

AN ONLINE INVESTIGATION INTO INTERNET GAMING DISORDER (IGD),
COMORBIDITY, AND PSYCHOSOCIAL ISSUES: A COMPARISON OF
AMERICAN AND CHINESE GAMERS—AND PREDICTORS OF
MEETING CRITERIA FOR A FORMAL DIAGNOSIS OF IGD

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ABSTRACT

AN ONLINE INVESTIGATION INTO INTERNET GAMING DISORDER (IGD), COMORBIDITY, AND PSYCHOSOCIAL ISSUES: A COMPARISON OF AMERICAN AND CHINESE GAMERS—AND PREDICTORS OF MEETING CRITERIA FOR A FORMAL DIAGNOSIS OF IGD

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The problem that this study addressed is the rise of internet gaming disorder (IGD) globally, including within the United States and countries such as China—and, the resultant need for more data on the prevalence of adult men and women meeting criteria for a diagnosis of IGD, as well as data on related comorbidities and psychosocial issues. A global sample (N=231) met the study inclusion criteria (i.e., play video games at least once a week at a minimum, consider themselves involved in Internet gaming, and have been gaming for the past six months—while of interest were findings with an English Speaking (ES) sample, and a Chinese Mandarin Speaking (CMS) sample. The study sample of convenience recruited via a social media campaign was 62.4% (n=63) male in the ES sample, and 55.4% (n=72) male in the CMS sample. The ES sample had a mean age of 29.34 (SD=8.396, Min=18, Max=52), and the CMS sample had mean age of 25.65 (SD=7.514, Min=18, Max=57). While the CMS sample indicated they were Asian (99.2%, n=129), the ES sample was diverse: 58% White (n=59), 17.8% (n=59) Asian, and 11.9% (n=12) Black.

The main study findings reveal a prevalence of Internet Gaming Disorder (IGD) of 0% (n=101) for the ES sample, and .8% (n=1) for the CMS sample. As another main study finding, for the CMS sample, participants met more DSM-5 criteria for IGD (out of the 9 total criteria), when they were male, experienced anxiety in the past year, and were engaged in more violence due to gaming. For the ES sample, study participants met more DSM-5 criteria for IGD (out of the 9 total criteria), when they did not have a partner, had a higher income, were engaged in more violence due to gaming, engaged in a higher level of help seeking for personal/emotional support, and had a lower level of perceived social support. In essence, this constitutes the provision of risk profiles and descriptions of those most vulnerable to IGD. This study contributes to those efforts to conduct research on the DSM-5 criteria for IGD (APA, 2013).

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Finally, I would like to dedicate this dissertation to everyone who suffers from adversities due to Internet Gaming Disorder (IGD) and wonders why some people in the world have not taken notice—even if that suffering is 1% or 35% there are still people who are “looking for someone to make the pain cease.”

M.T.

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Chapter I

INTRODUCTION

Internet Gaming Disorder (IGD) has been defined as “an intense preoccupation with games and dysfunctional gaming beliefs” (King & Delfabbro, 2018b, p. 188). Others have used the term Internet and Video Game Addiction (IVGA), including Greenfield (2018), while this dissertation will primarily refer to IGD. Most importantly, IGD is a global public health threat, including in China (Wu, Chen, Tong, Yu & Lau, 2018).

Asia is the most afflicted country for IGD, followed by Europe, then North America (Sussman, Harper, Stahl & Weigle, 2017). Further, Sussman et al. (2017) reported Asia as having a range of 4.8% to 5.9% for IGD. Europe has the second highest range of IGD at 1.16% to 2.5%, while North America follows at 0.3% to 1.0% for IGD. According to Sussman et al. (2017), “the overall statistics worldwide could be as low as 0.3% to 5.9%” for IGD (p. 311).

IGD has been a popular topic of discussion in Korea, Japan, Germany and various other countries, due to adolescent gamers and young adults rejecting engagement in daily societal expectations in favor of gaming three hours or more per day (King et al., 2018, p. 223). Out of concern, Japan has set up ministries to address this problem, while China has initiated the use of bootcamps for individuals who cannot cease gaming over the Internet (King et al., 2018, p. 223).

