIU hide their stress and symptoms because they are in denial or they are rationalizing their internet use. Therefore, information from family members, spouses, or other loved ones of problematic internet users is crucial in addition to the self-report of the individual with PIU (Acier & Kern, 2011) as they are also able to provide a more accurate picture of the individual user's PIU. Thus, the current study asks the loved ones of gamers to rate their perception of partner's compulsive gaming as well as their relational conflict specific to partner's gaming problem.

In addition to the POSI, there are a few more central dimensions of the cognitive-behavioral model of PIU: using the internet for mood regulation, deficient self-regulation that includes both cognitive preoccupation (e.g., obsessive thinking about internet use) and compulsive internet use, and negative consequences (Caplan, 2002; 2010). These components are also helpful in examining compulsive online gaming to investigate which dimension plays more critical role in predicting relational conflict with loved ones or online social support. Given that the cognitive-behavioral approach of PIU examines patterns of individual thought and action, examining how it is associated with interpersonal communication (i.e., relational conflict with non-gaming loved ones) can give insights for extending the cognitive-behavioral model and the current PIU instrument.

This section reviewed the impact of compulsive gaming on both individual gamers and their loved ones. To choose an appropriate framework and conceptualization of compulsive gaming, the pathological approach and cognitive-behavioral approach were reviewed and compared. The current study will focus on the cognitive-behavioral

model of PIU within the specific context of online gaming. Even though clinical diagnosis or treatment under pathology framework is beyond the scope of the current study, common findings of several studies on internet addiction treatment (Acier & Kern, 2011; Chrismore et al., 2011; King & Delfabbro, 2014a) that emphasize the importance of social interaction (e.g., therapy group) suggest that compulsive gamers might also benefit from support groups. Thus, the following section will review online support groups and the role they may play for compulsive gamers and their loved ones.

Supportive Internet Use: Online Support Group

As a multi-dimensional concept, social support refers to support-giver's coordinated actions to comfort, assist, and reassure the support-seeker as a function of a social relationship (High & Solomon, 2011). There are a few online groups for both gamers and their loved ones, respectively, where they share social support. Unlike 12-step recovery fellowships (e.g., Alcoholics Anonymous, Gamblers Anonymous, Narcotics Anonymous) that have offline support groups nationally, face-to-face gaming recovery support groups (not to mention the loved ones' group) are very rare. Therefore, gamers and loved ones participate in online forums and online meetings to share social support.

Benefits of online support groups. When communicating social support in face-to-face (hereafter FtF) settings, individuals often experience social pressure in terms of the norms of reciprocity, self-disclosure, and participation because of the relatively small group size, physical presence, and conformist atmosphere in FtF support groups (Albrecht & Adelman, 1987; Galegher, Sproull, and Kiesler, 1998). Because of these costs of offline support groups, people who have sensitive or stigmatized problems often

tend to choose computer-mediated support groups as alternatives (Wright & Muhtaseb, 2011).

Online support group users exchange social support with other anonymous users without geographic barriers or temporal limitations (Walther & Parks, 2002). Such geotemporally independent structures and increased access allow community members to share a low threshold of support in a more cost-effective way. The reduced social cues in online support groups offer additional benefits such as greater confidentiality (Galagher et al. 1998), reduced social isolation thanks to similar group members (Wright & Muhtaseb, 2011), and easier interaction management via an asynchronous CMC channel (Walther & Boyd, 2002). Such CMC characteristics afford users more time to carefully craft supportive messages in more strategic ways (Walther & Boyd, 2002), which may help support receivers idealize the support giver as suggested by the Hyperpersonal perspective (Walther & Parks, 2002).

As Social Information Processing Theory (Walther & Parks, 2002) posits, CMC users can build and maintain equally strong interpersonal relationships as face-to-face relationships. For example, Braithwaite, Waldron, and Finn (1999) found that online support group users compensate for reduced emotional cues by using emoticons (e.g., smiley ☺) and pseudo-nonverbal cues (e.g., typing ‘hugs,’ ‘patting,’ ‘kisses’) in their support messages. Other structural features of CMC (e.g., taglines that appear at the end of the message such as axioms or quotations) also play support roles (Braithwaite et al., 1999). In addition, a loosely knit heterogeneous support network offers many benefits including diverse points of view, a more extended support network, reduced risk of disclosure, more objective feedback, and fewer social obligations to others (Wright &

Bell, 2003; Wright & Muhtaseb, 2011; Wright, Rains & Banas, 2010). Because of these benefits, Wright and Muhtaseb (2011) argued that computer-mediated social support groups may augment or even replace traditional face-to-face social support.

Scholars have investigated the interactions within support groups for specific populations with health issues such as cancer patients (Bambina, 2007; Robinson & Turner, 2003), HIV/AIDS (Peterson, 2009), or physical disabilities (Braithwaite & Eckstein, 2003; Braithwaite et al, 1999; Cummings, Sproull, & Kiesler, 2002). As a result of participating in such online support groups, users experience positive effects such as increased self-efficacy in health management, enhanced quality of life, and decreased depression (for a review, see Rains & Young, 2009). In a similar vein, online support forums have also been found to be useful for people with impulsive behavior problems. For example, compulsive gamblers reported advantages in online support group uses: convenience, availability, anonymity, sharing insights through posting and reading, resisting urges (Wood & Wood, 2009), accountability to self and others, and helping vulnerable members (Mudry & Strong, 2012).

Likewise, online support groups might be an effective way for compulsive gamers to share social support. Even though gamer's online support groups are actively running, there is no empirical study on their support group use. There are only two empirical studies on online support groups for the loved ones (Lianekhammy & van de Venne, 2015; Northrup, & Shumway, 2014) in the family therapy and social work discipline, not communication research. Thus, examining both compulsive gamers' and loved ones' support group use from communicative perspective is the goal of the current study. To

this end, it is important to understand antecedent conditions of successful social support exchange within online communities.

Predictors of social support exchange in online communities. Communication patterns in online groups are complex, as they are influenced by various factors. In general, support givers provide social support because of their organizational attachment, self-expression, or generalized reciprocity norms influenced by the technological and social structures of online communities (Wellman & Gulia, 1999). An individual's demographic and psycho-social characteristics (e.g., gender, cognitive traits) are important predictors of social support. For example, women tend to post more messages than men (Blank et al., 2010; Ginossar, 2008) and women are more likely to share emotional support and cope with their problems more expressively while men tend to use support groups for informational support (Blank et al, 2010; Burleson, 2002; Klemm et al., 2003; Owen et al, 2004; Sullivan, 2003).

Cognitive factors such as the motives and perceived advantages of online social support have significant effects on online social support (Leimeister et al., 2008). In addition, one's belief in their ability to gain social support (i.e., self-efficacy) or one's expectations of obtaining social support from the internet predict individual's online support reliance and time spent using the internet for online social support (Lin & Bhattacharjee, 2009).

A lack of *offline* support network also predicts online social support. Having insufficient social support in offline relationships pushes individuals to seek online social support more actively, and such increased online support group participation can lead to better coping and emotional well-being (Cummings et al, 2002). An individual's

dependence on online social support was also found to increase one's online social network size and perceived social support subsequently (Eastin & LaRose, 2005). The size of the individual's online support network also positively correlates with the number of online support messages that the person receives (Wright, 2000a). In an addiction recovery context, support group participation can help its members recover from addiction by building a new network such as Alcoholics Anonymous fellowship (Kelly, Magill, & Stout, 2009; Straussner & Byrne, 2009). Having such a support network is an important predictor of abstinence (Groh, Jason, & Keys, 2008; Kaskutas, Bond, & Humphreys, 2002; Kelly et al., 2012).

In addition, characteristics of communication channels have an impact on social support exchange. Compared to individuals who only use asynchronous online message boards, individuals who use both synchronous (e.g., instant chatting) and asynchronous channels reported higher levels of social support (Rains & Young, 2009). Not only landline internet context but mobile phones can be utilized as a useful synchronous support source for real-time social connection and instant help among Alcoholics Anonymous recovery support group members (Campbell & Kelly, 2008).

Challenges in support communication. Along with their benefits, online support groups also have limitations. First, due to the virtuality of online support groups, the types³ of available social support are limited in CMC settings. Expectedly, informational support and emotional support are more frequently found online, whereas tangible support is rarely shared in online settings (Braithwaite et al, 1999; Eichhorn, 2008; Hwang et al., 2011; Rains et al., 2015). Second, due to the anonymity afforded by CMC, some online support seekers may experience problems such as off-topic replies or

spamming, domination by some members, and deceptive practices including misinformation, misrepresentation, or antisocial behaviors (Wright & Muhtaseb, 2011). Third, relatively short-term membership is another weakness of many online support groups (Wright & Muhtaseb, 2011). Online support group members may stop visiting the communities when their initial concerns are addressed, which may lead to less frequent and slower feedback in the group. Moreover, lack of control of the quality of information is another possible drawback of online support forums.

Tensions in online social support. Contradictions and dilemmas are universal and omnipresent in communicative actions, and the context of social support is not an exception (Albrecht & Adelman, 1987). When there is a bright side of optimally matched social support⁴, there is also a dark side of support exchange such as control or “tough love” (Lehman & Hemphill, 1990). In general, prior scholarship has commonly assumed that social support is functional and comforting (Rains & Young, 2009). However, such a taken-for-granted assumption needs to be reconsidered.

Goldsmith and Fitch (1997) found three pairs of dilemmas in social support exchange: (a) caring vs. butting in; (b) supportive advice vs. honest advice; and (c) showing respect and gratitude vs. making one’s own decisions autonomously. Even in a support group, conflicts are found over the right to criticize, the role of venting, and the value of disagreement (Aakhus & Rumsey, 2010). When a support giver induces compliance, a support receiver may find the support uncomfortable (Goldsmith, McDermott, Alexander, 2000; Sass & Mattson, 1999). Some supporters often provide unhelpful support such as minimizing, caring without emotion, being overprotective or manipulative, or giving unwanted support or patronizing advice (Goldsmith, 2004).

Overly intrusive support also increases the stress level of support receivers (Goldsmith & Fitch, 1997). In a similar manner, not all messages provided by support givers turn out to be supportive or empowering to support receivers, even in a tight online community where a lot of support is exchanged among members (Gibbs, Kim, & Ki, 2016). Such complex support dilemmas lead support group users to experience dialectical tensions between caring and controlling, which will be revisited later.

In supportive communication, there is another notable tension between expression and privacy. From a support seeker's perspective, conflicting motivations to reveal and withhold information create dilemmas over seeking support (Goldsmith & Parks, 1990). Support seekers reported several potential risks in seeking support such as violation of confidentiality, reduced competence, perceived inappropriateness or ineffectiveness of sharing their problems, leaving negative impression, and giving burden to support giver (Goldsmith & Parks, 1990). Such risks influence support seeker's disclosure or expression level in supportive communication, which resonates with lurking behavior in online support groups. Han and colleagues (2014) found that lurkers still benefit from online support groups even when they have not posted any messages to the forum. Interestingly, lurkers were found to report higher functional well-being than active posters. The authors (Han et al., 2014) explain this unexpected finding by assuming that lurkers might focus on reading others' support messages without having the stress of posting their own messages.

Based on this discussion, it is plausible to predict that both compulsive gamers and their loved ones also might face a set of support dilemmas in their support seeking,

giving, and taking processes in online support groups. These tensions will be discussed more in detail in the next chapter using a relational dialectics framework.

Putting the Pieces Together: Compulsive Gamers, Loved Ones, and Online Social Support

Thus far, compulsive gaming and online social support studies are reviewed separately. However, those two phenomena can be connected in a particular setting where compulsive gamers and their loved ones share support and control offline and online. Some compulsive gamers voluntarily join online support groups to solicit support to deal with their gaming problems. Utilizing another online space to quit one's online compulsion is an intriguing irony. This seemingly paradoxical relationship in the mechanism of online social support for compulsive online gamers motivated the researcher to examine how these contradictory forces are seamlessly integrated within a few specific online support groups.

Moreover, how the loved ones of compulsive gamers share online support in their own support group will be examined as well to see how their online support group participation is related to their relational tensions and online social support. As previously mentioned, family therapy scholars have already produced two qualitative research studies on the online forums for "game widows." Northrup and Shumway (2014) used a phenomenology framework (N=10), whereas Lianekhammy and van de Venne (2015) used thematic analysis of 50 users' posts. This infancy of loved one research also calls for an in-depth research study using interpersonal communication theory and a mixed methods design to examine diverse types of loved ones and compulsive gamers more thoroughly in a more systematic way. To link compulsive gaming and online support

dynamics of two different groups (gamers vs. loved ones), a single theoretical framework cannot fully disentangle such an intertwined paradox. Thus, in the following chapter, this study develops a multifaceted theoretical framework to draw a larger picture of the complex associations among compulsive gaming, partner-control, social support, and interpersonal relationships at individual, relational, and group levels. The conceptual model is presented in Figure 1.

-----INSERT FIGURE 1 ABOUT HERE-----

III. THEORETICAL FRAMEWORK AND RESEARCH MODEL

As discussed in the previous chapter, compulsive gaming is not only a problem at the intrapersonal level but also at the interpersonal level. The current chapter aims to introduce and discuss a tensional framework and two theories that guide this study. First, Relational Dialectics Theory (hereafter RDT) and Inconsistent Nurturing as Control Theory (hereafter INC) help illuminate research questions and hypotheses on the conflicts between compulsive gamers and their loved ones at the individual and the interpersonal level. Second, the Stress-Buffering hypothesis of social support is used to explain the group dynamics found within online support groups for both compulsive gamers and their loved ones.

Relational Tensions: RDT vs. INC

When there are two opposing views or goals, tensions arise. In interpersonal relationships, contradictions and tensions are unavoidable (Baxter & Montgomery, 1996). Tensions in relational life are not simple anomalies that should be removed; rather, tensions need to be understood and embraced as ubiquitous phenomena because tensions reconstruct relationships when the tensions are well-managed through communication (Gibbs, 2009).

Relational Dialectics Theory: Relational Dialectics Theory (Baxter & Montgomery, 1996; Baxter, 2004) examines how and what tensions are communicatively situated, interlinked, and embedded in a specific social context. Three key concepts and assumptions of RDT are: (a) *contradiction*: there is a dynamic interplay between unified yet competing voices, (b) *totality*: the knot of contradictions co-exist in a relational

system in a web-like manner, and (c) *praxis*: contradictions are negotiated in communicative practices (Baxter & Montgomery, 1996; Baxter et al., 2002). In other words, contradictions are natural in relationships, and dialectic tensions are interrelated, and the dynamically changing tensions and relationships are constructed and negotiated through communication practices. Relational dialectics come in various forms in terms of *integration – separation; expression – non expression; and stability – change* (Baxter, 1990) and their manifestations include dialectic tensions between *autonomy and connection; openness and closedness; and novelty (uncertainty) and predictability (certainty)*. Internal dimensions of relational tensions emerge when two relationship partners have conflicting desires within their relationship to achieve both *independence and interdependence*; both *open-sharing and privacy*; or both *change and stability* simultaneously (Baxter, 1988; 1990). Likewise, *external* dialectics (between a couple and their social network) also occur when the dyad experiences the simultaneous need for both *seclusion and inclusion* with other people; both *revelation and concealment* of their private lives to others; or both *uniqueness and conventionality* as a couple to others (Baxter, 1993). Another recent discovery of relational dialectics is *presence-yet-absence* in relationships between patients with dementia and their spouses, in which spouses experience contradictions between their husbands' *physical* presence and *mental* absence (Baxter et al., 2002). Such complex relational dialectics and tensions are distinguished from simple dilemmas or paradoxes that have only mutually exclusive polarized choices because relationships are constructed and negotiated through complex multi-vocal meaning-making processes (Baxter, 2004). Understanding the multivocality and keeping balance among dialectical tensions is crucial to build and maintain healthy interpersonal

relationships (Baxter & Montgomery, 1996). A tensional framework can be a useful approach to explain the complicated interplay among the interrelated contradictions that emerge within the relationships of compulsive gamers and their loved ones.

As reviewed previously, compulsive online gaming harms gamer's romantic relationships (Young, 2009) and gamers' partners report both negative emotional outcomes and serious relational conflicts (Lianekhammy & van de Venne, 2015; Northrup, & Shumway, 2014). When there are prolonged and recurring conflicts due to a specific irresolvable problem, such serial arguments damage both physical and relational well-being (Johnson & Roloff, 1998; Malis & Roloff, 2006; Roloff & Johnson, 2002).

To resolve such conflicts, individuals develop diverse communicative strategies to make sense and deal with the relational tensions in more constructive ways. The functional tension management strategies include *selection* (simply choosing one choice and ignoring the other), *cyclic alternation* (changing choices over time), *segmentation* (changing choices depending on the contexts), *integration* (recognizing and addressing all conflicting motives through ambiguousness or rituals), *reaffirmation* (accepting the reality of the tensions – agreeing to disagree), and *recalibrating* (temporarily reframing the tensions) (Baxter, 1988; Baxter & Montgomery, 1996). In addition, *separation*, another tension management strategy, has different subcategories: *temporal separation* (sending messages that address both sides of the tensions but at different time), *network separation* (sending messages that attend to both sides of the tensions but with different listeners), and *behavioral separation* (sending messages that attend to both sides of the tensions but with different verbal and nonverbal messages simultaneously) (Goldsmith & Parks, 1990). On the other hand, *denial*, *disorientation*, and *venting* were discussed as

less functional tension management strategies (Baxter & Montgomery, 1996; Kramer, 2004).

In the compulsive gaming context, limited research informs as to how compulsive gamers and the loved ones experience and manage relational tensions differently. Thus, the types of relational conflicts will be examined in this study with the following overarching research questions.

RQ1: What relational tensions emerge in the interpersonal relationships of compulsive gamers and their loved ones?

RQ2: How are these tensions managed communicatively?

Individuals respond to their conflicting goals through various strategies. Gamers' and loved ones' relational tension management strategies are still unknown, thus interpersonal communication theory that is developed in a specific setting – addicts' relationships context - might supply a clue to guide the current study. Thus, Inconsistent Nurturing as Control Theory (hereafter INC) is examined to understand the complex relational tension between addict and caregiver.

Inconsistent Nurturing as Control Theory. In the family dynamics of substance addicts, a unique relational tension– nurture vs. control –exists. According to Inconsistent Nurturing as Control theory (INC), two competing goals (i.e., nurturing an addict vs. controlling his/her addictive behavior) unintentionally encourage the addictive behavior through incoherent efforts to discourage the addictive behavior (Le Poire, 1995). When the loved one uses combinations of different communicative strategies (e.g., accommodation, avoidance) because of one's conflicting desires to eliminate the addiction yet maintain the relationship with the addict simultaneously, such mixed

patterns of inconsistent reaction turn out to enable and strengthen the addictive behavior of one's partner (Duggan, Le Poire, & Addis, 2006). According to INC, the loved ones tend to start punishing their addict partners after labeling the behavior undesirable. Such inconsistency in loved one's behavior (between before and after labeling the addiction/addict) confuses and tortures the addict, exacerbating the addictive behavior and relational problems (Le Poire, 1995). Thus, consistent reinforcement of alternative behavior or consistent punishment of problematic behavior is important for both addict and their caregiver to curtail the addiction and improve their relationship (Le Poire, Hallett, & Erlandson, 2000).

In line with this discussion, the ratio of positive and negative intervention behaviors of the non-smoking partners was also found to be an important predictor of smoker's abstinence (Cohen & Lichtenstein, 1990). For another example, more positive, interactive, and direct health-related social control by spouses leads to healthier behavioral changes in their target partners (Lewis et al., 2004; Lewis & Butterfield, 2007), whereas the use of negative social control strategies (e.g., nagging, putting behavioral restrictions) backfires by increasing the target's negative affective reactions (e.g., irritation, distress, guilt) and health-compromising behavior (Tucker & Anders, 2001). This resonates with the implications of INC theory; misuse of partner-control strategy is counterproductive.