Zastrow (2017) reported that gaming in Korea and other countries is a serious issue. Consider how the Korean government became involved with gaming; children

were sneaking to engage in gaming, and even dropping out of school. Other children were becoming violent and combative. Korea even has a system where the Internet shuts down at a certain time to curb the behavior of those who cannot control their gaming habits over the Internet (Király et al., 2018, p. 506).

Gonzalez et al. (2018) discussed how “certain games are worse for some people than others by comparison, such as Massively Multiplayer Online” games (MMOs)—for example, *World of Warcraft* (p. 15). Yau and Potenza (2014) emphasized how “some people play MMOs, which is one of the most popular video games over the internet categories for fun while others play for achievement” (p. 379). MMOs are “within these never-ending games that have tournaments for prestige, trophies and money around the world, especially in places like Korea leading to an obsession to obtain every item in the game” (p. 379).

The reason some games are more addictive than others is because some games have been constantly updating via an online server for years, while others have not (King & Delfabbro, 2018a). Gaming has become more advanced since the inception of the internet, where games can be updated with the click of a button to add more content, thereby extending what would otherwise be a shorter duration of play.

Sioni, Burleson, and Bekerian (2017) indicated that some players feel that there is a level of intimacy between the game and the player which leads the gamer to keep playing, or to spend hours trying to achieve the next big step within the virtual world, which sometimes means playing a game until their character makes it to a certain point in the level (p. 12). According to Sioni et al. (2017), “making it to new areas within the virtual world helps the player feel he or she has achieved something in life that would not

otherwise be felt in their real lives even if the individual achieved a lot outside of playing video games” (p. 12).

Suggesting there are indeed serious issues associated with gaming, consider how there is a gaming transfer phenomenon (GTP) for some games (Zastrow, 2017). Zastrow (2017) defined GTP as “the instant where an individual” is plugged out of the virtual world, yet starts “seeing things in the virtual world come into the real world, such as a life bar over an individual’s head” (p. 4271). One study reported 97% of the individuals who participated in research suffered from moments of GTP (Zastrow, 2017). Even if individuals have such symptoms, some gamers are hesitant or afraid to be honest about the number of hours they spend gaming over the internet (King & Delfabbro, 2018b). Such individuals fear being judged harshly by friends, family, spouses, and coworkers (King & Delfabbro, 2018b).

There is a role for psychologists, psychiatrists, as well as diagnostic tools in uncovering serious symptoms associated with internet gaming.

Diagnostic Issues

Internet Gaming Disorder (IGD) can be defined as “an intense preoccupation with games and dysfunctional gaming beliefs” (King & Delfabbro, 2018b, p. 188). IGD was included in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders*, being found worthy of future study. This may be viewed as an opportunity for achieving consensus and unification in the field, while there is a role for tools capable of assessing IGD (Pontes & Griffiths, 2015).

Further, the American Psychological Association (APA, 2013) has noted 9 criteria for IGD within the DSM-5, such as follows: (1) preoccupation or obsession with Internet games; (2) withdrawal symptoms when not playing Internet games; (3) a build-up of tolerance, with more time needing to be spent playing the games; (4) the person has tried to stop or curb playing Internet games, but has failed to do so; (5) the person has had a loss of interest in other life activities, such as hobbies; (6) a person has had continued overuse of Internet games, even with the knowledge of how much they impact a person's life; (7) the person has lied to others about his or her Internet game usage; (8) the person uses Internet games to relieve anxiety or guilt, or as a way to escape; and, (9) the person has lost or put at risk an opportunity or relationship because of Internet games (p. 795). The APA (2013) stated that "individuals who are to be diagnosed" with internet gaming disorder must "at least meet 5 out of the 9 criteria mentioned within the DSM-5" (p. 795).

However, the information provided within the DSM-5 for IGD is preliminary, due to the criteria for the diagnoses of IGD in the DSM-5 being taken from the criteria to diagnose gambling addiction (APA, 2013, p. 294). Thus, IGD does not have its own criteria developed from the ground up (p. 294).

King and Delfabbro (2018b) noted that tension regarding this new classification is coming from East Asian countries, where it is felt that internet gaming is a serious issue; this is why establishing criteria for diagnosing a disorder was strongly supported for inclusion within the DSM-5. Further, the World Health Organization announced a definition capturing the addictive nature of gaming, which "will be included within the next International Chronic Disease Manual" (p. 209). King and Delfabbro (2018b) also identified a group of scholars opposing the IGD inclusion within the International

Classification of Diseases (ICD 11); they are quoted as saying that “internet gamers are being stigmatized when IGD is not an issue that resources need to be taken up for when some researchers and academia authority figures feel gambling and drug addiction” hold greater validity (p. 246).

According to King and Delfabbro (2018b), scholars disagreeing with one another is not surprising, considering the classification of IGD is new (p. 248). Further, denying that there is an issue does not mean there is not an issue (King & Delfabbro, 2018b). Scholars continue to question and argue about IGD being included within the ICD, and possibly the next DSM, because it might not be a valid addiction, whereas drug and sex addiction are believed to be valid addictions, but currently lack a presence in the DSM (Zastrow, 2017). Further, Zastrow (2017) stated that “some scholars believe the definition for gaming disorder seems to be rushed and not well thought out yet concerning the criteria of how to properly diagnose the affliction” (p. 4268).

The preliminary diagnosis has led some clinical psychologists to feel less comfortable treating IGD without a universal criterion to employ (King & Delfabbro, 2018b). A gold standard for treatment has been said to be crucial to push the diagnosis forward. Some practitioners have fostered the false hope that IGD, as an addiction, can be solved in just 6 to 8 sessions of therapy or a bootcamp (King & Delfabbro, 2018b). At present, cognitive behavioral therapy (CBT) is indicated “as the go to treatment for IGD” (Han et al., 2018). CBT is accepted, but there is not enough evidence available to say if CBT is the best approach to treat most negative behaviors associated with IGD (Han et al., 2018).

Clearly, there is disagreement among scholars, and King and Delfabbro (2018b) noted how some “scholars feel that classifying gaming as a disorder makes no sense because it is not a drug or gambling addiction” (p. 216). Meanwhile, others have pursued the path of generating research on a tool that can measure IGD, based on the criteria within the DSM-5, while seeking to further consensus and unification in the field. In this regard, what has emerged is a valid and reliable brief assessment tool for use in research to assess for IGD, as suggested by the DSM-5 (Pontes & Griffiths, 2015).

Focus on the Brain

While using the term Internet and Video Game Addiction (IVGA), what has been emphasized is how all addictions are characterized by similar behavioral and neurobiological etiology and symptomatology (Greenfield, 2018). In addition, the American Society of Addiction Medicine has focused on both the behavioral and neurobiological dimensions of addiction, while specifying disruption in the mesolimbic reward circuitry of the brain, as key to the impact common across addictive behaviors (Greenfield, 2018).

Consistent with this focus on the brain, according to Zastrow (2017), there is evidence from research that internet gaming tends to light up neurons and produce dopamine, similar to what happens when a drug addict’s pleasure center of the brain is activated. However, some argue that this effect means little, because various activities cause neurons to light up and the pleasure center to become active; yet, this does not make everyone an addict (Zastrow, 2017).

Sussman, Harper, Stahl, and Weigle (2017) examined MRIs and EEGs of the brain with regard to impacts from IGD. The studies showed gray matter decreasing in certain areas of the prefrontal lobe of the brain, which seems to correlate with the pleasure-seeking center of the brain. This suggests the potential for people with IGD to have a distorted perception of time, so that playing leading to hours passing by within the real world. Thus, “it is possible that 15 minutes of exposure to internet gaming can be enough to leave a lasting impression,” including withdrawal symptoms, as well as “not being able to engage with the virtual world” (p. 208). Being male is associated with being more likely to develop computer gaming issues; females, however, tend to have more issues with mobile gaming on cell phones and social media, along with having more comorbidities (p. 313).