Taken together, previous research suggests that consistent and positive social control by the loved ones might influence partner's abstinence from compulsive gaming, which may influence the well-being of both compulsive gamers and the loved ones. Namely, a person is influenced by the behavior of his/her partner (i.e., partner effect) as

well as one's own behavior within the relationship (i.e., actor effect) interdependently (Butterfield & Lewis, 2002; Kenny & Cook, 1999). This implies the possible impact of social control behavior on both the compulsive gamer's and the loved one's relational conflict.

It is still unknown how the relationship between compulsive gamers and their loved ones will be affected by the loved one's regulation behavior. In response to the controlling attempts of their loved ones, compulsive gamers might feel pressured or cared for depending on the consistency and the type of control strategies employed by their partners. Presumably, inconsistent controlling behavior may negatively influence relational quality and vice versa. Thus, the following hypotheses will test the relationships among controlling behavior of the loved ones, compulsive gaming of gamers, and relational conflict. It is natural to assume positive relationships between the level of gamer's compulsive gaming and the level of partner's controlling behavior. Moreover, the interpersonal conflicts within dyadic relationships may impel stressed individuals to join and use online support groups that are designed for like-minded people. Given the current study examines both gamers and their loved ones, all hypotheses are split into two versions (H#a & H#b) to test each group, respectively.

Notably, RDT assumes opposing goals and poles are natural and often constructively managed through various communicative responses (e.g., selection, segmentation, vacillation, separation), whereas INC theory recommends caregivers of addicts to choose consistent, direct, and interactive control strategies. Simply put, RDT allows tensions and a variety of options for tension management tactics, whereas INC theory seems to problematize inconsistency or uncertainty in control strategies.

Considering the contradictory argument that RDT and INC theory suggest, it is difficult to precisely predict whether the link between consistent control and other study variables are positive or negative. It is seemingly logical to predict compulsive gaming increasing relational tensions (H1) and attracting more consistent control made by the loved ones of gamers (H2). Drawing upon INC theory, it is also possible to assume consistency between negative and positive control tactics that the loved ones of gamers use might be constructive and productive, which may lead to lower relational conflict. Thus hypothesis 3 poses negative associations between partner's control consistency and relational conflict that both gamers (H3a) and loved ones (H3b) experience.

H1a: Gamer's compulsive gaming is positively related to *gamer's* relational conflict.

H1b: Gamer's compulsive gaming (*as observed by loved ones of gamers*) is positively related to *the loved one's* relational conflict.

H2a: Gamer's compulsive gaming is positively related to the *loved one's* control consistency (*as rated by the gamer*).

H2b: Gamer's compulsive gaming (*observed*) is positively related to the *loved one's* control consistency.

H3a: Control consistency (*by loved one*) is negatively related to *gamer's* relational conflict.

H3b: Loved one's consistent control is negatively related to *the loved one's* relational conflict.

-----INSERT FIGURE 2a & 2b ABOUT HERE-----

Then how do gamers and loved ones cope with their relational conflict? As Wright and colleagues (Wright & Miller, 2010; Wright et al., 2010; Wright & Rains, 2013) have consistently argued, stressed individuals turn to online social support when their close relationships have relational problems or limited information about the stressful situation. Thus, the current study assumes gamers and loved ones who suffer from relational conflict offline might seek social support online.

H4a: Relational conflict is positively related to *gamer's* online support group participation.

H4b: Relational conflict is positively related to the *loved one's* online support group participation.

As seen in the research model (see Figure 2), relational conflict and online support group participation are two main bridges that connect two different levels: offline dyads (gamer and loved one) and online support groups. The current study assumes relational conflicts are the common driver for both gamers and loved ones to seek online social support (H4), however we cannot rule out some gamers and loved ones who do not necessarily experience relational conflict might also use the support group with other motivations such as individual recovery maintenance. To investigate the possible associations among partner's control consistency– relational conflict – support group participation, indirect effects were tested with a mediation hypothesis MH1. A follow up mediation model was also tested to examine whether the mediation effects of relational conflict would change when the consistent control strategy was broken down to two dimensions: negative and positive. The positive subscale will be included in the different mediation model (MH3) later.

MH1a: Relational conflict mediates the relationship between control consistency (*by loved ones*) and *gamer's* online support group participation.

MH1b: Relational conflict mediates the relationship between control consistency (*by loved ones*) and *the loved one's* online support group participation.

MH2: Relational conflict mediates the relationship between negative control (*by loved one*) and *gamer's* online support group participation.

Online Social Support Group Tensions

As H4 posed, distressed gamers and loved ones who have relational conflicts might look for another source of social support because their relationship cannot meet their support needs. Examining online support group processes and support mechanisms is another goal of the current study.

Stress-buffering hypothesis. Social support helps individuals cope with various types of personal, social, physical, or mental stressors (Cohen, Underwood, & Gottlieb, 2000; High, & Solomon, 2011, Vaux, 1988; Wethington & Kessler, 1986) and reduce uncertainty about their situation, the self, the other, and the relationship (Albrecht & Adelman, 1987). Social support mechanisms can be explained with two models. First, the stress buffering hypothesis posits that perceived availability of social support protects (buffers) individuals from the negative effects of stress (Cobb, 1976; Cohen & Wills, 1985). Supporting this framework, scholars have found social support helps people mitigate their depression and stress (Beaudoin & Tao, 2007; Goldsmith, 2004; Wright, 1999).

Second, the main effects model (also known as the direct effects model) assumes that social support improves one's physical and psychosocial well-being. For example,

social support enhances self-esteem (Goodwin, Cost, & Adonu, 2004), mental and physical health (Davison et al., 2000), and the quality of life of support recipients (see Rains & Young, 2009). The key difference between these two models is that the buffering model focuses on the impact of social support in a specific situation that is stressful, whereas the main effect model focuses on the general impact of social support regardless of stressful events.

The current study takes the perspective of the buffering model because this study examines compulsive gamers and their loved ones' relational tensions and how they derive social support to reduce their stress and problems. Thus, the buffering model hints at a potential mediation role of social support in the current study. Partner-control that occurs between gamer and loved ones might create conflict (H3), which creates stress to both parties, and then they utilize online social support that they received from their online support group to shield themselves from the stressor: partner-control. And the amount of social support, in turn, motivates them to keep coming back to the support group and participating more. Simply put, it is possible that online social support mediates between the associations between partner-control and support group participation. Thus, another mediation hypothesis is posed to test the indirect effects of partner-control.

MH3: Online social support mediates the relationship between positive control (by loved ones) and online support group participation.

Support group dynamics. There are myriad studies on the positive impact of active support group participation on a varied range of social support outcomes such as increased perceived support, reduced depression, increased quality of life, and increased

self-efficacy in health management (see Rains & Young, 2009). Frequent participation in online support groups is associated with more benefits from the group (Cummings et al., 2002). The intensity of participation (i.e., posting frequency) predicts the type and the amount of social support and its outcomes (Bambina, 2007; Leimeister et al., 2008). The number of messages that a user posted to the support group forum is also positively related to the perceived social support that the poster received from the group (Hwang et al., 2011). Fourth, individuals who spend more time in the support group report lower life stress and higher satisfaction with the support (Wright, 1999; 2000a; 2000b). All in all, it is evident to posit a hypothesis about positive association between the participation level and the amount of online social support.

H5a: *Gamer's* online support group participation is positively related to the amount of social support they received from the group.

H5b: *Loved one's* online support group participation is positively related to the amount of social support they received from the group.

Social support exchange is also predicted by group characteristics such as group cohesion and group norm conformity (Lieberman et al., 2004). Lieberman and colleagues (2005) found homogeneous support group members were more attracted to and committed to their groups than heterogeneous group members, which led to greater mental and physical well-being represented by lower levels of depression and improved disease symptoms. Thus, group dynamics such as group identification are another important factor in explaining supportive communication in online support groups. Group identification has three sources: *cognitive* process (e.g., self-categorization), *affective* ties (e.g., attachment, interpersonal attraction), and *behavioral interdependence* (e.g.,

cooperation) (Henry, Arrow, & Carini, 1999). Through group identification processes, individuals who *define* themselves in terms of certain group membership *feel* themselves psychologically intertwined with the fate of their group (Mael & Ashforth, 1992) and *conform* to the group norms (Hogg & Reid, 2006).

When individuals perceive that they and anonymous others are in similar situations, pro-social tendencies (e.g., favoritism, participation, conformity) and intergroup biases (e.g., stereotyping, out-group discrimination, polarization) are likely to be triggered (Postmes, Spears, Lee, & Novak, 2005; Ren et al, 2012). Similar to the implication of Social Identity model of Deindividuation Effects (Postmes, Spears, & Lea, 1998), it is possible to posit salient group identification with anonymous online support group might also predict social support exchange. Drawing on this discussion, it is predictable that the extent to which individuals identify themselves with the online support group will be associated with online support group participation and enacted online social support.

H6a: *Gamer's* support group identification is positively related to their online support group participation.

H6b: *Loved one's* support group identification is positively related to their online support group participation.

H7a: *Gamer's* support group identification is positively related to the amount of social support they received from the group.

H7b: *Loved one's* support group identification is positively related to the amount of social support received from the group.

Based on the literature review and theoretical framework, a research model of this study is created as Figure 2. All hypotheses and key variables are integrated into the models.

Overall, the current research model will help build a new point of view to unravel the complex associations among compulsive gaming, interpersonal tensions, online support group dynamics, and online social support.

IV. METHODS

Using only one method or using multi method design (where data collection methods are simply combined, without integration) is not enough to understand and fully explain complex human communication behavior (Myers & Powers, 2017). The present study used qualitative research methods to navigate the maze posed by some quantitative findings. Drawing on an online survey and in-depth interviews with users of particular online support communities that are designed for compulsive gamers and their loved ones, relationships among compulsive gaming, partner-controlling tactics, relational conflict, and online social support were examined.

Research Site

First, quantitative data were collected from three research sites to test the hypotheses. When choosing the research sites, I focused on online communities that are (a) dedicated to discussing issues related to compulsive gaming recovery, (b) actively running, and (c) open to the public. As a result, three online research sites were located but pseudonyms are used in the analysis to maintain confidentiality of the research sites. The sites are based in the United States and the main language spoken in the communities is English.

Users of these research sites were identifiable only through alias screen names, but their screen names were not used in analysis to protect research sites and participants. Anyone can join and contribute to these communities by posting their personal experiences or information. They are autonomously financed and voluntarily operated communities that do not accept outside funding. There is no hierarchical structure or traditional forms of organizational control in these online communities. Instead, they have a set of informal norms, slogans, and guidelines that emerged from the community.

Site 1: *Gamer Anonymous* (pseudonym). The first research site, *Gamer Anonymous* (hereafter GA), is a non-profit online self-help group that encourages peer-to-peer support exchange among recovering compulsive gamers as well as their loved ones (friends, family, or significant others). This community has had more than five million visits since 2002. GA is composed of more than 20 sub-message boards, most of which are open to the public. In particular, GA has separate online forums for recovering gamers and other forums for the loved ones. Loved ones of compulsive gamers use three specific ‘G-Anon’ message boards (forum for family/friends, parents, and spouse) as communicative outlets. Anyone can read posts made by other GA/G-Anon users. Membership registration and login is required only when the member wants to use a member-only forum, a private messaging function, or a chat-room for daily/weekly online meetings. GA/G-Anon does not report the actual number of members in the community. As of November 2015, GA had more than 10,000 topic threads and more than 65,000 posts.

Site 2: *Quit Gaming SubReddit* (pseudonym). The second research site is a *Quit Gaming* (hereafter QG) Reddit message board. Reddit is a social news site where anonymous users can post content, comment on the content, and ‘upvote’ or ‘downvote’ content, thereby assigning scores to posts and comments. Subdomains arranged by specific topics are called subreddits. In this study, a particular subreddit is chosen because of its popularity and relevance. The QG subreddit is for self-identified compulsive gamers who struggle with video game addiction. QG subreddit users are encouraged to discuss responsible gaming as well as the benefits of quitting the game. QG is an active message board community with more than 10,000 subscribed users and

two active moderators; however, they do not display the number of threads and posts.

The only available information about the site activity as of November 2016 is 600 unique daily visitors and 2,600 daily page view traffic on average.

Site 3: *Game Addicts Anonymous* (pseudonym). The last research site is *Game Addicts Anonymous* (GAA). GAA has a clear guideline: the twelve traditions recovery program, which is adapted from the twelve steps of Alcoholics Anonymous. Similar to QG subreddit, GAA has online discussion forums only for compulsive gamers. GAA emphasizes the role of the twelve steps and twelve traditions to protect the community from power struggles. The program was designed to help its members abstain from compulsive gaming and recover from the harmful effects of gaming. GAA is newer (built in 2014) than the other two research sites and offers various types of support, including several face-to-face meetings across different states and countries, a telephone helpline, and a sponsorship program among community members. As of November 2016, GAA had more than 400 members and 4,500 posts.

Quantitative Method: Online Survey

Procedures

The research sites were public online message board communities; therefore, it was difficult to estimate how many members actually use the groups as well as to predict the sample characteristics or estimate the response rate. According to the guidelines of the research sites, survey or interview participation solicitation is not violating their community norms. Thus, a link to the online survey was posted on the public message boards of each research site from June to October 2016. In order to recruit both gamers and their loved ones, a survey link for gamers was posted on all three research sites, and

another survey link for the loved ones was posted only on the GA because only GA has three dedicated online forums for the loved ones (message boards for gamer's parents, spouses, and family or friends, respectively). The online survey was hosted by *Qualtrics*, an online survey software that constructs and administers online surveys and stores the responses in a password-protected database accessible only to the researcher. To keep the research data secure and confidential, no real names or other identifiable information were collected during the research procedures. The only exclusion criterion for participation in the study was being younger than 18 years old. On average, research participants took about 10 minutes to complete the online survey. Survey participants were given the option of responding anonymously or entering their email address to receive a \$5 Amazon.com e-gift card as compensation. Upon completion of their online survey, 110 survey respondents out of 170 respondents (113 compulsive gamers and 57 loved ones of gamers) voluntarily listed their email addresses and received \$5 Amazon.com gift card codes via email. All of the above protocol is reviewed and approved by the Rutgers University Institute Review Board (see Appendix).

-----INSERT TABLE 1 ABOUT HERE-----

Sample

During data cleaning procedure, two responses from the same IP address were dropped to avoid multiple submissions from the same participant. Three incomplete responses were dropped, and five responses were excluded from the dataset after data cleaning procedure using the anomaly detection function in the SPSS 24. The aforementioned five unusual cases had 2.5 or higher anomaly index. Data cleaning resulted in a final sample size of 160: 103 gamers and 57 loved ones of gamers. For a

couple of missing cases, the mean substitution function in the SPSS 24 was used. A complete description of demographic characteristics is presented in Table 1.

Among the 103 gamer respondents, 87.4% were male. Ages of gamer participants ranged between 18 and 45 years old (about 80% were between 21 and 35, $M= 27.4$, $SD= 1.18$); 57 % of respondents identified their racial/ethnic identity to be White; 10% as Asian; 9% as Hispanic, 6% as African American, and 18% as other. In terms of education, 13% of the gamers had high school diplomas; 28% attended some college; 54% had college degree or postgraduate degree. About 40% were single, 41% were married, and 13% were dating someone. About 30% of the gamers reported that they have at least one child. Lastly, 62% of the gamers were employed full time (13% part-time employee and 18% full time student). This is somewhat consistent with a multiplayer online gamer census study (Williams et al., 2008) of 7,000 gamers who were 31 years old on average, mainly white (87%), male (81%), and college-educated (75%).

Among the 57 loved ones, 86% were female. About 79% of the loved ones were between 21 and 35 years old ($M= 31.5$); 70% of respondents identified their racial/ethnic identity to be Caucasian; 9% as Asian; and 11% as Hispanic. Lastly, 53% of the loved ones of gamers attended some college; 39% being college graduate or completing postgraduate degree. 84% of the loved ones were married and 7% were currently in relationship. Out of the 57 respondents, 26 of them were spouses, 3 were significant others (non-married partner), 21 were parents, 1 was a friend of gamer, and 6 respondents did not specify their relationship with the gamer. About 26% of the loved ones did not have any children whereas 65% had one or more children. 72% of the loved ones of

gamers were working full-time and about 9% were homemaker (11% part-time employee, 2% full-time student).

Measures

The constructs in this study were measured using several scales drawn from the existing literature. Close-ended questions include measures of the level of participation, time spent on the community, group identification, social support, gaming experience, partner-control, relational conflict, and demographics. Most variables were assessed on a seven-point Likert type scale ranging from one ('strongly disagree' or 'never') to seven ('strongly agree' or 'always'). Full versions of measures are included in the appendices (see Appendix 1). Even though the study design is not dyadic and the unit of analysis of the survey was an individual, survey participants were asked to rate their own behavior and their partner's behavior to capture the ways gamer's compulsive gaming, loved one's controlling actions, and their online support group dynamics are linked. The responses to customized survey instruments from two different groups (gamers and loved ones) were analyzed separately. The responses of the gamer group and those of the loved one group were not treated as equivalent, which can ensure independent observation in the data⁵. Gamers' and the loved ones' individual data in terms of gaming and controlling were not treated as the same variables because each customized instrument indicates different constructs- either *perception of partner's* behavior or *self-report* of one's own behavior. To clarify how compulsive gaming and controlling behavior were measured for gamers and the loved ones respectively, two sets of measures are suggested separately.

Customized Measures for Gamers

Compulsive gaming. Gamer's *own* compulsive gaming behavior was measured using a modified version of the 15-item instrument 'Generalized Problematic Internet Use Scale 2' (GPIUS2; Caplan, 2010). The GPIUS2 asks about preference for online social interaction (POSI), mood regulation, preoccupation, deficient self-regulation, and negative outcomes based on theoretical foundations. The GPIUS2 has been widely studied and successfully validated in five different countries using English, German, Spanish, Italian, and Portuguese languages (e.g., Fioravanti, Primi, & Casale, 2013; Pontes, Caplan, & Griffiths, 2016). Since the original GPIUS2 was developed for the generalized internet use context, the current study needed to modify it to the online gaming context. Haagsma and colleagues (2013) adapted the GPIUS2 for the online gaming setting and validated the Problematic Online Game Use Scale (POGUS) using adolescent samples. The current study employed the 15-item POGUS and tested the scale with a more representative population. Sample items of POGUS include "*I have played video games to cheer myself up when I felt lonely*" and "*My game use has made it difficult for me to manage my life.*" For the analysis, composite scores were computed and used. The average of compulsive gaming was 5.31 out of 7 ($N = 103$, $SD = .80$). Cronbach alpha value for the POGUS was .90 (POSI $\alpha = .94$; mood regulation $\alpha = .94$, preoccupation $\alpha = .91$, lack of self-control $\alpha = .83$, and harm $\alpha = .87$).

Partner control behavior. A modified version of the 'Partner Interaction Questionnaire' (PIQ, Cohen & Lichtenstein, 1990) was used to measure how compulsive gamers experienced the controlling strategies of their loved ones. At the beginning of the survey, gamers were asked to identify someone who follows their progress in quitting gaming. Gamers were then asked to report the frequency of 10 positive control strategies

and 10 negative control strategies used by their loved ones who want to control their gaming behavior. Negative control tactics include “*She/he criticized my gaming*” and “*She/he expressed doubt about my ability to quit*.” Positive ones include “*She/he complimented me on not gaming*.” Each subscale’s average ratings (on a scale of 1=never to 7=always) were calculated to get the scores of positive ($M=4.41$, $SD=1.35$) and negative ($M=4.34$, $SD=1.17$) control behavior separately. Cronbach alpha value for the positive subscale was .96 and that for the negative subscale was .93.

In addition, the positive/negative control ratio was created to measure the consistency between positive and negative control. Control consistency is defined as “the sequential use of positive or negative strategies” (Duggan & Le Poire, 2006, p. 388). Even though each control subdimension has positive or negative connotation seemingly, one of the current study’s goals was to explore the role of consistency between positive and negative control tactics drawing upon Inconsistent Nurturing as Control theory (Le Poire, 1995). Thus, control consistency was calculated using the absolute value of the difference between the two subscales. For instance, when a partner exerted 6.5 (out of 7) negative control and 4 positive control, the person’s control-consistency value is 2.5 (negative – positive = $6.5-4$). When another partner showed 1 negative and 7 positive control, the person’s consistency is 6 ($1-7$ = negative 6, absolute value 6 is taken). Higher value connotes the controller shows strong preference and consistent use of either positive or negative control tactics. Gamers reported average control consistency .63 (range= 4.8, $SD=.84$, variance=.71).