IGD, Comorbidity, and Psychosocial Issues

González et al. (2018) indicated that “some scholars believe IGD is related to a single disorder or comorbidity more so than IGD being its own disorder” (p. 12). Obsessive compulsive disorder (OCD), depression, and attention deficit hyperactivity disorder (ADHD) are some of the more common disabilities that come with a diagnosis of IGD (p. 12). The research does not show links with depression, ADHD, or OCD for all IGD cases (King & Delfabbro, 2018b). However, the data does indicate that “some people are making an attempt to disconnect with reality to escape the pain of a traumatic event” (p. 60).

Others have noted that those who lack social support, are lonely and socially dislocated, are more prone to problematic Internet use; it has been suggested that those

who lack such social support or meaningful social relations may engage in problematic Internet use as a way to fill their social void (Dengah, Snodgrass, Else & Polzer, 2018). Dengah et al. (2018) found that those with greater offline social support reported lower online gaming activity, fewer positive gaming experiences, and less negative and disordered gaming activity. Findings also showed that those who reported greater online social support had higher online gaming activity, greater positive gaming experiences, and more negative and disordered gaming activity. The findings contradicted the stereotype of the lonely gamer, given gamers were found to be immersed in meaningful social connections, including those online and offline, including social relations within and outside the virtual space (Dengah et al., 2018).

Further, Liu et al. (2016) stated that some gamers are more impulsive than others, which causes some people who game to have a high-level of negative behavior that leads to playing for long hours without putting much thought into how it is altering their life (p. 65). Some IGD sufferers believe the world is against them, and that people who do not understand or play video games are against them as well; therefore, it is not worth interacting with people outside of a virtual world (King & Delfabbro, 2018b). Some people with internet gaming disorder have a disconnect with reality regarding what they have achieved in the real world compared to the virtual one (King & Delfabbro, 2014). Some IGD gamers will downplay their real-world accomplishments and overstate their online ones. The gamers who do this may feel the real world has not acknowledged them, so may escape into a world that is not real to accomplish what he or she believes they have not achieved in the real world.

King and Delfabbro (2016) noted how lack of human interaction causes an individual with IGD to neglect not only their common everyday life responsibilities like work and school, but also jeopardizes their health, hygiene, and friendships (p. 1635). Further, they sometimes are so stuck within the world of internet gaming that they forget to eat and rest. IGD also makes individuals more irritable, and in some cases, violent toward their significant others or parents (King & Delfabbro, 2018a).

Yet, there is research showing that hours played does not always determine or meet the criteria for internet gaming disorder; indeed, a certain demographic of people who play video games do so professionally, and do not meet criteria for an addiction to internet gaming. This supports the assertion that some people play for achievement, while others play for fun (King & Delfabbro, 2014). There is still evidence that internet gaming can seriously impact someone's life (King, Herd & Delfabbro, 2018). Lemmens, Valkenburg, and Peter (2011) indicated a link between gaming and depression, ADHD, and mood issues, followed by aggression, poor social adjustment, avoidant behavior, low empathy, poor school performance, and cyberbullying (p. 145).

Sussman et al. (2017) stated that other abnormalities in behavior include heightened alcohol consumption at 16%, compared to 5% when cross referencing peers without internet and gaming addiction. Further, anxiety is reported to range from 9% to 23% among individuals engaged in gaming (Sussman et al., 2017). According to Sussman et al. (2017), traumatic events have been said "to be one of the reasons that some people escape to the virtual world" at a rate of 44%, compared to 33% of their peers without gaming issues (p. 314).