Customized Measures for Loved Ones

Partner control behavior. To measure how the loved ones of compulsive gamers attempt to change the target's gaming behavior, the aforementioned PIQ (Cohen & Lichtenstein, 1990) was used. The PIQ measures the behaviors of individuals who want their partner to quit unhealthy behavior by reporting the frequency of 10 positive and 10 negative controlling tactics. Positive control behaviors include cooperation and praise, whereas negative control behavior include nagging, shunning, and policing. Considering the original version was specified for cigarette smoking behavior, two items (i.e., "comment that the house smells of smoke" and "refuse to clean up your cigarette butts") were not applicable to the compulsive gaming context. Thus, two items from the negative subscale were dropped from the original scale. To keep the balance in the ratio of positive and negative controlling behavior, two new negative control tactics were added. The newly added items were "*I tried to make him feel guilty*" and "*I withdrew, became silent or clammed up*" adapted from the negative subscale items of health-related social influence strategies developed by Butterfield and Lewis (2002). Negative control items ($M=4.29$, $SD=1.23$, $\alpha=.88$) include "*I Mentioned being bothered by his/her gaming*" and positive ones ($M=4.00$, $SD=1.28$, $\alpha=.94$) include "*I expressed pleasure at his/her efforts to quit*" and "*I participated in an activity with him/her that keeps him/her from gaming.*" Loved ones reported .81 control consistency on average (range= 3.2, $SD=.80$, variance =.64).

Compulsive gaming. To measure the loved one's *observation* of their partner's compulsive gaming, the aforementioned POGUS (Haagsma et al., 2013; adapted scale from GPIUS2 of Caplan, 2010) was used. An adjustment was made to change "I" from the gamer's version to "he or she" in the loved one's version to ask non-gaming loved

ones about their gaming partner's attitude. Sample items include "*He/she prefers online social interaction over face-to-face communication*" and "*He/she has missed other activities because of his/her game use.*" The mean of (observed) compulsive gaming of their gaming partner was 4.41 out of 7 ($N=57$, $SD=1.41$) and it was highly reliable ($\alpha=.97$)

Common Measures for Both Gamers and Loved Ones

Relational conflict. Perceived conflict in the relationship with one's loved ones was measured by using a conflict subscale of the Relationship Questionnaire (Braiker & Kelley, 1979) that has five items about the frequency and intensity of relational conflict. The original scale was adapted to a gaming-specific conflict context. Sample items include: "*How often did you and the person argue with each other about online gaming?*," "*When you and the person argued about online gaming, how serious were the problems or arguments?*," and "*To what extent did you communicate negative feelings toward the person (related to online gaming)?*" On a scale of 1 to 7, higher scores denote more relational conflict. Average values were used for the analysis (Gamers: $M=4.20$, $\alpha=.91$; Loved ones $M=4.48$, $\alpha=.89$).

Social support. Social support is generally assessed in two ways: psychologically *perceived* support and *enacted* support. When individuals receive social support, they tend to experience psychological adjustment effects through their perception of support (Barrera, 1986; Wethington & Kessler, 1986). Thus, perceived support is more likely a stable personality trait that is affected by individual values, and thus does not necessarily correlate with actual enacted support (Goodwin et al., 2004). Therefore, this study distinguishes enacted support from perceived support when conceptualizing and

measuring social support. I chose enacted support because it is a more communicative variable that is situated within social interaction (Goldsmith, 2004) compared to ‘perceived support’ which is affected by individual predispositions. To measure the frequency of enacted support, the ‘Inventory of Socially Supportive Behaviors (ISSB)’ (Barrera, Sandler, & Ramsey, 1981) was used because ISSB captures various sub-dimensions of supportive behavior including informational, emotional, validation, and companionship support. Five items about tangible support were dropped because they were not applicable to online settings (e.g., sending money). Sample items include “*The [community name] members gave you feedback on how you were doing without saying it was good or bad*” and “*The community members talked with you about some interests of yours.*” (Gamers: $M = 4.47$ out of 7, $\alpha = .97$; Loved ones $M = 4.03$, $\alpha = .96$)

Group identification. Group identification was measured using the 12-item ‘Arrow-Carini Group Identification 2.0’ scale (Henry et al., 1999) because this measurement integrates three conceptually distinct sources of group identification: affective bonds, cognitive categorization, and interdependent behavior. Affective bond sample items include “*I enjoy interacting with the members of this [community]*”, interdependence samples include “*This [community] accomplishes things that no single member could achieve*”, and cognitive categorization items include “*I think of this [community] as part of who I am.*” Gamers’ group identification mean was 4.68 (on a 7-point scale) with reasonable reliability ($\alpha = .80$) and the loved ones’ mean was 4.73 with high reliability ($\alpha = .91$). When broken down to subscale, gamers and loved ones’ affective dimension scores were 4.86 ($\alpha = .67$) and 4.52 ($\alpha = .72$), respectively; behavioral

dimension scores were 4.71 ($\alpha=.52$) and 4.89 ($\alpha=.83$), respectively; and cognitive dimension scores were 4.51 ($\alpha=.55$) and 4.71 ($\alpha=.64$), respectively.

Participation. To measure the level of participation in the online group, survey participants were asked about the approximate frequency of (1) visiting, (2) reading, (3) posting, (4) commenting, (5) talking to other members directly via messaging/emailing/chatting/calling, and (6) archiving (e.g., saving, sharing, printing out) behavior in the past month respectively. Sample items include *“In the past month, approximately how often have you posted any messages to the [community].”* A total of six items were measured from 1 to 9 (1= never, 2= every few months, 3= once a month, 4= 2-3 times a month, 5= once a week, 6= 2-3 times a week, 7= 4-5 times a week, 8= every day, and 9= several times a day). Even though this was an original scale, both gamer and loved ones reported high reliability scores (Gamers: $M=5.10$, $\alpha=.91$, Loved ones: $M= 4.71$, $\alpha=.93$).

Data analysis

Demographic information such as gender, education, age, marital status, and family situation (including the specific relationship with gamer) was asked in the survey to use as control variables in the statistical analysis. After cleaning the data, a series of descriptive analyses were conducted to confirm the normality of distribution of the study variables. After checking unidimensionality and reliability of each scale, a set of composite scores was calculated by aggregating and averaging individual items. Multiple regression models were used to test most hypotheses to find associations among study variables. Mediation models were tested using the PROCESS macro SPSS plugin with bias-corrected bootstrap confidence intervals (Preacher & Hayes, 2008). Traditionally,

joint significance test (Baron & Kenny, 1986) and Sobel test (Sobel, 1982) have been widely used to test the significance of indirect effects (Hayes, 2009). Baron and Kenny's method has high type I error and is usually used as a supplementary method. The Sobel test method assumes a normal sampling distribution and also reports high type 2 error, which causes problems in a small dataset. Preacher and Scharkow (2013) particularly warned against the Sobel test because of its low trustworthiness and low power.

Given that the sample size of the current study ($N=103$ and 57) is not big, the bootstrapping method of Hayes (2013) is more appropriate because this nonparametric method makes no assumptions about the distribution of indirect effects (Hayes, 2009). Significance of indirect effects is determined by examining bias-corrected and accelerated 95% confidence intervals (BCa CIs), which include corrections for both median bias and skew (Efron & Tibshirani, 1993). If zero is not included in the 95% CI ranges (lower limit and upper limit), the indirect effect can be considered significant.

Qualitative Method: In-Depth Interviews

Qualitative in-depth interviews are useful methods for studying the relational conflict and tensions in online support groups experienced by both compulsive gamers and their loved ones, respectively. To answer the research question, a series of open-ended questions were used as a semi-structured interview guide. The interviewees (both gamers and loved ones) were asked to describe their gaming-specific problems, interpersonal conflict, and online support community use. Sample interview questions include “*What made you join this community?*” and “*What have you done to try to cope with the negative impact (if any) of your/your loved one's compulsive gaming on your relationship?*” (See Appendix2 for interview guide).

Data Collection

A recruitment message was posted on the publicly accessible message boards in three research sites asking for volunteers to participate in an interview for about 45-60 minutes. The only criterion was whether the participant was an adult user of online support groups for either gamers or loved ones. Participants were asked to email the researcher in order to set up a Skype or Google Hangout meeting. From July 2016 to March 2017, a total of 22 individuals (14 gamers and 8 loved ones) contacted the researcher, but two minors were screened out because of age. Initially, the researcher tried to recruit couples (gamer and romantic partner) or family (gamer and parents/children/sibling) pairs for dyadic joint interviews; however, none of the participants wanted to invite their family or partner to the study. Thus, all interviews were conducted individually for about 50 minutes on average.

20 participants (12 gamers and 8 loved ones) were informed of the purpose of the study and were also assured that their identity and responses would be kept confidential, using only numeric codes. After the interview, each participant received a \$20 Amazon e-gift card via email as compensation. Their audio recordings were manually transcribed, coded, and analyzed by the researcher. During transcription and analysis process, any potential identifiers were censored and some quotes were slightly paraphrased to ensure confidentiality of the interviewees.

Data Analysis

A total of 19 hours of interview audio records produced 150 pages of single-spaced transcripts. Interview transcripts were analyzed using *NVivo* 11, a content analysis software. A grounded theory approach (Charmaz, 2006; Corbin & Strauss, 2008) and

constant comparative method (Corbin & Strauss, 2008) were used to capture recurring patterns and emerging themes across the interview data. The data coding process consisted of three analytical steps: *open* coding, *axial* coding, and *selective* coding phases.

First, during the *open coding* phase, I read interview transcription line-by-line and generated 358 initial codes. There were several ambiguous or redundant coding nodes that needed clarification or relocation. Second, I read through the preliminary codes again to merge or collapse similar nodes into groups and to move some codes to more appropriate categories. I kept modifying codes and integrating subcategories into new upper categories. In this *axial coding* phase, a complex web of relational tensions and communicative responses started to emerge. After two rounds of exploratory coding cycles, 8 upper thematic categories and 60 subcategories were created.

To achieve theoretical saturation (Corbin & Strauss, 2008), where no new dimensions can emerge from the data anymore, I reread the transcript again and made sure my coding schemes did not miss out any new emergent themes. Third, I selected and identified a list of core categories, subcategories, properties, and systematic relationships out of 339 final codes. During this *selective coding* stage, I constantly went back to the transcript to refine and distinguish key concepts and to generate valid narratives across the data. After multiple iterations of these coding steps, a larger thematic structure and interrelations among codes were found. The results will be discussed in the following chapter.

V. RESULTS

Quantitative Findings

Descriptive Analysis

As a preliminary step, descriptive statistics, reliabilities, and independent samples *t*-test were conducted (see Table 2 and 3). Statistically significant mean differences were found in online social support between gamer participants and the loved ones respondents. Results show that compulsive gamers ($M=4.47$, $SD=1.23$) received more online social support than the loved ones did ($M=4.03$, $SD=1.38$, $N=57$, $t(158)=2.06$, $p < .05$). No statistical differences were found between gamers and loved ones in other study variables such as relational conflict, support group participation, and support group identification. When broken down to different relationship types (i.e., parents vs. spouses), there was no significant mean difference between the loved ones' subgroups. For instance, spouses reported 4.89 relational conflict out of 7 whereas parents reported 4.3 out of 7 but this difference was not statistically significant.

-----INSERT TABLE 2 & 3 ABOUT HERE-----

Next, a series of exploratory factor analyses was also conducted to check internal consistency, validity, and emerging dimensions. The researcher used principal axis factor analysis with oblique rotation method (with Promax rotation, Kappa = 4) because most subscale items in the study variables (e.g., online social support) showed significant overlap. Compared to orthogonal rotation methods (e.g., Varimax) that are easier to interpret, oblique rotations can more accurately capture reality (Brody, 2017). In addition, bivariate correlations among all study variables were computed. As illustrated in Tables 4a and 4b, each Pearson correlation r (except for three sets from loved ones) was

below the recommended threshold of .70 (Fidell & Tabachnick, 2003). This means most variables in the dataset did not exhibit multicollinearity issues.

-----INSERT TABLE 4a ABOUT HERE-----

For gamers group (see Table 4a) positive correlations were found between: compulsive gaming and online gaming recovery support group identification ($r = .41, p < .001$); received positive control and online social support ($r = .53, p < .001$); relational conflict and online support group participation ($r = .65, p < .001$); and online support group participation and online social support ($r = .54, p < .001$). As predicted, loved one's control consistency and gamer's relational conflict were negatively correlated ($r = -.35, p < .001$). Unexpected associations were also reported. One notable finding was the negative correlation between online support group participation and online support group identification ($r = -.34, p < .001$), which will be revisited during follow-up multiple regression tests and discussion chapter.

-----INSERT TABLE 4b ABOUT HERE-----

For the loved ones (see Table 4b), three sets of variables were highly correlated: partner's compulsive gaming and relational conflict ($r = .73, p < .001$); one's own negative control and online support group identification ($r = .71, p < .001$); and online support group participation and online social support ($r = .71, p < .001$). Even though those three potential multicollinearity cases are still close to the recommended .70 threshold (see Fidell & Tabachnick, 2003), the researcher was cautious when handling those variables. For instance, their variance inflation factors (VIF) and tolerance results were carefully examined during multiple regression analysis. Most study variables showed positive significant associations.

Notable correlations include loved one's own negative control and relational conflict ($r=.68, p < .001$); negative control and online support group participation ($r=.48, p < .001$); one's own positive control and online social support ($r=.65, p < .001$); relational conflict and online support group identification ($r=.49, p < .001$); online support group participation and online group identification ($r=.61, p < .001$); and online social support and online group identification ($r=.63, p < .001$).

Multiple Regression Analysis

To capture a holistic picture of relationships among study variables, a set of stepwise multiple regression analyses was conducted. To compare regression coefficients easily, standardized z scores were used for regression modeling. According to collinearity statistics results, all VIF scores were lower than 2 and all tolerance values were lower than 1 and Durbin-Watson results were also around 2, which means multicollinearity does not present (Lewis-Beck, Bryman, & Liao, 2003).

Gamers. First, all study variables were entered as independent variables in a two-step multiple regression model to examine their influences on gamer's relational conflict (See Table 5). Interestingly, gamers' compulsive gaming did not predict the level of relational conflict (**H1a** not supported), but control consistency ($\beta = -.21, p < .05$, **H3a** supported) and online support group participation ($\beta = .59, p < .001$, **H4a** supported) were found to be related to relational conflict (adjusted $R^2=.43, F(3,99)=15.10, p < .001$). Simply put, consistency in control strategies from non-gaming partners reduce gamer's relational conflict (**H3a**). Gamers who participate more in their online support group showed higher relational conflict with their offline partners; and less social support also predicted higher relational conflict.

-----INSERT TABLE 5 ABOUT HERE-----

A second multiple regression model (see Table 6) was tested to see study variables' overall influences on control consistency ($R^2=.19$, $F(2,100)=10.58$, $p < .001$). Gamer's compulsive gaming was related with control consistency tactics that they received from their loved ones ($\beta = .29$, $p < .01$, **H2a** supported) and relational conflict ($\beta = -.33$, $p < .001$). This result means that gamers who receive more consistent controls from their partners tend to show higher awareness of their compulsive gaming and lower relational conflict. In other words, interaction with offline partner has significant influence on how gamers realize and admit the seriousness of their compulsive gaming.

-----INSERT TABLE 6 ABOUT HERE-----

As shown in Table 7, a third regression model examined how online support group participation was influenced by other variables ($R^2=.77$, $F(3,99)=35.15$, $p < .001$). Offline relational conflict ($\beta = .60$, $p < .001$) predicted the level of participation, whereas online support group identification was not significantly related to the participation level (**H6** rejected). This indicates that gamers who experience higher relational conflict with their loved ones tend to participate more in the support group. However, it was unexpected that the identification with the support group was not associated with participation.

-----INSERT TABLE 7 ABOUT HERE-----

The last regression analysis (see Table 8) was conducted to see the study variables' overall impact on the amount of online social support received from group ($R^2=.37$, $F(2,100)=30.48$, $p < .001$). Both online support group participation ($\beta = .65$, $p < .001$, **H5a** supported) and online support group identification ($\beta = .32$, $p < .001$, **H7a**

supported) were found to influence online social support as shown in Table 8. The results show that gamers who participate in the online support group more and those who identified with the group more tend to receive more online social support from the online support group as predicted.

-----INSERT TABLE 8 ABOUT HERE-----

Loved ones. A series of stepwise multiple regressions were tested to see overall associations in the research model. First, loved ones' relational conflict was influenced by their partner's compulsive gaming ($\beta = .71, p < .001$, **H1b** supported) and online support group participation ($\beta = .34, p < .01$, **H4b** supported) as displayed in Table 5. Loved one's control consistency did not have significant impact on their relational conflict with gamers, thus **H3b** was not confirmed ($R^2 = .60, F(3,53) = 26.97, p < .001$).

Secondly, as shown in Table 6, loved one's perception of their partner's compulsive gaming was found to influence the loved one's control consistency ($R^2 = .28, F(1,55) = 22.55, p < .001$). In other words, compulsive gaming of the gamer ($\beta = .54, p < .001$, **H2b** supported) had positive influence on the consistency between negative and positive control tactics used by the loved ones as predicted. This means that loved ones of gamers who think their partner's gaming is compulsive tend to employ either negative or positive control strategy to change gamer's behaviors and consistently use the strategy.

Next, Table 7 shows regression coefficients for online support group participation ($R^2 = .42, F(2,54) = 21.26, p < .001$). Loved one's support group participation was predicted by support group identification ($\beta = .76, p < .001$, **H6b** supported). This implies that loved ones who identify with the support group more tend to participate more in the support group.

Lastly, both online support group participation ($\beta = .53, p < .001$, **H5b** supported) and support group identification ($\beta = .31, p < .01$, **H7b** supported) were significantly associated with loved one's received social support from their online support group ($R^2 = .57, F(2,54) = 35.10, p < .001$) as reported in Table 8. Overall, 11 out of 14 hypotheses were supported as summarized in Table 9 and Figure 3a and 3b.

-----INSERT TABLE 9 and FIGURE 3a & 3b ABOUT HERE-----

Mediation Models

To test mediation hypotheses, mediation tests were run using the PROCESS SPSS macro plugin (Hayes, 2013) with 95% CIs. Template model 4 was used along with 5,000 bootstrapping samples. First, gamer's relational conflict mediated the relationship between their partner's control consistency and their online support group participation (indirect effect = $-.22, Z = -3.34, p < .001$, $\text{bootSE} = .09$, 95% BCa CI = $[-.397, -.055]$). As presented in Table 10, the impact of control consistency became statistically insignificant when relational conflict was included in the model, thereby confirming MH1a. Loved one's relational conflict also mediated the relationship between their own control consistency and their participation in the support group (indirect effect = $.15, Z = 1.98, p < .05$, $\text{bootSE} = .07$, 95% BCa CI = $[.018, .393]$). Thus, the MH1b was confirmed as well.

-----INSERT TABLE 10 ABOUT HERE-----

As a follow-up to MH1, the control consistency variable was broken down into positive (MH2) and negative (MH3) dimensions to see whether the negative or positive control tactics played any different roles. To rule out other potential indirect effects within the research models, several alternative paths with different combinations of

variables were tested. In any case, their indirect effects were either not significant or less significant than the proposed mediation model. For the gamer group, two mediation models were discovered (see Figure 4). The same mediation models were not tested for the loved ones group due to small sample size ($N=57$).