Yau and Potenza (2014) also indicated that “internet gamers use gaming over the internet as a form of therapy to escape the pain of a traumatic event” (p. 382). Gamers fail to realize that they “are losing touch with reality and neglecting their health while doing so, which is why there was a push for inclusion of a criteria” for IGD in the DSM-5, while “clearly there is more data needed” (p. 382).

Statement of the Problem

The problem that this study addressed is the rise of internet gaming disorder (IGD) globally, including within the United States and countries such as China—and, the resultant need for more data on the prevalence of adult men and women meeting criteria for a diagnosis of IGD, as well as data on related comorbidities and psychosocial issues.

Purpose of the Study

The purpose of the study was to identify significant predictors of the study outcome variable/dependent variable of the extent to which the participants met the criteria for a diagnosis of Internet Gaming Disorder (IGD), as per the DSM-5 criteria.

The following independent variables were included: gender; age; race/ethnicity/; live in U.S. (yes/no); born in the U.S. (yes/no); born in China (yes/no); employed (yes/no); student (yes/no); annual household income; level of education; insurance (private, other, none); age of gaming initiation; hours per week gaming; ever played daily (yes/no); maximum gaming in any 24 hour period in hours (1-3 to 24 hours); transfer of

virtual game images to actual reality (yes/no); extent of past 30 day cigarette and other substance use; extent of 3x per week cigarette and other substance use; extent of daily cigarette and other substance use; past year depression (yes/no); past year anxiety (yes/no); degree of mental health service utilization in past year; degree of general help seeking from various sources for personal and emotional issues; rating of risk of providing socially desirable responses: degree of social support; rating of offline social support; and, rating of online social support.

Research Questions, Survey Parts and Data Analysis Plan

Given a global sample (N=231) composed of English speaking (ES, n=101) and Chinese Mandarin speaking (CMS, n=130) men and women who met the study inclusion criteria (i.e., play video games at least once a week at a minimum, consider themselves involved in Internet gaming, and have been gaming for the past six months) and completed an online survey in response to a social media campaign (*i.e. online invitation to take the study survey for a chance to win 1 of 3 \$100 Amazon gift cards*), this study answered the following research questions:

1-What were their demographic characteristics (gender, age, race/ethnicity, US born [yes/no], live in US [yes/no], Chinese born [yes/no], lives in China [yes/no], partner [yes/no], employed [yes/no], student [yes/no], annual household income, level of education, insurance [private, other, none])?

Part I: Basic Demographics (BD-11)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

2-What was their age of gaming initiation, frequency of gaming (hours per week), maximum length of play in a 24 hour period, types of devices owned and used for play, top 3-5 favorite games (optional), and experience of any images from virtual reality games transferring into actual reality?

Part II: Gaming Initiation, Frequency & Other History and Gaming Behavior (GIF - OHGB-9)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

3-What was the prevalence and frequency of using cigarettes and other substances (cigarettes, e-cigarettes, alcohol, marijuana, heroin/other opioid, cocaine, etc.)?

Part III: Cigarette and Other Substance Use (COSU-3)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

4-What was the prevalence of Internet Gaming Disorder (IGD), as an expression of addiction to gaming activity, as per the DSM-5 of the *Diagnostic and Statistical Manual of Mental Disorders*? And, did they attribute their engagement in any violence to gaming activity?

Part IV-A: Internet Gaming Disorder Scale – Short Form (IGDSSF-9)

Part IV-B: Engagement in Violence Scale (EIVS-1) (Supplemental Violence Question # 10)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

5-What were their experiences of depression or anxiety in the past year?

Part V: Retrospective Depression & Anxiety (R-DA-4)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

6-To what extent did they access mental health services for any past year gaming activity, depression or anxiety?

Part VI: Measure of Mental Health Services Utilization (M-MHSU-3)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

7-What was their level of general help-seeking from varied sources (e.g., intimate partner, friend, parents, family, minister/religious leader, etc.) for *personal/emotional problems* and *suicidal feelings*, respectively?

Part VII: General Help Seeking Questionnaire (GHSQ-2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

8-What was their perceived level of social support?