-----INSERT TABLE 11 & FIGURE 4 ABOUT HERE-----

In the first mediation model, gamers' relational conflict mediated the effect of negative control (that they received from their partners) and support group participation (indirect effect = .31, $Z=4.42$, $p < .001$, $bootSE=.06$, 95% BCa CI = [.203, .443]). As reported in Table 11, the mediator – relational conflict accounted for about 62% of the total effect. When the mediator (relational conflict) comes into the model, the direct effect of negative control becomes almost non-significant ($p=.05$), which confirms a partial mediation model (MH2 supported). In the second mediation model (path 2), there was a significant indirect effect of positive control on the online support group participation through online social support (indirect effect = .24, $Z=3.7$, $p<.001$, $bootSE=.08$, 95% BCa CI = [.116, .428], MH3 supported). The mediator (online social support) accounted for about 60% of the total effect. In this model, the direct effects of the positive control variable became non-significant when the online social support variable entered, which suggests a full mediation model. Thus, all mediation hypotheses were confirmed. Detailed discussion of the quantitative results will be revisited later. Qualitative interview findings will be examined in the next section.

Qualitative Findings

To answer **RQ1** on relational conflict between gamers and their loved ones, interview participants' game-related argument patterns and reactions were examined. Multilayered relational tensions manifested in two overarching dialectics: (1) nurturing – controlling and (2) expression – privacy. A range of communicative responses to the two dialectical tensions were also found as shown in Table 13.

-----INSERT TABLE 13 ABOUT HERE-----

Nurture – Control Dialectics in Offline Relationships

Interview findings revealed that loved ones of gamers constantly struggle from their competing goals between *taking care of* their beloved gamer and *punishing* the gamer's gaming behavior. In particular, a nurturing goal was quite salient among the mothers of gamers, while controlling tactics were more prominent among the wives of gamers. Depending on the seriousness of gaming, harm, and relationship stage, loved ones and gamers' responses to the dialectics varied. Both gamers and loved ones showed *selection*, *integration* (hybrid sense-making) and *network separation* strategies while loved ones showed one more tension management strategy: *vacillation*. First, loved ones' selection strategies were analyzed.

-----INSERT TABLE 14 ABOUT HERE-----

Selection (by loved ones). For the loved ones, a way to satisfy their conflicting desires between nurturing and controlling was simply making a firm choice and sticking to it. As shown in Table 14, loved ones of gamers chose *nurturing* pole represented by several strategies: reinforcing (gaming together to have fun together), enabling (taking care of household chores for the gamer), bargaining (compromising or lowering

expectations), being optimistic (naïvely hoping for better future), and denying the problem (ignoring or dismissing their beloved gamer's gaming). First, interviewee #11 demonstrated an example of selecting the *nurturing* pole in the nurture- control dialectics.

"I can't change or control him. I don't want to stop his playing altogether as this is his sole interest... All I asked was he got in control of it, rather than the game controlling him.. Unless he quits on his own, he will always have resentment and reservation so I can't dictate he quits... I just do all the chores, shopping, cooking, cleaning, laundry...I do it all while he games away. What can I do? He is my son."
(Interviewee #11, gamer's mother)

Interviewees #11 chose to stop controlling him after trying many strategies. She mentioned she considered providing a completely new environment to their gaming son (e.g., boarding schools, rehab, religious camps, or volunteer program). Sending her minor child to such institutions seems to be a strong control strategy, however she could not actually pursue it due to resistance from her child who still denies his problem. When the parents of gamers retract their decision or change their control strategies suddenly, such inconsistency and unpredictability grows confusion, resentment, and mistrust for the gamers. This finding supports Inconsistent Nurturing as Control theory (Le Poire, 1995) in that functioning caregiver's incoherent patterns of nurturing and punishing behaviors turn out aggravating addiction problems and relapse of addicts. As shown in the case of interviewee #11, mothers of gamers end up choosing nurturing role even though they are very active in exchanging informational support in their online support group to share how to deal with their children's gaming.

On the other hand, spouses of gamers tend to chose the *control* pole rather than nurture pole. As Table 14 shows, interviewee #7, #15, and #18 mentioned they had used many control strategies including positive control (e.g., direct conversation, inspirational

messages, complimenting, bribing, offering alternative hobbies or new environment, and referral of therapy or institutions) and negative control (e.g., detaching, spying, punishing, blocking games, threatening, using violence, manipulating, blaming, and shaming).

Interviewee #2 (wife) said her online support group taught her how to stop enabling her husband and how to confront her gaming husband assertively, directly, and consistently. Deselecting the nurturing role and turning toward controlling role by stopping enabling implies that the loved one gains more power in the relationship. Both interviewee #2 and #7 decided to stop doing chores for their gaming husbands, which is an example of selecting the control pole and dropping the nurturing pole. Spouses or partners of gamers are technically able to settle their relationship when they give up on the gamer. This gives them more leverage to choose strong control tactics; and their ultimatum is divorce.

“I talked to my therapist and people here (online support group) and they gave me legal advice, like collecting evidence for divorce.. I told my wife all about that and then she started listening to me. She was afraid to lose everything. I am the one who pays the bill...” (Interviewee #18, gamer’s husband)

As the quote above reveals, a couple of interviewees were considering divorce seriously and using it as a strong controlling strategy to change the behavior of their gaming partners. It is somewhat interesting that being able to divorce ironically empowers the spouse of gamers to convince the gamers to change and sustain their marital relationship. This also implies instrumental support such as legal consultation is found to be effective in controlling the gaming behavior and improving the relationship.

Of course, not all loved ones play strong control strategies such as the divorce card. Interviewee #17 (partner of gamer) tried a variety of positive control strategies that

she learned from the support group such as introducing new hobbies, spending more time outdoor with her beloved gamer, and going to couple therapy, which helped them constructively solve their relational issues and her partner's gaming problems. Overall, nurturing and controlling dialectics were commonly found among the loved ones of gamers and relational type was related to the selection of either nurturing or controlling pole.

Responses to partner's nurturing or controlling selection. The nurturing – controlling tension and the inconsistency between positive and negative control strategies made by loved ones created confusion and uncertainty for gamers: *“She let me play games in general, but when she's feeling cranky, she stops me. She thinks it is still better than doing drugs outside, so just let me play, but she doesn't look happy with it. It is like mixed signal, she doesn't say anything outloud, but she's staring at me.”* (Interviewee #13, gamer). As interviewee #13 said, gamers do recognize the dialectical tension that their loved ones express and their inconsistent control tactics or mixed messages as a result of the nurturing-controlling dialectics. In reaction to varied partner-control tactics (see Table 14) from their family or romantic partner, gamers also employed various strategies to react to nurture-control dialectics.

-----INSERT TABLE 15 ABOUT HERE-----

Gamers had two main sources of problems: their own gaming and their partner's control. The best ideal option was to quit gaming, which would solve both problems; however, staying away from games was not easy for them. They went through the following thought process: (a) start pondering whether their gaming is a “real” problem, (b) whether the problem is serious, (c) why they have the serious problem, (d) how they

can improve their situation, and (e) how they can maintain their progress without relapse. While navigating these phases, they showed denial, resistance, accommodation, and transformation tactics. Denial and avoidance tactics are self-explanatory; gamers ignored their partner's control and refuted their gaming problem. For instance, one of interviewees attributed his excessive gaming to his home environment such as negligent parents in a divorced family and his childhood trauma that he was bullied and isolated. During the interview, he often justified that his gaming was his only coping mechanism, which explains why he was being defensive and avoiding or resisting his parents' control attempts: *"I had real connections to my family. They abandoned me and abused me. They were never there for me and games were my babysitter and my friends.. And now what, they suddenly care about my gaming? Why? I am better off without them..."* (Interviewee #10, gamer) His answer suggests the relationship history is an important factor that influences how nurturing or controlling strategies affect gamers differently.

Prior research has found that people with internet addiction tend to show high levels of denial and rationalization for their internet use (Chrismore et al., 2011). In response to constant partner-control, some gamers showed strong resistance due to their gaming inertia. Too much control or misuse of control tactics often led to resentment and backfire, worsening their gaming. As a reaction to their parents' control, young gamers developed deception tactics to secretly continue their gaming behavior. Interviewees explained their cunning strategies to hide their gaming become which became more sophisticated as they received more control. One interviewee figured out the password to his home computer that his parents set, which ironically allowed him to play games even more. Another interviewee also undermined his strict parents' screen time limits by

spending most of the time at his friends' house playing games. Child – parent relationships, where the gaming children tend to be more technology-savvy than their controlling parents, showed these deception tactics frequently. Overall, most child gamer interviewees had their own tricks and war stories.

“Growing up, my mother used to take the computer mouse with her when she went to work. You know what I did? I just went to the store and bought a new mouse, and kept it in my room, so I could play the game whenever she wasn't around...” (Interviewee #4, gamer)

Compared to that, spouse – gamer relationships did not report such lying incidents much. These strategic responses of gamers suggest that their own realization and own admission of one's problem is key to fundamental changes in their behavior and reconciliation with their loved ones. No matter how effective the controlling strategy the loved ones introduce, gamers in denial always develop circumvention tactics to bypass the restriction. This suggests that intrinsic motivation to change is as important as extrinsic motivation that is influenced by external pressure from their loved ones.

Next, accommodation and transformation both reflect changing behavior influenced by their partner. Compared to accommodation, transformation is more fundamental change that is driven by voluntary admission of one's gaming problem and strong desire to fix his/her life. The transformation stage is a more matured phase where sobriety and abstinence is maintained stably. Interviewee #3 illustrated his change from simple accommodation to transformation stage:

“My wife is the greatest thing in my life, and I wouldn't be where I am today without her. She found this site (online support group) for me and suggested to try offline meetings. I pretended I attended the meetings, but actually I didn't go, and I relapsed. It was horrible to see I'm doing wrong to her, but I was not ready at

that time. I realized she didn't deserve that. I changed finally and I want to show her that I love her more than anything and that I will not neglect her for online games. I literally opened-up my eyes...She is looking forward to seeing how I change, now that I've stopped gaming finally. We know it might take long for me to go back to normal, but that's okay. The important part is that I'm working at being a better person. She understands that and 100% supportive..” (Interviewee #3, gamer)

As this quote says, partner's support plays a crucial role in fundamental changes in the attitude and behavior of the gamer.

Vacillation (by loved ones). Vacillation means switching between poles depending on context (Tracy, 2004). Caregivers tied to compulsive gamers as a *family* (e.g., parents, siblings, children, or spouses of gamer) showed more vacillation responses than non-family loved ones (e.g., girlfriend of gamer). Interviewee #18 said “I can't be with her anymore, but I can't let go. I can't move on” because he did not want to divorce his wife because he still loves her wife, misses their good old memories and past “functional” relationship, and still had hope for changes in his wife in the future. Direct family member's situation is even more tough than such marital relationship context:

“I tried to talk to her about it (her mother's gaming) nicely, confronted her over it, written to her, texted her about it nicely many many times.. I tried everything, but nothing works. She stops playing for few days, that made me happy, and then she started playing again, and I threaten her to leave the house.. I live with my mom and I can't give up on her. She doesn't have any friends...” (Interviewee #9, gamer's daughter)

As shown in the quote above, familial bond often imposes heavy and unfair liability to the loved ones of gamers as they hate gaming behavior of their beloved gamer yet still love and miss the gamer. On the other hand, friends or casual-dating romantic

partners were able to make a firm decision and leave the gamer without facing serious legal or financial consequences (e.g., divorce, child custody duty). Due to parental obligation, mothers of minor gamers cannot completely give up their nurturing role. A parent of teen gamer cannot simply terminate the relationship with his or her gaming child.

Spouses who have children with gamers also had to consider the well-being of their children and finances in the household first before taking any serious action upon the gamer. One of the interviewees even called herself a “hostage” in her relationship with her beloved gamer and her familial duty, implying she didn’t feel she had any leverage to choose between nurture and control.

“My hands are tied behind my back. Because of my daughter, he (gaming husband) can hold me a hostage. The problem is I live in Florida, and Florida is a ‘no-fault’ divorce state, so my only concern is my daughter’s custody. I am looking for a job so I can get on my feet and divorce him and raise my child without him...” (Interviewee #2, gamer’s wife)

Spouses and mothers of gamers were in a confusing and stressful situation where they kept oscillating between nurturing and controlling among the entire family. Actually, such vacillation is what INC theory warned against. Theoretically, inconsistently vacillating between a nurturing and caring role is harmful to both addicts and caregivers of addicts, as discussed in Chapter 3. However, practicing the INC theory in real-life seemed to be difficult. Many loved one interviewees described their situation as “lost,” suggesting they cannot decide which control strategy or plan they should take to deal with relational conflicts with their beloved gamer and to cope with their frustration. This dilemma led the loved ones to another response: network separation strategy.

Network separation (by loved ones). Network separation means strategic segmentation of communication *content* and *partner*. Both gamers and loved ones turned to online communities for support, but the discussion is separated. First, loved ones of gamers start relying more on their own online support group instead of their offline social network as their offline family or friends (not to mention the gamer) could not understand their struggles. As found in prior studies on the “game widows” (Lianekhammy & van de Venne, 2015; Northrup & Shumway, 2014), participants of the current research also shared their common feelings (e.g., hopelessness, anger), marital grievances (e.g., financial conflict, lack of attention, negligence of marital responsibility), and decreased communication and intimacy with their compulsive gamer partner.

Interviewee #9 (adult child of gamer) said she shared her deep feelings only in the support group forum because her friends and her family dismissed her frustration and her parents’ gaming problems. Instead of isolating herself and sitting in pain, she joins and uses the ‘family of gamer’ forum where she receives substantial emotional support through many comments. Many users sent her prayers, compliments, encouragement, and positive thoughts. She distances and protects herself from her unsupportive offline friends/family, but connects to her more useful online support network.

This network separation strategy seemed to function as the most productive strategy for most interviewees because the loved ones needed a go-to place for validation and support. Shutting doors on hurting offline relationships and opening new doors to like-minded online support network turned out to be a very effective coping strategy for the loved ones. For instance, online support groups play a significant role in teaching the loved ones to build healthy boundaries and independence in their relationships.

Loved ones of gamers commonly reported feeling “relieved” from guilt or responsibility as a main take-away from the online support groups. Interviewee #11 (mother) told me her group has a ‘3C’ slogan: “I (1) *didn't cause*; (2) *can't change/control*, and (3) *can't cure* (the beloved gamer’s game addiction).” Interviewee #7 (wife) also noted the 3C slogan well-summarized and addressed her main concerns and offered her huge comfort and clarity in her stressful and uncertain situation:

“They (online group members) told me to keep coming back, keep sharing, and taking care of myself first because I deserve better. They keep reminding me the three Cs about game addiction. You didn't cause the addiction, you cannot change the gamer, and you cannot cure the addiction. That’s really really helpful advice. I say it outloud when I feel terrible and it calms me down... This is so inspiring and kind community. Just knowing that we are not alone helps so much...I can’t tell how thankful I am to find this group of people who are experiencing the same situation that my husband and I are. So many people were dealing with this same issue..” (Interviewee #7, gamer’s wife)

Until being a part of the group, they couldn’t feel free from their beloved gamer’s problematic gaming and its consequences. By realizing that partner’s gaming is not their fault, and being assured that they deserve to take care of themselves first, the loved ones finally feel exempt from this long-standing liability. Such feeling of liberation and redemption and being able to stop beating themselves up were found to be the most important changes after using the online support group for the loved ones.

Network Separation (by gamers). Gamers also sought new communication partners to talk to and seek help outside their dyadic relationship. Some interviewees told me their therapist or psychiatrist was not familiar with game addiction and invalidated their gaming related problems, making their recovery even harder. Interviewee #13 was looking for a new therapist because his “old school” therapist was too outdated to know

anything about game addiction and even trivialized his suffering. A couple of other interviewees also complained about the ignorance and dismissive attitude of their mental health practitioners who “belittled” having compulsive gaming problems.

“My therapist said ‘you can just get a divorce if you don't want to stay in the marriage and move on, or if you think the marriage is worth saving for you and the kids, then you should start working on separating yourself from your gaming husband...’ Anyone can say that, just divorce? I get a way better help from online than from my therapist.” (Interviewee #15, gamer’s wife)

It was interesting to see that several interviewees experienced their gaming problems downplayed by professionals such as substance addiction counselors or marriage counselors. Since gaming is a relatively new phenomenon and there still are controversies surrounding online gaming disorder diagnosis and treatment, this seems to be one of reasons why recovering gamers rely more on online support groups than other methods.

According to the gamer interviewees (#6), they received practical advice to cut down on gaming from their online support network: deleting the game, blocking access to the game, filling the void by starting new hobbies, engaging with a new responsibility (e.g., adopting a pet, registering for educational or volunteer programs), changing environment or travelling, using the online support group forum like a personal journal to share their daily progress, participating in the online chat daily meetings, using the group chatting application “WhatsApp” on their smartphones, and finding a “recovery buddy” or sponsor to be accountable. Having a new support network means a lot for some gamers, especially those who had suffered from loneliness and isolation. The online support group offers them an honest and safe place to “fit in” and feel welcomed.

“I honestly feel like I'm a different person already, just because for the past week I've had several conversations with people that I would never have been able to have otherwise, and I've even been given five or six phone numbers, and invitations to call---which I haven't used yet, but it's very nice to know that there are people out there who care about me and my problems, even if we've never met...I feel like I have a place that I belong, finally.. After all these years, GAA (pseudonym) is like a family that I never had...Having any kind of community at all is a very new thing for me. It's nice feeling accepted for the first time in my life.” (Interviewee #6, gamer)

When withdrawal symptoms are serious, members are recommended to try traditional face-to-face 12-step addiction recovery fellowship. Interviewee #3 and #20 had attended local Gamblers Anonymous meetings frequently and received a lot of help. As such, having one's own support network that is composed of like-minded fellow gamers in recovery (apart from their offline relationship) seems to be very effective network segmentation strategy. This supports prior social support studies that found correlations between insufficient offline social support and online support group activity (e.g., Cummings et al, 2002).

Hybrid sense-making (both gamers & loved ones). Both loved ones and gamers were found to use reframing as a strategy to deal with their chaos. Their relational conflict, entangled with compulsive gaming and nurture-control inconsistency, is a compound of uncertainty and tension. A hybrid sense-making strategy was dismantling their complex issues and separating the problem (game addiction) from the person (gamer). This hybrid sense-making was found to be particularly productive for both gamers and loved ones. They reported doing extensive research on *general* addiction to reduce their uncertainty about game “addiction.”

By reading articles on substance addiction, they learn to distinguish the addiction from the addict. As a result of such addiction vs. addict disassembling, the loved ones are finally able to justify why they cannot completely blame, hate, or abandon their beloved gamer. Through understanding addiction literature, family and significant others of the game “addicts” depersonalize their past experiences and deconstruct their hurt feelings. They realize anger toward the “addict” is destructive, and redirect their resentment toward the “addiction.” They learn and identify with the substance addiction discourse and apply its cause, symptom, metaphor, diagnosis, recovery program, and even treatment to their compulsive gaming context.

“I did some research on addiction generally. I learned a lot from reading wikis and articles about other addictions like drug and gambling, since there isn't a lot out there specifically on gaming. After reading those, I understand better about my partner.. why he developed that, how he can get better, or what I should do or should not do as a partner.. and I'm trying to be more conscious around him, like not to showing him any triggers and stuffs...” (Interviewee #17, gamer's romantic partner)

Such sense-making effort is beneficial not only for the loved ones but also for the gamers themselves. For example, interviewee #5 and #14 (gamers) believed their compulsive gaming fell into the “addiction” spectrum. They explained a lot of information on the neurobiological mechanisms of compulsive gaming. It seems the addiction as “disease” approach and physiological attribution (e.g., dopamine, serotonin) satisfy their informational needs to make sense of their gaming problems while curtailing their feelings of shame and guilt. During the interview, some interviewees showed very impressive levels of knowledge on DSM-5 addiction diagnosis criteria and up-to-date research trends in the psychology and psychiatry fields.

“I go to (other subreddit name) for my substance addiction too. I learn so many things there. I follow a lot of news and websites on addiction. Then I realized my gaming, smoking weed, and watching porn.. are all connected.. They have same deeply underlying issues.. My brain is wired that way... (and long explanation on neurochemical mechanism followed)” (Interviewee #16, gamer)

Using substance addiction research and treatment approach as a major frame of reference seems to be the most popular and constructive strategy to deal with their relatively new and controversial problem. This sense-making process is unique in that they develop a new hybrid strategy outside of the nurture — control dialectic. Identifying addiction as “disease” and understanding its biological addiction mechanisms turned out to be a valuable *reorientation* for both loved ones and gamers. They channelled their confusion, frustration, shame, and fear into a more constructive direction: educating themselves about addiction and growing empathy toward the gamer’s problem. Hybrid discourses on game “addiction” extend beyond their understanding of ‘new’ compulsive gaming issues and ‘old’ substance addiction issues to make their uncertain problem more identifiable, understandable, and relatable easily. In particular, gamers were repurposing substance addiction literature and resorting to traditional recovery program (e.g., AA, GA), whereas loved ones were consulting codependence literature⁶ (e.g., Beattie, 2008) and support groups for the family of addicts (e.g., Al-Anon) to put the pieces of a puzzle together. For instance, interviewee #20 received informational support from offline AA meetings and literature.

“I read the AA Big Book and realized what I had was an active addiction. I realized how the disease infected my life. So I tried local AA and some other 12-step meetings like CA and GA (Cocaine Anonymous and Gamblers Anonymous). I didn’t share there much because drinking was not my real issue. I just listened

to what they said and I still identified with their addiction problems. Now I have 6 months of clean time.” (Interviewee #20, gamer)

By combining different meanings to construct unique game addiction discourse collectively, both loved ones and gamers learn how to integrate old discourse and new phenomenon as well as negotiate with their relationships. This transcendental sense-making tactic plays a significant role in narrowing the gap between gamer and the loved ones.

Overall, nurture and control dialectics were evident among the loved ones of gamers and they displayed various sub-strategies while selecting, vacillating, or transcending between the poles. Depending on their positive or negative control strategies, the gamers also showed diverse reactions to the controls. So far, tensions within and between a gamer and a loved one were discussed. Next, another set of dialectics will be explored that occurred in the online support groups for the gamers and the loved ones.

Expression –Privacy Dialectics in Online Support Groups

Both compulsive gamers and their loved ones use online support groups to seek informational support and emotional support. Since the online support groups are public forums, another dialectical tension emerged in their attempts to maintain privacy and to disclose their story. The fact anyone can simply search and track their online posts increases their concern for privacy. At the same time, they still needed to vent their feelings and connect with others who had been through similar situations, which increased their desire for expressing online. Interviewees showed different responses to the expression— privacy dialectic. Under selection strategy, several specific sub-tactics were found; engaging, policing, and promoting tactics were on the expression side,

whereas lurking was on the privacy side. In addition, two new tactics were found under vacillation strategy: dumping and trace-removing.

Engagement (disclosure). Some gamers and loved ones select expression over privacy. Their major motives behind their choice of the expression pole were threefold: (1) to communicate informational support about compulsive gaming problems and coping strategies, (2) to share emotional support to reduce stress and to get hope, (3) to maintain the community. The first and the second motives are obvious; the members of support group participate in the group and engage in communication on the forum by posting, replying, and upvoting. Interviewee #8 (mother of gamer) said she has posted several messages on the forum with detailed personal information in them (e.g., her financial situation, physical health condition, age, occupation, town) because she believed her voluntary self-disclosure strengthened her membership to the group. She said she had received many heart-warming comments that identify with her situation: *“I share my real name here. I am not that concerned about my identity or my story getting exposed...I am sure my coworkers or neighbors don’t come here..(Interviewee #8, mother of gamer)”*. By being openly vulnerable through posting private information online, she expresses her deep trust in the community and promotes her sense of belonging. This is an example of support group members who don’t mind expressing and disclosing who they are to some extent.

Policing. A new finding from the interviews who chose expression over privacy was maintaining the online community voluntarily. A few committed members’ voluntary efforts to police their online forum didn’t go unnoticed. A notable theme found from the interviews was gratitude and compliments toward certain members’ dedication

and initiatives. Many interviewees also thanked their groups for the informational, emotional, and companionship support they had received from the group. A few dedicated members in the group genuinely cared about their community, forum, and newcomers. For example, when spotting insensitive comments or problematic posts, some members voluntarily inspect the controversial poster's profile page to check the consistency of their previous posts, comments, or activity history. Through such policing behavior, interviewee #14 actually caught a couple of trolling gamers who had intentionally uploaded inappropriate triggers or hostile comments on the forum, and he singled out the problematic troll. This investigation example reflects how a committed member maintains the online community by actively utilizing online affordances such as poster's profile page and previous activity log. This community-patrol example shows emerging community norms and voluntary engagement, which can be seen as active *expression* of community-orientation rather than individual *privacy* preference.

Ambassadorship. Interestingly, some members were communicating with each other even outside the online forum through the YouTube channel, smartphone messenger application, one on one phone calls, and face-to-face meetings. Some old-time members became sponsors of gamers as they start a 12-step recovery program through which they talk on the phone one-on-one when they need immediate support. Such media multiplexity (Haythornthwaite, 2005) of social support communication is an active way of expression-selection strategy that cross the borders between anonymous online forum and other on/offline platforms. *"We have very powerful personal stories on our YouTube channel. We got some subscribers and comments... I think it is a great way to help newcomers... because there are many game addicts in denial..."* (Interviewee #12, gamer)

A dedicated moderator of one of the research sites, interviewee #19, has his own YouTube channel and he reveals his full name, face, and personal life in his video clips. He has already been exposed to several news outlets and keeps getting many invitations to guest talk opportunities and media interview requests. He says it is his mission to reach out to public to increase awareness of compulsive gaming issues and to promote visibility of game addiction recovery programs including his online support group. Such an ambassadorship was not rare throughout research sites, which is promising. Thus far, *expression* side on the expression-privacy dialectics was discussed. Next discussion focuses on the other side: *privacy* selection.

Silence (lurking). Lurkers are those who take advantage of reading messages in online community without having the stress of posting their own (Han et al., 2014; Preece et al., 2004). Even though most participants evaluated their support group positively, they reported many other users are not actively contributing new posts to the group forum. Some users valued their privacy and confidentiality very seriously, and some users are too shy to actively join the conversation. Interviewee #2, #15, #18, and #20 identified themselves as lurkers who only read posts sporadically. When asked why they have not posted anything yet, interviewee #15 said she had nothing new to offer to the forum, interviewee #2 found using the community difficult due to forum interface, and interviewee #18 was not familiar with the group yet, and interviewee #13 thought there were not that many active users who cared, and interviewee #20 thought the group was not that effective.

“When I have something to share, inside my head is like ‘Let’s post this...but wait, will anybody find it interesting?..... scrap it, nobody cares...’ Engagement is low

on this subreddit, first, there are not many subscribers...” (Interviewee #13, gamer)

Overall, these users were leaning toward the privacy pole on the spectrum of privacy – expression dialectics.

Dumper & trace-sweeper. Two new discoveries were found under a *selection* strategy category. Some users temporarily engaged in the forum at the beginning, but changed their status to dormant or drop out. Some users treated their account as “disposable.” Interviewee #17 (partner of gamer) mentioned there is a type of users who “dump” only one post on the forum on their very first day and abandon their account. Such “one-time users” never come back to the forum, despite receiving many replies to their post and many concerned members waiting to hear updates. According to interviewee #14 and interviewee #19, some individuals join the forum with a “throw-away account” and then disappear. This is strategic zigzag turn from short-term engagement (selecting expression) to long-term disengagement (selecting privacy).

“I use a pseudonym because I want to be able to run away when I feel bad. I don't want anyone knowing who I really am. I want to get better, but I don't want anyone to see me doing this. I have not considered leaving the fellowship yet, but I use a pseudonym so I can leave anytime I want without any guilt. This is probably not good, but I'm only starting...” (Interviewee #1, gamer).”

Such ‘single-pass’ users who dispose of one post and leave the group have another variation: “trace-sweeper” type. Such trace-sweeper type users delete their entire communication threads before they vanish from the forum, which was actually common on one of the research sites, QC (subreddit).

This might also be influenced by the unique culture of its hosting community Reddit, which is known for its high level of accessibility and as a low-threshold online forum that is open to the public. The “easy come, easy go” nature of QC might have influenced user’s identification with the support group; as found in the survey data, online gamers’ support group identification showed unpredicted result.

Both “dumper” and “trace-sweeper” strategies are different from simple selection strategy (e.g., choosing and maintaining either a lurker or a poster role) because they change their strategy *over time* to attend to either expression or privacy. Both dumper and trace-eraser type users value privacy, yet still want to express their feelings and situation to others cautiously. This privacy-expression dilemma creates interesting swift switches from *temporary* disclosure (expression) to *ready-to-runaway* (privacy) choices. Trace-sweeper suggests how online support group users are worried about their privacy considering the online forum’s wide accessibility and permanent archivability, which leads them to take advantage of the online forum affordances to edit or delete their post. This is a very proactive way to defend their privacy online, even though the online forum is an anonymous place. Those dumpers/trace-sweepers didn’t want to leave any traces online because they didn’t want to be vulnerable by disclosing their story online and they care about their online reputation seriously, which shows their privacy preference.

Apparently, having such ‘dine and dash’ users who do not follow up or come back to the group seems to be one of challenges online support groups commonly face. Interviewee #5 (gamer) articulated his disappointment in the low participation level in his support group: *“Not many stick around here. The forum seems to be little dead now and I miss support... Getting help is not free, it takes time, energy, and dedication.”* Retaining

new users and helping them feeling safe and trusting in the group seem to be an important issue the support groups faced. Given that the current study participants were recruited from online support groups, it was impossible to hear drop-out user's perspectives. One way to infer their dropout is referring to previous studies on 12-step support group dropouts (Kelly & Moos, 2003; Kelly, Kahler, & Humphreys, 2010). At one year following substance use treatment, 40% dropped out from 12-step recovery groups (Kelly & Moos, 2003) and the predictors of dropout include inconvenience of group meetings, discomfort with self-disclosure, or the group format (Kelly et al., 2010). Examining why and how dropouts feel uncomfortable in the online support group calls for future research.

Overall, gamer and loved one interviews showed similar macro tensions but different micro-strategies to manage the tensions. As expected, the offline relational conflict and online social support process were very intricate on two main dialectics: nurturing – controlling and expression–privacy. Next chapter will go over key findings again, and synthesize qualitative and quantitative results.

V. DISCUSSION

Drawing upon online survey responses of 103 gamers and 57 loved ones and interviews of 12 gamers and 8 loved ones, the current study tested associations among compulsive gaming, partner's control, offline relational conflict, online social support group participation, online support group identification, and the amount of online social support.

Summary of Quantitative Findings

Overall, 15 out of 18 hypotheses were supported (see Table 9). A gamer's compulsive gaming was positively related to control consistency of their loved ones, and the control consistency of loved ones led to lower relational conflict. A gamer's relational conflict was positively related to one's online support group participation, and the participation was positively associated with online social support. Online social support was positively related to support group identification. In addition, gamer's relational conflict mediated between the effects of received control consistency on online support group participation. Additional mediation analysis also found two paths to support group participation: (a) perceived *negative* partner control → relational conflict → online support group participation; and (b) perceived *positive* partner control → online social support → online support group participation. These mediation models explain two different mechanisms of online support group participation for compulsive gamers; (a) compulsive gamers join and use the support group to deal with interpersonal stress from their offline conflict with their partners who give them negative control, and (b) compulsive gamers also participate in the support group because they benefit from online

social support that was also correlated with positive control from their partners. Overall, this suggests compulsive gamers have two different motives: (a) to avoid relational conflict and (b) to receive more online support from the group.

For the loved ones, partner's gaming was positively related to their relational conflict and their control consistency. Their relational conflict, in turn, was positively associated with their online support group participation. Loved one's support group participation, online support group identification, and online social support were all positively correlated with one another. Loved one's relational conflict was also found to mediate between control consistency and online support group participation.

Summary of Qualitative Findings

All in all, the qualitative analysis demonstrated multi-layered dialectical tensions that arise from communication, both online and offline. Nurture — control tensions were found in the dyadic relationships between gamers and loved ones, whereas expression — privacy tensions emerged in their communication with other online support group users. Four main tension management strategies (selection, network separation, hybrid sense-making, and vacillation) and 11 nested strategies appeared to be widely used to attend their competing goals. Table 14 summarizes loved one's nurturing and controlling tactics and Table 15 suggests gamers' responses to the nurturing or controlling tactics. Even though most interviewees reported the online support groups were great sources of social support, their participation level and identification level varied, influenced in part by their competing desires between expression and privacy.

Connecting Quantitative and Qualitative Findings

Predictors of relational conflict. Surprisingly, gamers' perceptions of one's gaming were not related to their relational conflict with loved ones. Instead, the control consistency that gamers received from their loved ones was negatively associated with their relational conflict. In other words, consistent control strategies are related to lower relational conflict, which well-aligns with INC theory that coherent choice of either positive or negative control tactics and consistent use of the control strategies are beneficial in interpersonal relationships between addicts and their loved ones. When broken down, both positive control and negative control tactics were positively associated with relational conflict. This suggests the important role of partner's control in relational problems of gamers. It is an important finding that gamers' relational conflict is significantly influenced by partner's controlling tactics, rather than their own gaming. This unpredicted finding suggests that unhealthy controlling behavior (e.g., codependency, harsh parenting, blaming, manipulation, threatening, etc.) and inconsistency in control strategies are more salient predictors of relational problems between gamers and their loved ones, rather than gamer's gaming per se. This implies that compulsive gaming effect and recovery are also interactive and relational issues, not only a simple individual problem. Even when the gamers' compulsive gaming was improved, that did not guarantee decreased relational conflict. This means that relational conflict is not dependent only on gamer's gaming behavior. Partner's interaction (e.g., negative and positive controls, and consistency between those control tactics) was, in fact, an important predictor of both relational conflict and online support group participation for gamers. This finding suggests that compulsive gamers are influenced by their

partner's controlling behavior significantly. When gamers are aware of the partner's controlling patterns and their relational conflict patterns, the awareness might offer useful insight into more fundamental problems and solutions to their relationship problems. When approaching gaming effects and recovery in future studies, the relationship and communication with their loved ones needs to be examined in more detail. Moreover, relational conflict mediated the effects of negative partner-control on gamer's online support group participation, which again suggests how loved ones' control motivates gamers to seek and rely on online support networks.

Loved ones' perspectives were slightly different than those of the gamers; their gaming partner's compulsive gaming was positively related to their relational conflict and their own control consistency as predicted, but their control consistency was not associated with relational conflict. Loved one's relational conflict also mediated between control consistency and loved one's support group participation. A notable difference between those two groups (i.e., H1a rejected and H3b rejected) implies that each group attribute one's partner's behavior to their relational conflict. In other words, the gamer's relational conflict has a direct relationship with one's perceived partner-control consistency, while overlooking one's own compulsive gaming. Loved one's relational conflict was also directly influenced by their perception of their gaming partner's compulsive gaming, not by their own control strategies. This suggests how relational conflict is differently constructed through interactions in dyadic relationships.

Overall, both groups showed that partner's behavior patterns play an important role in relational conflict; and the relational conflict mediates between loved one's control consistency and support group participation for both gamers and loved ones. This

implies that educating the loved ones of gamer about compulsive gaming and consistent use of proper control tactics will be a useful way to improve their interpersonal relationship and to foster online support group participation.

Two paths to support group participation. In compulsive gaming recovery, offline partner-control and online social support were found to be a dual process. As results of mediation analysis, two paths were found: (a) gamer's relational conflict mediates the effects of *negative* partner-control on online support group participation; and (b) gamer's online social support mediates the effects of *positive* partner-control on online support group participation. In other words, received negative control has an indirect effect on support group participation mediated by relational conflict, whereas received positive control has an indirect effect on support group participation mediated by online social support. This suggests two different driving forces of online support group use: (a) *offline* relational conflicts that are tied to partner's negative control, and (b) *online* social support that is linked to partner's positive control. This implies both negative factors and positive factors play important roles in predicting online support group participation.

Participants in this study voluntarily used online support groups (a) to manage their gaming related problems and (b) to get online social support. Using another online space to cope with one's online gaming compulsion is an interesting paradox. Metaphorically, it is like alcoholics meeting at a bar to have an AA meeting. The seemingly ironic relationship in the mechanism of online social support for compulsive gamers revealed that (a) relational conflict within a gamer's offline relationship and (b) the amount of social support received from the online support network were both

important mediators that impact a gamer's online support group participation. Online gaming, offline partner-control, offline relational conflict, and online social support – all these forces were complexly entangled within participants' offline and online communication.

Roles of group identification. Traditionally, member identification plays a central role in understanding organizational decision making and participation in formal organizations (Tompkins & Cheney 1985). The current study found that the non-work setting of online support groups showed different roles of group identification in online group participation. It was unexpected that compulsive gamers' online group identification was not related to their participation in the group (rejected **H6a**). When carefully examining the breakdown of gamers' group identification subscale, their mean score of the affective identification with the group was 4.86 out of 7, behavioral identification scores were 4.71, and cognitive identification was 4.51, which offers a clue how multiplex and complex gamers' group identification is. Gamers' emotional bond with the online support group was higher than their behavioral and cognitive identification with the group, which means that the extent to which gamers 'like' the group members is higher than the extent to which they actually 'think' they are similar or they need to 'contribute' to the group. To examine this subscale difference further, I ran a post-hoc test. As shown in Table 17, affective identification ($\beta = -.58, p < .001$) was negatively associated with group participation, whereas behavioral identification was not significantly related, but cognitive identification ($\beta = .26, p < .05$) was positively associated with group participation ($R^2 = .25, F(3,99) = 12.37, p < .001$). This suggests that simply 'liking' group surprisingly lowers the group participation, but seeing the group

similar to oneself increases the group participation. This implies the importance of cognitive identification process such as thinking they are alike and feel they belong to the group in predicting the level of participation in the group.

The finding also implies that strong group identification may not necessarily guarantee active participation in the online support group, and vice versa. Even those with high group identification might participate in the group less frequently because their gaming problems are improved thanks to the group. One possible explanation on this finding is that some interviewees who believed their gaming problem was improved (or believed they were recovered enough) started dis-identifying with some group members such as struggling newcomers or recovering gamers who still report severe problems. In a similar context, prior substance addiction recovery support group research has discussed that adoption and transformation of “addict” identity is very complex process (Eastland, Herndon, & Barr, 1999; O’Halloran, 2005) because addict identification process involves with unique discursive requirements such as acknowledging ‘illness’ (Stommel & Koole, 2010), confessional testimonials (Greco, 1999), and reinterpreting former lifestyle and redefining sense of self (Humphreys, 2003; McIntosh & McKeganey, 2000). Likewise, compulsive gamers’ identification with their support group might also be socially constructed through diverse mechanisms, which results in unexpected disconnection between gamers’ identification with the group and group participation.

The disassociation between group participation and group identification of gamers can be also supported by the qualitative findings of lurker, dumper, and trace-remover type users who use the forum despite low attachment or commitment to the group. As discussed in the qualitative finding chapter, support group users (e.g., dumper or trace-

remover type) who were concerned with their privacy often *temporarily* participated in the forum and then stopped contributing to the group. Lurkers who do not post anything but still read forum posts silently also explains the existence of compulsive gamers who still identify with the support group yet don't bother contributing to the forum.

Unlike conventional organizational environment (e.g., professional or institutional), recovery support groups show more contextual, emergent, and situated identification process. It is also possible to distinguish support group users who participate in the online forum with 'self-interest' or 'community-interest.' Simply put, support group users who have more individualistic needs (e.g., self-help, informational support) can be lurking or cleaning their digital footprint to save their face and ensure privacy, whereas other users who value collectivistic needs (e.g., companionship, emotional support) might be more attached and committed to the support group by actively posting, commenting, promoting, and voluntarily patrolling in the community.