Part VIII: Perceived Social Support (PSSS-5)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

9-How did they rate the quality and importance in their life of any *off-line social support* they receive from other people?

Part IX: Rating of Off-Line Social Support (R-Offline-SS2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

10-How did they rate the quality and importance in their life of any *on-line social support* they receive from other people?

Part X: Rating of On-Line Social Support (R-Online-SS2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

11-Using a new one item scale for measuring the risk of providing socially desirable responses, how do they score?

Part XI: Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RP-SD-R-1)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

12-Were there any significant relationships between the study outcome variable of extent to which they meet DSM-5 diagnostic criteria for IGD and selected demographics and other variables? And, were there significant differences between American and Chinese participants?

Data Analysis Plan: Inferential statistics (independent t-tests and Pearson correlation)

13-What were the significant predictors of the study outcome variable of extent to which they meet DSM-5 diagnostic criteria for IGD, while controlling for socially desirable responses?

Data Analysis Plan: Backward stepwise regression.

Study Rationale

There is a rationale for the present study in the DSM-5 finding IGD worthy of further study (APA, 2013; Pontes & Griffiths, 2015). In line with this, Pontes and Griffiths (2015) have developed and validated a short tool for measuring IGD as per the DSM-5 criteria, having just 9 items: the Internet Gaming Disorder Scale-Short Form (IGDS-SF-9). The criteria for diagnosing or measuring IGD follows the criteria for diagnosing a gambling addiction, while paving the way for diagnosing Internet gaming addiction (i.e., if a person meets 5 of 9 DSM-5 criteria).

There is also a rationale for having an English speaking (ES sample) and a Chinese Mandarin speaking (CMS sample). Consider how Zhang, Amos, and McDowell (2008) found that university students in China experienced a higher rate of Internet addiction compared to university students in the United States; rates were higher among

males than females in both countries (Zhang et al., 2008). Investigating the prevalence of IGD among adults in China, it was found that IGD was associated with psychological distress, as a serious comorbidity (Wu, Chen, Tong, Yu & Lau, 2018). Consider how there were 417 million active gamers in China in the year 2016, while IGD is considered a serious global public health threat (Wu et al., 2018).

Thus, additional rationale for the study comes from such findings that IGD is a serious global problem, while the extent of the problem varies in individual countries (King et al., 2018; Sussman, et al., 2017). On the other hand, it is possible that those engaged in Internet gaming should not be stigmatized by the suggestion that IGD is a serious issue (King & Delfabbro, 2018b). The study may add to the current discussion and debate, by identifying the extent to which those engaged in Internet gaming activity meet the DSM-5 criteria for IGD, or do not—along with predictors of meeting criteria for a DSM-5 diagnosis of IGD.

The frequency of engagement (hours) may also inform the literature with regard to the continuum of Internet game engagement—from what is associated with disorder/addiction, to engagement that is non-problematic. Thus, other questions follow the work of Pontes and Griffiths (2015) in the present study's Gaming Initiation, Frequency, and Other History and Gaming Behavior (GIF-OHGB-8) scale, specifically, items #1, #2, #6 and #7; other items were added (items #3, #4, #5, and #8), given the literature.

While CBT is the main treatment for IGD, this is not yet an evidence-based approach (Han et al., 2018). Thus, there is a rationale for determining if participants have sought out any counseling or engaged in mental health services utilization for IGD. This

rationale follows from the work of Lian (2017), who investigated with Chinese international students their mental health services utilization—retaining the focus on any past year engagement in counseling for depression and anxiety. This study modified the Measure of Mental Health Services Utilization (M-MHSU-3) advanced by Lian (2017); the result is still a 3-item scale assessing any past-year utilization of counseling services, for which there is strong rationale for inclusion in this study.

However, it is possible that some individuals, especially from certain cultures, may prefer help from sources other than mental health professionals or counselors. For example, Wilson, Deane, Ciarrochi, and Rickwood (2005) provided of short 2-item measure for help-seeking intentions, with good internal consistency. Thus, this used their General Help-Seeking Questionnaire (GHSQ-2) to assess if a participant with a personal or emotional problem, or with suicidal thoughts, would seek help from varied sources (partner, friend, parent, other family, mental health professional, phone helpline, doctor, minister/religious leader, or from no one).

There is a rationale for investigating comorbidity, such as for depression and anxiety, as did Lian (2017), given evidence of comorbidity in those with IDG, including depression (González, et al., 2018). There is also a rationale for investigating demographics. Potential gender differences include females possibly having more comorbidity. While males tend to have higher rates of computer gaming issues, females tend to be more engaged with mobile cell phone gaming and social media (Sussman et al., 2017).

There is also a rationale for investigating potential comorbidity involving problematic alcohol use. This follows from the work of others (Ko et al., 2008) who

found that Internet addiction was associated with problematic alcohol use. This study follows Pontes and Griffiths (2015), who found the use of substances at least three times a week among gamers in their study: cigarettes (17.7%) and alcohol (12.4%). This study expands the substance use options assessed.

In addition, there is a rationale for investigating psychosocial issues, such as social support, using a new short measure of Perceived Social Support (PSSS-5), with excellent internal consistency, as found via first time use by Lian (2017). This follows from prior research on a lack of social support among those engaged in Internet gaming, and depictions of the lonely and socially dislocated gamer (Dengah et al., 2018).

However, following Dengah et al. (2018), new research using mixed methods provides a richer and more complex picture, with gamers having meaningful social connections both online and offline. Thus, there is a rationale for this study also introducing new short 2-item scales that permits Rating of Off-Line Social Support (R-OFFLINE-SS-2) and Rating of Online Social Support (R-ONLINE-SS-2).

Finally, this study is rooted in several theories: the psychiatric theory of addiction, as embodied in the DSM-5 (APA, 2013); the behavioral and neurobiological theory from addiction medicine (e.g., Greenfield, 2018), and the cognitive-behavioral theory (CBT) and treatment of addiction (e.g., Anuradha & Singh, 2018; Davis, 2001; Marlatt & Gordon, 1985).

Delimitations

The study was delimited to men and women who: are age 18 and above, with a history of past 6-month gaming, while also being able to read and understand English (i.e. ES sample) or Chinese Mandarin (i.e. CMS sample) on a 12th grade level or equivalent in Chinese Mandarin and completed the entire survey.

Limitations

Study limitations included the following: the use of an online sample of convenience, versus some other strategy that might create a more representative sample; and, a sample full of volunteers who may be more interested in the study, and therefore volunteer, potentially biasing the sample.

Abbreviations

Several key terms are abbreviated throughout the dissertation, as follows:

ADHD - Attention Deficit Hyperactivity Disorder

CMS – Chinese Mandarin speaking (i.e., CMS sample)

ES – English speaking (i.e. ES sample)

CBT - Cognitive Behavior Theory

DSM-5 - Diagnostic and Statistical Manual, Fifth Edition

IGD - Internet Gaming Disorder

IGA - Internet Gaming Addiction

IVGD - Internet and Video Game Disorder

SAD - Substance Abuse Disorder

Conclusion

The chapter introduced the study, including the statement of the problem, purpose of the study, and rationale for the study, including limitations. Next, Chapter II, Literature Review, will review literature relevant to the present study. Chapter III, Methods, will follow, providing the methods and procedures of the study. Thereafter, Chapter IV, Results, will present the findings. Finally, Chapter V, will provide the summary of the study, findings, a discussion of findings—as well as implications and recommendations, limitations, and a conclusion.

Chapter II

REVIEW OF THE LITERATURE

The chapter will provide a review of the literature relevant to the study.

Specifically, the chapter will review pertinent literature on the following topics: 1. internet gaming disorders (IGD) and related issues; 2. DSM-5 diagnostic criteria for IGD and controversy; 3. prevalence of internet gaming; 4. research on video and internet gaming—related factors; and, 5. focus on treatment for IGD.