“Their advice is like generic; I mean if someone says to me, ‘exercise, get hobby, hangout with friends instead, focus on your studies or job, etc etc..’ It doesn't really help me. Reading stories of other gamers and how their life has gone downhill just scares me. The purpose of this subreddit is game addicts talk about their problems and other gamers share their input from their own experience. And when they quit finally, then this subreddit is not needed anymore. I will probably unsubscribe it when it is not relevant to my life.” (Interviewee #14, gamer)

“Game addiction is a lonely path, a lot of people don't understand. It's really hard to find someone to share these feelings and thoughts. I tried this (recovery) alone, but i couldn't do it myself alone. This 'community' has made it possible. I'm grateful for the fellowship and friendship that help me stay sober. I thank all of them for being there for me..” (Interviewee #12, gamer)

Interviewee #14 seems to consider online social support as object or resource that serves his personal recovery goal, whereas interviewee #12 regards the social support as embedded in the community and members. For some members, receiving online support from the group is a main instrumental purpose, whereas some other types bond with the group and regard communicating in the group per se as a purpose while receiving support as a natural byproduct of the interaction in the community.

Meanwhile, loved ones' support group participation was positively related to group identification (confirmed **H6b**). This is a reasonable finding because all the loved one interviewees said they received significant amount of emotional support and comfort from the group and the support helped reducing their stress, guilt, and anger. As Wang and colleagues (2012) found, emotional support received from the support group is significantly tied to commitment to the group. It is clear that the loved ones of gamers who use the forum more actively tend to receive more support from their group and identify with the group strongly. In a similar context, mothers are known to use online communities as their social and emotional outlet that they may not have access to otherwise. In online groups for mothers, they bond with each other through discussing their motherhood and venting their frustration or anxiety related to their caregiver role in the family (Schoenebeck, 2013). This strengthens their identification with the mother group. This gendered community practice and cohesive identification process is similarly found in the loved ones of gamers. By participating in the support group for loved ones of compulsive gamers, the loved ones enact unique social identity: game widow (Kays, 2008; Lianekhammy & van de Venne, 2015; Northrup, & Shumway, 2014). Game widows share varied coping mechanisms such as informational support (e.g., divorce

information, addiction information) and emotional support (Lianekhammy & van de Venne, 2015). The findings from previous scholarship go well in line with the current study's findings.

Overall, the discordance between gamers' and loved ones' support group identification outcomes (rejected **H6a**, & confirmed **H6b**) suggests that group identification in online support groups is complex and changing *process*, just as member identification in (traditional) organization is also dynamic, ongoing, and multiple *states* (Pratt, 2000; Scott, 1997).

Theoretical Implications

By examining how research participants respond to two overarching relational dialectics, the current study uncovered complex intersections of compulsive gaming, partner-control, relational conflict, and online support group dynamics, spanning offline and online communication boundaries. The findings show that partner control has an important influence on relational conflict directly, and another indirect influence through the relational conflict. Notably, more consistent control exerted by non-gaming partner (loved ones) is related to lower relational conflict of compulsive gamers (**H3a**), which supports Inconsistent Nurturing as Control theory (Le Poire, 1995). Given that the majority of the INC theory literature tend to focus on problematic drinking in relationships (Le Poire, 2004), the findings of the current study contribute to INC theory literature by extending its application to compulsive gaming context. Confirming two different paths of positive and negative control to online support group participation also contributes to INC theory scholarship by suggesting different roles played by positive control and negative control tactics in gamer's recovery attempts, respectively. The

current study also found the important role of the loved ones' control strategies in the gamer's relational conflict and their action to solicit social support online. This implies that integrating the partner can widen our perspectives in understanding compulsive gaming impact and recovery process, which contributes to problematic internet use scholarship and interpersonal communication.

Given that prior studies on compulsive gaming fall short of illustrating the complex interaction between gamers and their loved ones, the current application of interpersonal communication theories to compulsive gamers' relationships offers a new lens to approach compulsive gaming in communication studies.

Findings on the lurker, dumper, and trace-remover user types also offer new insights into anonymous support group scholarship as well. Unlike the Social Identity model of Deindividuation Effects (Postmes et al., 1998; 2000; 2005), which assumes anonymity and depersonalization in online settings amplify online group identification, the current study found that a gamer's online support group identification was not necessarily proportional to the group participation level. Some users may take advantage of online group structure (e.g., anonymity, public forum affordance) to just 'taste' a small bite of group experience, rather than 'buying' the entire piece. Such complex association between anonymity, online group identification, and online group engagement or disengagement needs further research.

Practical Implications

Given that professionals and treatment that specialize in internet related disorders are still limited (Chrismore et al., 2011), online support networks for online gamers and their loved ones are valuable resources. The current study contributes to the game

addiction treatment field by confirming the positive relationship between online support group participation and the amount of online social support. However, whether the social support actually brings behavioral change (e.g., quitting gaming) and individual well-being (e.g., life satisfaction, physical and mental health) is still unknown, which calls for future research.

The current study also sheds light on the important role of the loved ones in the gamer's relational conflict and their action to seek and participate in alternative online support networks. This finding actually resonates with prior scholarship on substance addiction recovery; according to a meta-review study by Carballo and colleagues (2007), about half of recovering addicts commonly reported their family and significant other were main reasons for their changes and seeking help, which confirms the crucial role of the loved ones. Loved one's control patterns on gamers turn out to influence gamers' relational conflict as well as gamer's engagement levels in the online support group, which implies that the loved ones should be seriously considered when designing co-education and co-therapy intervention techniques in compulsive behavior recovery programs. Therapists, addiction counselors, and researchers should investigate specific control tactics of loved ones more closely to provide a more inclusive and holistic picture of compulsive gaming and intervention mechanisms. As scholarly understanding and public awareness on compulsive gaming and recovery program increase, so will our ability to provide effective support for compulsive gamers who need help.

In addition, the current study has implications in terms of online support group design. Given that some interviewees complained about high turnover in the community, moderators of the online support group need to consider ways to sustain the users and

facilitate their contribution. For instance, support group designers can test whether limiting users' ability to delete or edit their messages or comments easily changes user participation levels, contribution patterns, and membership turnover.

Limitations and Future Research

Given that compulsive gaming recovery is a new phenomenon, the current study explored correlational relationships rather than causal relationships. To overcome the shortcoming of a cross-sectional survey design, a longitudinal research design such as time-lagged survey should be implemented in follow-up research. The biggest limitation of this study is the small number of survey participants (103 gamers and 57 loved ones) due to the particularity of topic and specifically aimed population (i.e., four specific research site users).

Moreover, compulsive gaming was operationalized using subjective perceptions about one's gaming experience, which might have created confusion to some gamer participants who have been abstinent for a while (thus not reporting serious compulsive gaming problems). Therefore, future studies should include actual behavioral measures such as the most recent gaming experience in addition to the subjective perceptions of one's compulsive gaming. Including such objective constructs might help capture more detail that is missing in the current study.

Due to low participation, the current study could not recruit many loved ones, which caused imbalanced samples. The current study recruited individual samples instead of paired couples due to respondents' low interest in joint interview. In future study, recruiting dyadic samples and using paired samples as a unit of analysis will help examining actor-partner interdependence effects and explaining how compulsive gamers

and their partners experience relational tensions differently. In doing so, several discrepancies between gamers and loved ones' responses (e.g., H1, H3 and H6) can be answered more clearly. Moreover, examining group level communication and conducting systemized group level analysis will be new directions in future study to show the bigger picture in online support community dynamics.

In addition, the current study targeted mainly U.S. residents, but foreign gamers' experiences across different countries might show different results. Given the fact that compulsive online gaming problems span different countries and cultures, follow-up research should be expanded to include gamers from non-English speaking countries as well. To address all these limitations, replicating this study in different contexts using more samples will be a next step to enhance generalizability of research and validity of the design. Also, more detailed follow-up investigation of the conditions under which social support and social control elicit functional versus dysfunctional behavioral changes should be another direction for a future study.

Conclusion

The current study captured intertwined processes among *unhealthy online* behavior (compulsive online gaming), *offline* interpersonal dynamics, and *healthy online* behavior (online social support). The findings show a bridging model of compulsive gaming, partner-control, relational conflict, online support group participation, and online social support. It was meaningful to discover two mechanisms of online support group participation: a *negative* offline relationship path and a *positive* online social support path. This dual mechanism poses a new framework to inform knowledge of the compulsive gaming recovery process that integrates offline relational conflict and online social

support. Moreover, the current study suggests *relational framing* of compulsive gaming problem and recovery process. It was found that compulsive gaming and recovery are deeply embedded in relational context with both *offline* and *online* settings. Relationship and communication among compulsive gamers and their loved ones are complex phenomena on two dialectical spectra: nurture – control and expression – privacy at both micro (dyadic) and macro (group) levels, across offline and online.

Notes

[1] APA DSM-5 guidebook describes ‘internet gaming disorder’ as a “persistent and recurrent use of the internet to engage in games, often with other players, leading to clinically significant impairment or distress” (Black & Grant, 2014, p.476). DSM-5 proposed nine criteria for online gaming disorder: (a) *preoccupation* with internet games (e.g., salience of gaming), (b) *withdrawal* symptoms of irritability, anxiety, or sadness when internet gaming is taken away, (c) the development of *tolerance*, (d) unsuccessful attempts to control one’s gaming behavior (e.g., *relapse*), (e) *loss of interest* in other activities, (f) continued *excessive use* of internet games despite knowledge of psychosocial problems, (g) *deceiving* other people regarding the amount of gaming, (h) using games to *escape or relieve a negative mood*, (i) jeopardizing or losing a significant relationship, educational, or career opportunity because of gaming (*harm*). By using these nine core criteria, DSM-5 categorizes the online gaming disorder into three levels: mild, moderate, and severe. These diagnostic criteria have considerable overlap between substance use or gambling disorder. Notably, DSM-5 also distinguished internet gaming disorder from other online activities such as online gambling or online pornography use.

[2] Openness to experience is one of five-factors in the NEO-FFI (Costa & McCrae, 1992) personality inventory, and includes openness to fantasy, aesthetics, feelings, actions, ideas, and values (Kuss, Griffiths, & Binder, 2013).

[3] In previous social support research, informational, emotional, tangible, esteem, and network support have been discussed as major types of social support (Cutrona & Russell, 1990). Informational support includes instructions, advice, referrals, and situation appraisal. Emotional support refers to all attempts to express empathy, understanding, sympathy, caring, closeness, affection, and encouragement. Tangible support means instrumental assistance or physical actions such as loaning someone money or offering physical labor. Esteem support provides a sense of acceptance, relief, and assurance of worth by validating the support recipient’s self-concept, efficacy, self-esteem, importance, and competence through compliments. Network support means structural connections that broaden the recipient’s social network, in which the recipient has access to others with similar interests or situations.

[4] Obviously, the fit between the type of desired support (the needs of the support seeker) and the type of actually received support (the resources of support providers) is crucial in social support communication (Cutrona & Russell, 1990; Goldsmith, 2004). Optimal match of social support brings positive outcomes in interpersonal relationships as well as mental and physical health (Cutrona & Russell, 1990; Turner, Grube, & Meyers, 2001).

[5] In the analysis, relational conflict was not treated as relationship-level variable because the unit of survey recruitment and the unit of survey analysis are individuals, not dyads. Two different groups of survey participants (gamers vs. loved ones) were separately recruited

from different research sites (QC subreddit, GAA vs. GA). Both gamers and the loved ones received an identical relational conflict measure; their scores, however, were not linked in the analysis because the respondents were not necessarily couples that share relationships with another survey respondent.

[6] Codependence has not been studied in communication research (except Gemin, 1997), but common in addiction and psychology research (Calderwood & Rajesparam, 2014; Dear & Roberts, 2005; Marks et al., 2012). The term ‘codependent’ has been used in substance addiction studies to refer to an individual who is significantly affected by his/her partner's problematic behavior and also has a strong desire to control the problematic behavior (Calderwood & Rajesparam, 2014; Gemin, 1997a; 1997b). The term ‘codependency’ refers to a symptom that a person becomes dysfunctional as a result of being in an unhealthy relationship with an addict (Beattie, 2008). In effect, the codependent tends to (a) pay significant attention to others’ behavior, opinions, and expectations (i.e., *external focus*), (b) neglect one’s own needs to focus on meeting the needs of others (i.e., *self-sacrifice*), (c) believe in one’s capacity to fix others’ problems and control their behavior (i.e., *interpersonal control*), and (d) deliberately suppress or hide one’s emotion (i.e., *emotional suppression*) (Dear & Roberts, 2005; Le Poire, 2004; Marks et al., 2012). As a result, codependents are likely to share the responsibility for the unhealthy behavior of one’s partner, make their well-being contingent on others’ behaviors, and they often end up experiencing anxiety, depression, and compulsion (Le Poire, 2004) due to their boundary distortion (Beattie, 2008).

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Appendices

Table 1. Demographic characteristics

		Gamers (N=103)		Loved Ones (N=57)	
		N	%	N	%
Gender	Male	90	87.4	5	8.8
	Female	13	12.6	49	86.0
Age	18-20	12	11.7		0
	21-25	29	28.2	10	17.5
	26-30	29	28.2	17	29.8
	31-35	24	23.3	18	31.6
	36-40	3	2.9	2	3.5
	41-45	3	2.9	4	7.0
	46 or older		0	3	5.3
Education	Some high school	2	1.9	1	1.8
	High school degree	13	12.6	3	5.3
	Some college	29	28.2	30	52.6
	Associate degree	20	19.4	10	17.5
	Bachelors degree	27	26.2	10	17.5
	Masters or Doctorate	9	8.7	2	3.5
Employment	Full time job	64	62.1	41	71.9
	Part time job	13	12.6	6	10.5
	Student	18	17.5	1	1.8
	Unemployed	2	1.9		0
	Homemaker		0	5	8.8
Race/Ethnicity	African American	6	5.8		0
	Asian/Pacific Islander	10	9.7	5	8.8
	Hispanic/Latino	9	8.7	6	10.5
	Caucasian	59	57.3	40	70.2
	Other	16	15.6	1	1.8
Marital status	Single	41	39.8		0
	Casual dating	10	9.7	1	1.8
	Serious relationship	3	2.9	3	5.3
	Married	42	40.8	48	84.2
	Divorced/separated	1	1		0
	Widowed	1	1		0
Children	None	66	64.1	15	26.3
	1 Child	28	27.2	29	50.9
	2 Children	3	2.9	5	8.8
	3 or more		0	3	5.3

Table 2a. Descriptive Statistics of Compulsive Gamers (N=103)

	N	M	SD	SE	Reliability	Minimum	Maximum
Partner's gaming	103	5.31	.80	.08	.897	1.27	7.00
Negative control	100	4.34	1.17	.12	.927	1.00	6.60
Positive control	101	4.41	1.35	.13	.957	1.00	6.80
Control consistency	100	.63	.84	.08	-	.00	4.80
Relational conflict	102	4.20	1.28	.13	.907	1.00	6.80
OSG participation	103	5.10	1.70	.17	.911	1.00	9.00
Online social support	103	4.47	1.23	.12	.966	1.00	7.00
OSG identification	103	4.68	.70	.07	.799	3.40	6.53

Table 2b. Descriptive Statistics of the Loved Ones of Gamers (N=57)

	N	M	SD	SE	Reliability	Minimum	Maximum
Partner's gaming	57	4.41	1.41	.19	.967	1.60	7.00
Negative control	57	4.29	1.23	.16	.878	1.80	5.80
Positive control	57	4.00	1.28	.17	.935	1.30	6.80
Control consistency	57	.81	.80	.11	-	.00	3.20
Relational conflict	57	4.48	1.24	.16	.885	1.40	6.60
OSG participation	56	4.71	1.91	.25	.933	1.33	7.67
Online social support	55	4.03	1.38	.18	.960	1.00	5.73
OSG identification	54	4.73	0.89	.12	.909	2.33	5.87

Table 3. Independent Sample t-Test

	Gamers (N=103)		Loved Ones (N=57)		<i>t</i>	df
	M	SD	M	SD		
Compulsive gaming	5.31	.80	4.41	1.41	4.45***	76.429
Negative control	4.34	1.17	4.29	1.23	NS	158
Positive control	4.41	1.35	4.00	1.28	1.873	158
Control consistency	.63	.84	.81	.80	NS	158
Relational conflict	4.20	1.28	4.48	1.24	NS	158
OSG participation	5.10	1.70	4.71	1.91	NS	158
Online social support	4.47	1.23	4.03	1.38	2.06*	158
OSG identification	4.68	.70	4.73	.89	NS	95.719

Note. Significance level (2-tailed): $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4a. Bivariate Correlations Among Study Variables (Gamers N=103)

	1	2	3	4	5	6	7	8
1 Compulsive gaming		-.13	-.05	.32**	-.09	-.05	.14	.41***
2 Negative control behavior			.66***	-.31**	.59***	.50***	.38***	-.15
3 Positive control behavior				-.24*	.28**	.40***	.53***	-.06
4 Control consistency					-.35***	-.25*	-.23*	.31**
5 Relational conflict						.65***	.15	-.39***
6 Online support group participation							.54***	-.34***
7 Online social support								.10
8 Online group identification								

Note. Significance level (2-tailed): * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4b. Bivariate Correlations Among Study Variables (Loved Ones N=57)

	1	2	3	4	5	6	7	8
1 Partner's gaming		.43**	.10	.54***	.73***	-.24	-.14	.28*
2 Negative control			.61***	-.07	.68***	.48***	.37**	.73***
3 Positive control				-.39**	.38**	.46***	.65***	.68***
4 Control consistency					.37**	-.56***	-.65***	-.29*
5 Relational conflict						.07	.12	.48**
6 Online group participation							.71***	.61***
7 Online social support								.63***
8 Online group identification								

Note. Significance level (2-tailed): * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5. Standardized Regression Coefficients (β) for Relational Conflict

Variables	Compulsive Gamers		Loved Ones	
	Step 1	Step 2	Step 1	Step 2
Compulsive Gaming	.03	.01	.74***	.71***
Control Consistency	-.36***	-.21*	-.03	.17
OSG Participation		.59***		.34**
<i>F</i>	7.01**	26.35***	30.06***	26.97***
<i>df</i>	2, 100	3, 99	2, 54	3, 53
<i>SE</i>	.95	.76	.70	.65
Adjusted R^2	.11	.43	.51	.58
ΔR^2	.12	.32	.53	.08

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6. Standardized Regression Coefficients (β) for Control Consistency

Variables	Compulsive Gamers		Loved Ones	
	Step 1	Step 2	Step 1	Step 2
Compulsive Gaming	.32**	.29**	.54**	.58*
Relational Conflict		-.33***		-.05
<i>F</i>	11.58**	13.09***	22.55***	11.13***
<i>df</i>	1, 101	2, 100	1, 55	2, 54
<i>SE</i>	.95	.90	.85	.86
Adjusted R^2	.09	.19	.28	.27
ΔR^2	.10	.11	.29	.00

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7. Standardized Regression Coefficients (β) for Support Group Participation

Variables	Compulsive Gamers		Loved Ones	
	Step 1	Step 2	Step 1	Step 2
Relational Conflict	.64***	.60***	.07	-.30*
OSG Identification		-.10		.76***
<i>F</i>	68.42***	35.15***	.276	21.26***
<i>df</i>	1, 101	2, 100	1, 55	2, 54
<i>SE</i>	.78	.77	.77	.59
Adjusted R^2	.40	.40	-.01	.42
ΔR^2	.40	.01	.01	.44

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 8. Standardized Regression Coefficients(β) for Support Online Social Support

Variables	Compulsive Gamers		Loved Ones	
	Step 1	Step 2	Step 1	Step 2
OSG Participation	.54***	.65***	.71***	.53***
OSG Identification		.32***		.31**
<i>F</i>	41.23***	30.48***	56.55***	35.10***
<i>df</i>	1,101	2,100	1,55	2,54
<i>SE</i>	.85	.80	.71	.67
Adjusted R^2	.28	.37	.50	.55
ΔR^2	.29	.09	.51	.06

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 9. Hypothesis Test Result Summary

Hypotheses		Result
H1a	Gamer's compulsive gaming is positively related to gamer's relational conflict.	Not confirmed
H1b	Gamer's compulsive gaming is positively related to the loved one's relational conflict.	Confirmed
H2ab	Gamer's compulsive gaming is positively related to the loved one's control consistency.	Both confirmed
H3a	Loved one's control consistency is negatively related to gamer's relational conflict.	Confirmed
H3b	Loved one's control consistency is <i>negatively</i> related to their relational conflict.	Not confirmed
H4a	Relational conflict is positively related to online support group participation.	Confirmed
H4b	Relational conflict is positively related to online support group participation.	Confirmed
H5a	Gamer's online support group participation is positively related to the amount of social support they received from the group.	Confirmed
H5b	Loved one's online support group participation is positively related to the amount of social support they received from the group.	Confirmed
H6a	Support group identification is <i>positively</i> related to gamer's online support group participation.	Not confirmed
H6b	Support group identification is positively related to loved one's online support group participation.	Confirmed
H7ab	Group identification is positively related to the amount of social support received from the group.	Both confirmed
MH1a	Relational conflict mediates the relationship between consistent control (by loved ones) and gamer's online support group participation.	Confirmed
MH1b	Relational conflict mediates the relationship between consistent control (by loved ones) and loved one's online support group participation.	Confirmed
MH2	Relational conflict mediates the relationship between negative control (by loved one) and gamer's online support group participation.	Confirmed
MH3	Online social support mediates the relationship between positive control (by loved one) and the gamer's online support group participation.	Confirmed

Table 10. Standardized Regression Coefficients (β) for Support Group Participation

Variables	Gamers (MH1a)		Loved Ones (MH1b)	
	Relational Conflict	OSG Participation	Relational Conflict	OSG Participation
Control				
	-.35***	-.03	.46**	-.68***
Consistency				
Relational Conflict		.63***		.32**
<i>F</i>	14.06***	33.95***	8.60**	18.16***
<i>df</i>	1, 101	2, 100	1, 55	2, 54
<i>SE</i>	.89	.61	.88	.79
<i>R</i> ²	.12	.40	.14	.40

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 11. Two Mediation Paths for Gamers' Online Support Group Participation

Variables	Model 1		Variables	Model 2	
	Relational Conflict	OSG Participation		Online Support	OSG Participation
<i>Negative Control</i>	.59***	.19*	<i>Positive Control</i>	.53***	.16
Relational Conflict		.53***	Online Support		.45***
<i>F</i>	52.82***	37.31***	<i>F</i>	39.71***	22.24***
<i>df</i>	1, 101	2, 100	<i>df</i>	1, 101	2, 100
<i>SE</i>	.66	.58	<i>SE</i>	.72	.71
Adjusted <i>R</i> ²	.34	.43	Adjusted <i>R</i> ²	.28	.31

Note. Standardized regression coefficients (β) are displayed. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 12. Interviewee table

#	Relationship with Gamer	Gender
1	Self (compulsive gamer)	Male
2	Wife	Female
3	Self	Male
4	Self	Male
5	Self	Male
6	Self	Male
7	Wife	Female
8	Mother	Female
9	Daughter	Female
10	Self	Male
11	Mother	Female
12	Self	Male
13	Self	Male
14	Self	Male
15	Wife	Female
16	Self	Male
17	Friend	Female
18	Husband	Male
19	Self	Male
20	Self	Male

Table 13. Dialectical Tensions and Communicative Responses

Dialectics	Tension management Strategies	
	Loved Ones	Gamers
Nurture – Control <i>Offline relational conflict at Dyadic context</i> <i>Dialectical tension internal to the relationship</i>	Selection: Choosing either nurturing or controlling side and employing specific strategy (see Table 14 for detail) Vacillation: Going back and forth between nurturing role and controlling goal	Selection: In response to partner's nurture or control, gamers choose following tactics: denial, deception, defense, accommodation, transformation. (See Table 15 for detail)
	Network separation: Reaching out to like-minded others online, sharing only on online support group, not with offline partners	
	Hybrid sense-making: Reframing pre-existing substance addiction discourses to make sense of their gaming problems. Synthesizing and adapting 'old' addiction research and recovery program (e.g., AA, neurochemistry approach) to their 'new' gaming issues.	
Expression – Privacy <i>Online support group context</i>	Expression selection: <ul style="list-style-type: none"> - Engagement (disclosure): Committed to the online support forum by actively posting, commenting, and upvoting - Policing: Examining other users' posts and profile to screen problematic users (trolls) in order to maintain the community safe - Ambassadorship: The most active disclosure strategy. Exposing one's identity both online and offline to reach out to more people who need help. 	
	Vacillation: <ul style="list-style-type: none"> - Dumper: Using the group only one-time to disposing their imminent issues and never coming back to the forum/group. - Trace-remover: Cleaning one's entire trace by deleting all comments or posts that they made before. 	
	Privacy selection: <ul style="list-style-type: none"> - Silence (lurking): Not actively posting or commenting on the forum. Still gaining online social support by quietly observing others interaction. 	

Table 14. Nurture vs. Control Micro Strategies by the Loved Ones

Category	Strategies	Example	Underlying reason
Nurture	Reinforcing	Gaming together	To spend time together
	Enabling	Taking over chores or responsibility to let the gamer keep gaming comfortably	Feel responsible or guilty, unconditional love despite unfair sacrifice, power dynamics
	Bargaining	Setting very basic rules about gaming (e.g., curfew)	Compromise by lowering expectations
	Prioritizing	Focusing on superordinate goal (e.g., studying, job)	Distracted by other goals
	Naïve optimism	Minimizing problems and believing it will change easily	Lack of understanding, common for early phase
	Denying	Indifferent or ignoring the gaming and related problems	Trying to act normal, to avoid confrontation
Positive control	Discussing	Direct and rational conversation	To understand each other
	Inspiring	Motivating messages	To empower the gamer
	Complimenting	Being proud of progress	Positive reinforcement
	Offering alternatives	Introducing new hobbies	To substitute for gaming
	Bribing, luring	Gifting (e.g., toy, date, pet..)	To give incentives
	Resetting	Providing new environment (e.g., boarding school, camps)	To restart
	Direct referral	Suggesting therapy	Trusting professional help
Negative control	Spying	Constantly monitoring the gamer	Not trusting the gamer
	Blocking games	Removing game, computer, or internet	To physically intervene
	Threatening	Scaring the gamer, threatening to leave, divorce, or to kick out	To intimidate; to show leverage
	Manipulating & shaming	Making the gamer feel bad and guilty	Due to revenge, anger, codependency
	Punishing	Taking privileges away	To give pressure; to exert power
	Using violence	Exerting verbal or physical violence	To express anger and aggression

Table 15. Compulsive Gamers' Communicative Reponses to their Loved Ones

Category	Responses	Example
(Intrapersonal)		
Attributing	Internal attribution	Attributing one's gaming problem to one's personality or health (e.g., addiction history, competitive or sensation-seeking personality, OCD, ADHD, neurochemical imbalance..)
	External attribution	Attributing one's gaming problem to one's environment. (e.g., blaming parents' enabling, negligent/dysfunctional family, bullied childhood, trauma, isolation, triggers..)
(Interpersonal)		
Reaction to partner's nurturing	Overlooking	Not noticing one's gaming problem or unhappy loved ones' suffering
	Rationalizing	Justifying and keep using gaming as a coping mechanism to deal with one's other problems (e.g., escapism, to avoid pain or anxiety, to fill the void after losing something, to fit in or please gaming peer-group, to pursue game developer career..)
	Being parasitic	Taking the loved ones for granted, being spoiled.
(Interpersonal)		
Reaction to partner's controlling.	Defense/backfire	Too frequent or too intense negative control results in resistance, or even deterioration. Refusing to stop gaming.
	Denial/avoidance	Ignoring partner's request or withdrawing from interaction.
	Deception	Hiding or lying about one's gaming
	Accommodation	Quit gaming in response to the request of partner due to obligation or consequences. Reservation or withdrawal symptoms often found.
	Transformation	Quit gaming as result of internalized control and self-regulation, the most fundamental and deepest change based on affection or gratitude toward the loved one

Table 16. Correlations Among Group Identification Subscale and Participation

	1	2	3	4
1. Affective Identification	1	.503***	.543***	-.488***
2. Behavioral Identification		1	.661***	-.224*
3. Cognitive Identification			1	-0.124
4. Participation				1

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 17. Regression Coefficients for Gamer's Group Participation (post-hoc)

Variables	Online Support Group Participation
Affective Identification	-.58***
Behavioral Identification	-.11
Cognitive Identification	.26*
<i>F</i>	12.367***
<i>df</i>	3, 99
<i>SE</i>	.87
R^2	.25

Figure 1. Conceptual Framework

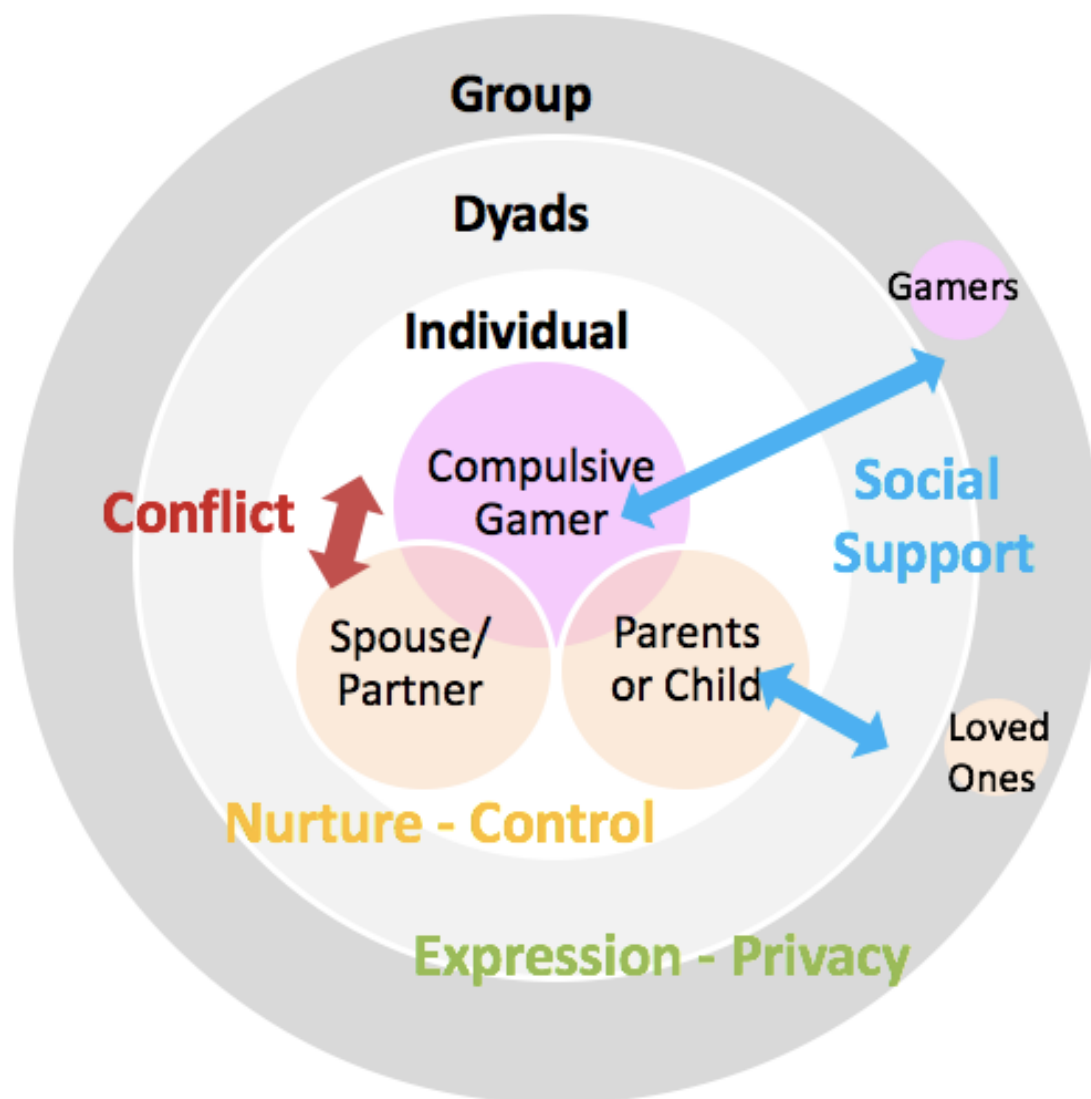


Figure 2a. Research Model for Gamers

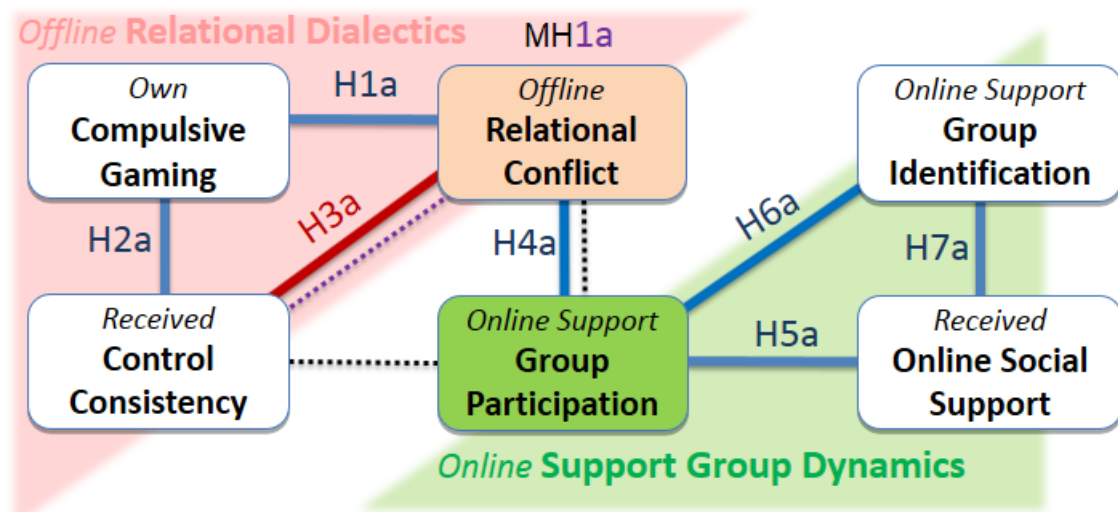


Figure 2b. Research Model for the Loved Ones of Gamers

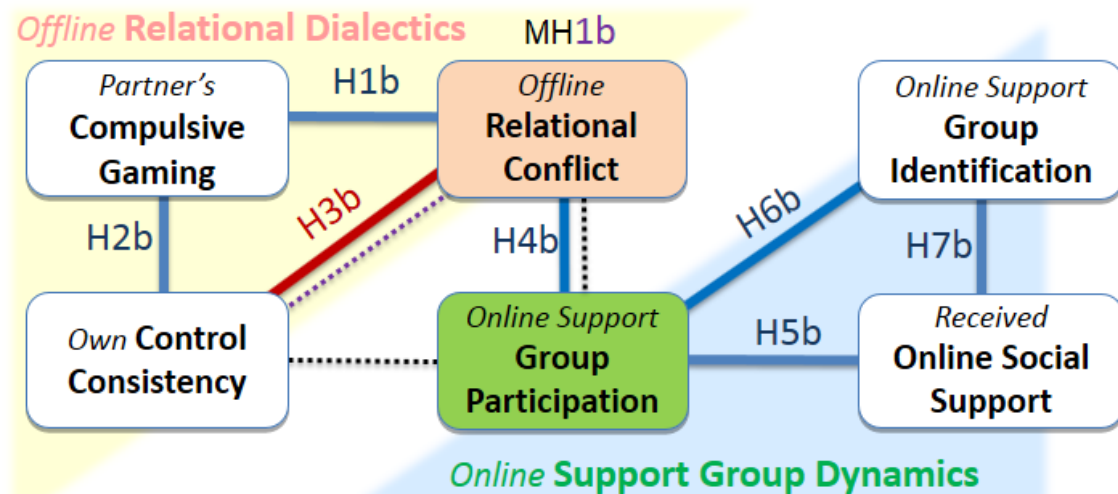
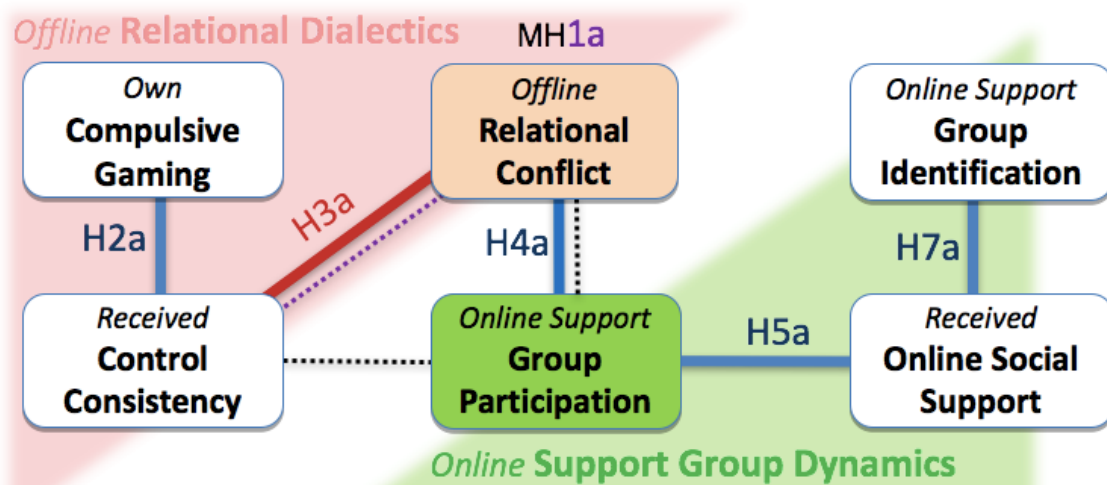
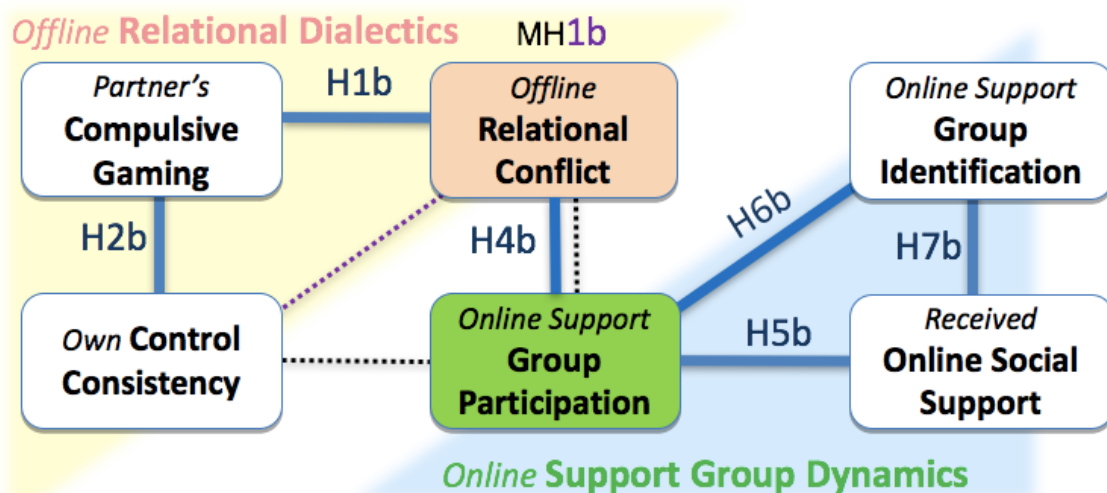


Figure 3a. Revised Research Model for Gamers



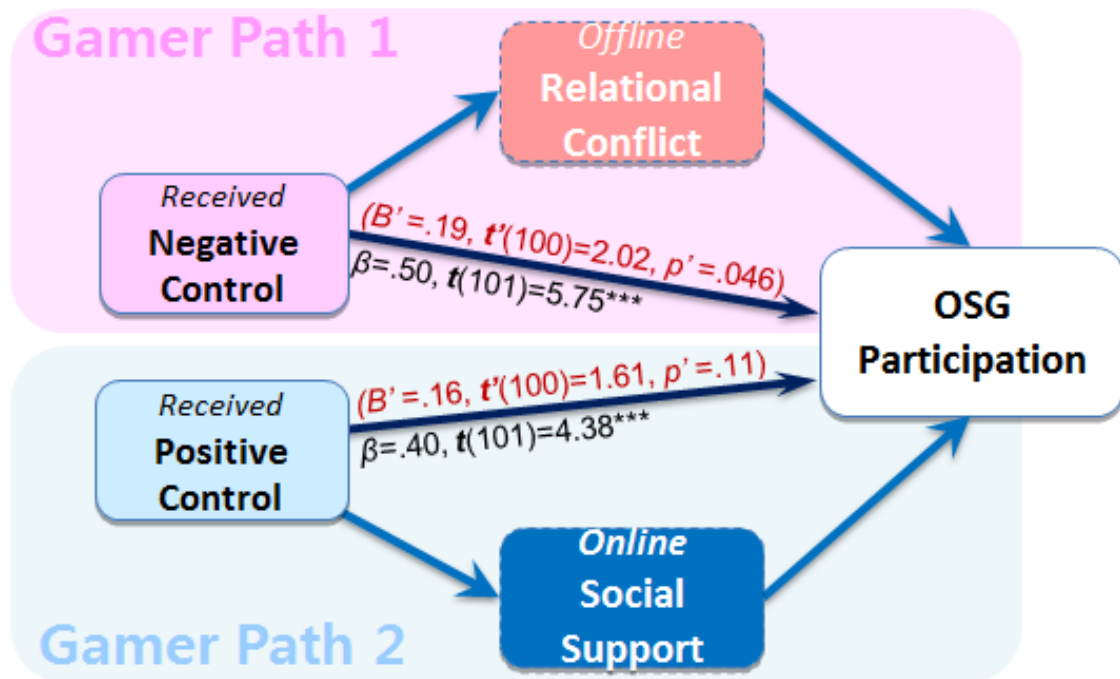
* blue line- positive association, red line- negative association, dot line- mediation path

Figure 3b. Revised Research Model for the Loved Ones



*Key: blue line- positive association, dot line- mediation path

Figure 4. Mediation Model of Gamers' Online Support Group Participation



[illegible]

[illegible]

[illegible]

What is your gender? ☐ Male ☐ Female

How old are you?

18-20 ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ 41-45 ☐ 46-50 ☐ 51 or older ☐

Which of the following best represents the highest level of education that you have completed?

☐ Some high school ☐ Attended some college ☐ Bachelor's degree ☐ Doctoral degree

☐ High school graduate ☐ Associates degree ☐ Masters degree

With which of the following groups do you most identify?

☐ African-American ☐ Asian-American or Pacific Islander ☐ Hispanic/Latino ☐ Native American ☐ Caucasian ☐ Other

What is your current relationship status?

☐ Single ☐ In a casual relationship ☐ In a serious relationship (e.g., engaged) ☐ Married ☐ Divorced (or separated) ☐ Widowed

How many children do you have?

☐ 0 ☐ 1 ☐ 2 ☐ 3 or more

Which of the following categories best describes your employment status?

☐ Employed full time (35 hrs or more/week) ☐ Stay at home/ home maker ☐ Other

☐ Employed part time (less than 35 hrs/ week) ☐ Temporarily unemployed

☐ Full time student ☐ Out of work/ unable to work/ retired

With whom did/do you play the game together?

☐ Alone ☐ With a friend whom I met online (e.g., gaming buddy)

☐ With a friend whom I know offline (face-to-face friend) ☐ With random strangers

What types of video game did/do you play the most?

☐ Multiplayer online game (e.g., MMORPG) ☐ Video console game (e.g., Xbox, PlayStation, Wii..)

☐ Single player online game ☐ Mobile game (e.g., Phone, PSP, Nintendo..)

☐ Offline computer game (e.g., Solitaire) ☐ Other

Do you have any comments or final thought? Thank you for your feedback.

Please click the button below to enter your survey responses.

If you want to receive a \$5 gift card, please provide us with your email address. I will email you a \$5 Amazon gift card code in 3-5 days. Thanks you for your participation.Thanks you for your participation.

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[illegible]

Please answer the following questions based on how the person has behaved.

[illegible]

The following questions ask about how you think of the OLGAnon community.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1. I would prefer to be in a different group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Members of this group like one another.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I enjoy interacting with the members of this group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I don't like many of the other people in this group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. In this group, members don't have to rely on one another.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. All members need to contribute to achieve the group's goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. This group accomplishes things that no single member could achieve.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. In this group, members do not need to cooperate to complete group tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I think of this group as part of who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I see myself as quite different from other members of the group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I don't think of this group as part of who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I see myself as quite similar to other members of the group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I find that my values and the values of other group members are very similar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I am willing to agree with this group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I am willing to follow the opinion of this group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please answer the following question about how you identify with "Game widow" or Game widower."

	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
I identify with "game widow/widower."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What types of video game did/does your partner play the most?

- ☐ Multiplayer online game (e.g., MMORPG)
- ☐ Single player online game
- ☐ Offline computer game (e.g., Solitaire)
- ☐ Video console game (e.g., Xbox, PlayStation, Wii..)
- ☐ Mobile game (e.g., Phone, PSP, Nintendo..)
- ☐ Other

What is your gender? Male Female

How old are you?

18-20 21-25 26-30 31-35 36-40 41-45 46-50 51 or older

Which of the following best represents the highest level of education that you have completed?

☐ Some high school ☐ Attended some college ☐ Bachelor's degree ☐ Doctoral degree

☐ High school graduate ☐ Associates degree ☐ Masters degree

With which of the following groups do you most identify?

African-American Asian-American or Pacific Islander Hispanic/Latino Native American Caucasian Other

What is your current relationship status?

Single In a casual relationship In a serious relationship (e.g., engaged) Married Divorced (or separated) Widowed

How many children do you have?

0 1 2 3 or more

Which of the following categories best describes your employment status?

☐ Employed full time (35 hrs or more/week) ☐ Stay at home/ home maker ☐ Other

☐ Employed part time (less than 35 hrs/ week) ☐ Temporarily unemployed

☐ Full time student ☐ Out of work/ unable to work/ retired

Do you have any comments or final thought? I thank you for your feedback.

Please click the button below to enter your survey responses.

If you want to receive a \$5 gift card, please provide us with your email address. I will email you a \$5 Amazon gift card code in 3-5 days. Thanks you for your participation.Thanks you for your participation.

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Appendix 2. Interview Questions

1. When did you become a member of [Name of community]? What made you join the community at that time? (e.g., information, emotional support, friendship, entertainment..) What is your main motivation now?
2. Then, you have stayed in the community for ___ months. What makes you keep coming back? What is the main benefit for you? Does it outweigh the disadvantages (if any)? Have you ever considered stop using this [COMMUNITY]? If so, why?
3. Have you ever posted anything in the community? If so, what do you usually post on the board, and why?
4. What function/channel of the community do you use the most? (e.g., chat-room, forum, private message) Why?
5. Do you feel you are a part of the community? Why?
6. Have you ever received any kinds of help from other community members? If so, what kind of support was it? How helpful the resource was to you?
7. Have you ever provided any kinds of help to other members? If so, why?
8. Do you also talk to other members using other communication channels other than the community message boards? If yes, what method? (e.g., email, IM, phone, texting, face-to-face meeting..) What kinds of topics do you discuss on those channels?
9. Do you have any thoughts on why some people leave this community?
10. Are you satisfied with current communication and relationship with other members?
11. Why do you think some individuals show problematic internet use?
12. In your opinion, what is “game addiction”?

13. What do you think of the terms “game widow/widower” or “game addict” in general? Do you think you are (or your loved one is) “gamer in recovery” or “recovering addict?”
14. Do you think this community use is helpful for people who have issues related to compulsive internet uses? Why or why not?
15. Do you have any final thoughts or additional comments about your/your partner’s gaming and its impact on your life?
16. Are you satisfied with your current relationship with your partner? How has your relationship with your partner changed as a result of the gaming? How do you feel about that change?
17. How long (weeks, months, years) has your/your partner’s online gaming been a problem for you? How did the problems transform over time?
18. How does your/your partner’s compulsive gaming affect your relationship?
19. (For loved ones) What kind of support did you give to your loved ones to deal with his/her “game addiction”? (For gamers) What kind of support did you receive from your loved ones to deal with your “game addiction”?
20. (For loved ones) What kind of control/pressure did you give to your loved ones to deal with his/her “game addiction”? (For gamers) What kind of control/pressure did you receive from your loved ones to deal with your “game addiction”?
21. What patterns/themes of arguments/conflicts relate to gaming do you usually find from your relationship? And what have you done to cope with that?
22. Do you have any final thoughts or additional comments about your/your partner’s gaming and its impact on your relationship?

Appendix 3. Institutional Review Board Approval



Office of Research and Regulatory Affairs
Arts and Sciences IRB
Rutgers, The State University of New Jersey
335 George Street / Liberty Plaza / Suite 3200
New Brunswick, NJ 08901

<https://orra.rutgers.edu/hssp>

732-235-2866

March 24, 2017

Seol Ki
School of Communication and Information
4 Huntington Street
College Ave Campus

P.I. Name: Ki
Protocol #: 14-723M

Dear Seol Ki:

Initial	Amendment	Continuation	Continuation w/ Amend	Adverse Event
---------	-----------	--------------	-----------------------	---------------

Protocol Title: "Exploring Communication of Compulsive Gamers and Their Loved Ones: A Tensional Approach"

This is to advise you that the above-referenced study has been presented to the Institutional Review Board for the Protection of Human Subjects in Research, and the following action was taken subject to the conditions and explanations provided below:

Approval Date: 3/23/2017

Expiration Date: 3/22/2018

Expedited Category(s): 7

Approved # of Subject(s): 220

Currently Enrolled: 173

This approval is based on the assumption that the materials you submitted to the Office of Research and Sponsored Programs (ORSP) contain a complete and accurate description of the ways in which human subjects are involved in your research. The following conditions apply:

- **This Approval**-The research will be conducted according to the most recent version of the protocol that was submitted. **This approval is valid ONLY for the dates listed above;**
- **Reporting**-ORSP must be immediately informed of any injuries to subjects that occur and/or problems that arise, in the course of your research;
- **Modifications**-Any proposed changes **MUST** be submitted to the IRB as an amendment for review and approval prior to implementation;
- **Consent Form(s)**-Each person who signs a consent document will be given a copy of that document, if you are using such documents in your research. The Principal Investigator must retain all signed documents for at least three years after the conclusion of the research;
- **Continuing Review**-You should receive a courtesy e-mail renewal notice for a Request for Continuing Review before the expiration of this project's approval. However, it is your responsibility to ensure that an application for continuing review has been submitted to the IRB for review and approval prior to the expiration date to extend the approval period;

Additional Notes:	▪ Continuation Expedited Approval per 45 CFR 46.110(b)(2)
Additional Conditions:	▪

Failure to comply with these conditions will result in withdrawal of this approval.

Please note that the IRB has the authority to observe, or have a third party observe, the consent process or the research itself. The Federal-wide Assurance (FWA) number for the Rutgers University IRB is FWA00003913; this number may be requested on funding applications or by collaborators.

Respectfully yours,

Acting For--
Beverly Tepper, Ph.D.
Professor, Department of Food Science
IRB Chair, Arts and Sciences Institutional Review Board
Rutgers, The State University of New Jersey

(1) ONLINE SURVEY INVITATION

Dear [name of community] users:

Hello. I am Seol Ki who is a graduate student in Communication department at Rutgers University. For my doctoral dissertation, I am looking for volunteers to participate in a research study on communication among online gamers and their loved ones.

The topic of my doctoral thesis is compulsive online gaming phenomenon. As a part of my dissertation research, I will explore how people react to issues regarding compulsive internet uses, by examining existing online forums for compulsive gamers and their loved ones (e.g., family, significant other, friends).

I used to be a compulsive online gamer and I still have a family member who plays games obsessively. For those reasons, I joined your community and actively using your community. Information and emotion that are shared in this site have been very valuable and useful resource for many people to overcome issues related to compulsive gaming. I want to study how this community helps people cope with relationship problems after all.

This confidential survey is about your experiences in this online community and offline relationship with your loved one. The survey will take about 10-15 minutes to complete. You will receive \$5 gift cards when you complete the survey.

If you are interested in participating in this study, please use this link to participate in the survey: (survey link here) This link will direct you to the page of informed consent that includes the detail of this research participation. Thank you for your time.

APPROVED EXPIRES

JUN 06 2016

APR 15 2017

(2) INTERVIEW INVITATION

Hello,

Thanks very much to those of you who completed my survey.

I would like to conduct follow-up interviews to explore the issues in more depth.

If there is anyone interested in being interviewed via voice chatting (e.g., google hangout or Skype), please contact me at seol@rutgers.edu. As compensation for your time and contribution, you will receive a gift card for 20 dollars. Thank you for your time.

Approved by the
Rutgers IRB

Approved by the
Rutgers IRB

INTERVIEW RECRUITMENT

Hello. I am Seol Ki who is a Ph.D candidate in Communication department at Rutgers University in the U.S. For my doctoral dissertation, I am looking for volunteers to participate in a research study on communication among gamers and their loved ones.

I used to be a heavy gamer (Dota2) and also a recovering addict, so I personally know how serious this issue is for both gamers and our loved ones. I do have a brother and a partner who still play games obsessively as well. For these reasons, I've been actively using this community and received a lot of strength and hope. And I decided to write my Ph.D dissertation on the communication between gamers and their loved ones. To examine interpersonal relationship between gamers and their loved ones (and how they seek help from this online community), I would like to conduct online interviews of gamers or their significant others/family/friends.

If you are interested in this 1-hour confidential online interview (via online chatting program such as Google chat or Skype), please contact me at: seol@rutgers.edu. Then I will send you an email including more detailed information about the interview (e.g., scheduling, questions, and informed consent form).

As compensation for your time and contribution, you will receive a \$20 Amazon gift card code right after the online interview. Your voluntary participation will be very helpful and important for compulsive gaming research. Thank you again for your interest.

For IRB Use Only. This Section Must be Included on the Consent Form and Cannot Be Altered Except For Updates to the Version Date.

<p>IRB Stamp Box</p> <p>APPROVED</p> <p>JAN 30 2017</p> <p>Approved by the Rutgers IRB</p>
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<p>IRB Stamp Box</p> <p>EXPIRES</p> <p>APR 15 2017</p> <p>Approved by the Rutgers IRB</p>

Version Date: v1.0
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Consent Form for Online Survey Participation

Hello. You are invited to participate in a research study that is being conducted by Seol Ki (Ph.D candidate, Communication department at Rutgers University). The following survey is a part of a research on communication among problematic gamers and their loved ones.

Approximately 200 users of four online communities (between the ages of 18 and 70 years old) will participate in the study, and each individual's participation will last approximately 10 to 15 minutes through an online survey.

This research is confidential. Confidential means that the research records will include some information about you and this information will be stored in such a manner that some linkage between your identity and the response in the research exists. Some of the information collected about you includes your email address (for \$5 gift card compensation). Please note that the researchers will keep this information confidential by limiting individual's access to the research data and keeping it in a secure location (password-protected personal computer and locked file cabinet accessible only by the researchers)

The researchers will NOT record your personal information (e.g., your name, address, phone number, date of birth, social security number). Your data record will be assigned a code, and a master list that links the code to your response will be maintained securely.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for three years in an electronic password-protected file.

Participation in this survey is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable. Other than that, there are no foreseeable risks or discomforts to participation in this study.

Your participation is valuable, and it will increase our knowledge of online community dynamics and the impacts of compulsive gaming. Upon completion of the online survey, you may receive a \$5 gift card. If you want to receive the gift card, please provide us with your email address in the space provided at the end of the survey, so that the researcher can send you the gift card code.

This is a scientific study being conducted by Seol Ki (Ph.D candidate in Communication, Rutgers University). Questions or concerns about this research should be directed to Seol Ki at:

School of Communication and Information
Rutgers, The State University
4 Huntington St.
New Brunswick, NJ 08901-1071
Cell phone: 917-536-0297
Email: seol@rci.rutgers.edu

You may also contact her advisor Dr. Jennifer Gibbs (Associate professor, Rutgers University) at: jgibbs@rutgers.edu (Same address, Office phone: 848-932-8716).

Concerns about your rights as a research subject should be directed to the IRB Administrator at Rutgers University at:

Institutional Review Board
Rutgers University, the State University of New Jersey
Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Phone: 732-235-9806
Email: humansubjects@orsp.rutgers.edu

APPROVED

JUN 06 2016

Approved by the
Rutgers IRB

EXPIRES

APR 15 2017

Approved by the
Rutgers IRB

Clicking the "Submit/enter" button indicates you agree to participate in this research study.

[check box ☐] "I affirm that I am at least 18 years of age and am freely signing this consent form.

[Next: online survey enter button ☐]



INTERVIEW CONSENT FORM

Hello. You are invited to participate in the interview as a part of a research study on communication patterns in online communities for recovering compulsive gamers. If you are at least 18 years old and are currently using current message boards, then we welcome your views on this topic. As an incentive to participate, each interview participant who completes the full interview process will receive a \$20 electronic gift card. Approximately 20 members will participate in the study. The study procedures include a Skype interview or Google hangout interview (or any other secure online voice/text chatting software if you prefer), which will take approximately one hour. Your participation in this study involves being asked a series of open-ended questions through an online interview.

This research is confidential. Confidential means that the research records will include some information about you and that this information will be stored in such manner that there is some linkage between your identity and the response in the research. If you agree to take part in the study, your email address or Skype ID will be recorded and used during initial contact in order to set up an interview time. During the interview analysis, your interview transcript will be assigned a random code, not your Skype ID or email address. Once your interview is complete, your contact information and identifiable data will be permanently deleted. Please note that we will keep this information confidential by limiting individuals' access to the research data and keeping the data on a password protected computer. The researcher and the Institutional Review board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. All study data will be kept for three years in an electronic password-protected file and then completely destroyed in May 2020. If a report of this study is published, results will be presented in aggregate. If individual quotes are used, participants will not be identified. There are no known risks to you if you decide to participate in this research study. There are also no costs to you for participating in the study. The information you provide will be used for research purposes and may be used at academic conferences or in academic publishing, and in educational settings.

Your participation is valuable and the information learned in this study should provide better understandings of how game addiction impacts interpersonal relationship and how family/ friend/ significant others of problematic gamers communicate. You will receive a summary of research findings when the analyses are completed. Your participation will increase our knowledge of online community dynamics and the impacts of compulsive Internet uses more broadly. Participation in this interview is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. Also, you may feel some discomfort in sharing or responding to some of the questions asked. You may refuse to answer any question that makes you uncomfortable. Other than that, there are no physical or psychological risks expected from this research.

This is a scientific study being conducted by Seol Ki (Ph.D candidate in Communication, Rutgers University). Questions or concerns about this research should be directed to Seol Ki at:

School of Communication and Information
Rutgers, The State University, 4 Huntington St., New Brunswick, NJ 08901-1071
Cell phone: 848-202-3515 Email: seol@rutgers.edu

or you may contact her advisor Professor Craig Scott at crscott@rutgers.edu (Office phone: 848-932-7125).

Concerns about your rights as a research subject should be directed to the IRB Administrator at Rutgers University at:

Institutional Review Board
Rutgers University, the State University of New Jersey
Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Phone: (732) 235-2866
Email: humansubjects@orsp.rutgers.edu

You will be given a copy of this consent form for your records. Please sign below if you agree to participate in this research study:

Subject (Print) _____

Subject Signature _____ Date _____

Principal Investigator Signature _____ Date _____

For IRB Use Only. This Section Must be Included on the Consent Form and Cannot Be Altered Except For Updates to the Version Date.

<p>IRB Stamp Box</p> <p>EXPIRES</p> <p>MAR 22 2018</p> <p>Approved by the Rutgers IRB</p>
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<p>IRB Stamp Box</p> <p>APPROVED</p> <p>FEB 23 2017</p> <p>Approved by the Rutgers IRB</p>

Version Date: v1.0
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