I-Internet Gaming Disorder (IGD) and Related Issues

According to Lam (2014), “researchers have used different ways to describe such behavior in regard to Internet/gaming usage as compulsive computer use, internet dependency, pathological internet use and internet addiction” (p. 1). Per Ding et al. (2013), “Internet addiction disorder or Internet gaming disorder respectively IGD or IAD is a mental health issue worthy of additional scientific investigation” (p. 2). Internet addiction (IA) is prevalent among Eastern and Western societies. There appears to be a psychological component as to why certain games keep people online, satisfying various gaming motivations of the player; these motivations may include (1) achievements, (2) leveling up, (3) acquiring status and power, (4) competition, (5) reputation and admiration (Kuss, 2013, p. 126).

Kuss (2013) stated that “escapism was one of the reasons people play games online” (p. 126). Some use Internet gaming to escape the duties of real life. This in turn

becomes a way to cope with life, which creates a shift in an individual's mood, causing a dependency upon the game. An internal reward system further reinforces elements that may not be achieved in the real world, leading to extended play and addiction (p. 126).

According to Petry et al. (2014), IGD goes by various monikers, such as gaming or internet use disorder, gaming or internet addiction or dependence, pathological or problematic gaming, etc. Internet gaming addiction (IGA) is defined as “the inability of an individual to control his/her use of the Internet with serious negative consequences” (Lin et al., 2015, p. 137). Per Greenfield (2018), addiction is defined “as a chronic disease of the brain that targets the reward, motivation, memory and other related circuitry” (p. 328).

In addition, research has shown that abnormal functioning within the circuits of the brain may cause biological, psychological, social, and spiritual manifestations that lead an individual to pathologically pursue rewards through substances or other behaviors (Greenfield, 2018, p. 328). Internet and video game addiction is a “reward deficiency syndrome cause by a negative downregulation of dopamine after excessive dopamine release secondary to abnormal neurotransmitter interactions in the mesolimbic system” (p. 331).

Research on Internet gaming addiction (IGA) dates to 1983, where “one of the first reports suggested that video game addiction was an issue for students” (Kuss, 2013, p. 126). The claims that gaming created problems ushered in the first empirically reviewed study on gaming, and the potentially resultant affliction. The research by Kuss (2013) consisted of self-reported cases by young male players who claimed they were

infatuated with their games, and experienced a lack of ability to cease play. Since that time, gaming-related “research has not only increased in quantity, but quality” (p. 133).

Internet gaming addiction is a phenomenon that is “permeating Korean society rapidly due to Internet growth” (Seok, Lee, Park & Park, 2018, p. 35). Internet gaming addiction has increased in 2012 from 1.18% to 1.89% in 2017, suggesting to Korean researchers that the topic needs more attention. Data has indicated that adolescents play games to obtain what they have yet to obtain in the physical world, which can be “friends, being popular or being exception at a hobby when compared to other” (p. 36). Some young people are looking for ways to cure boredom since some of their parents are at work all day, so he or she turns to Internet gaming. Further, “Internet gaming addiction can manifest when a parent, relative or other is overprotective, detached to their child or has unrealistic expectations” (Seok et al., 2018, p. 36).

The research of Yuh (2018) indicated that individuals who enjoyed school and were invested in their academics had a “reduced chance of being diagnosed with Internet gaming addiction” (p. 129). However, the opposite could be true for students who do not enjoy school if the hypotheses is correct. Adolescents who are not invested in their academics and social bonds with their parents are minimal to non-existing. Further, supportive families have been shown to provide a barrier for the child’s productivity to neutralized Internet gaming disorder in its tracks due to social support within a close family. Internet gaming disorder has been shown to be connected to aggression and a disconnection with other people, such as parents and friends (Yuh, 2018).

Online gaming is a time consuming emotionally draining task in long durations where “players can develop carpal tunnel syndrome” (Young, 2009, p. 358). Also,

adolescents are the most problematic concerning gaming because the Internet tends to be required for school work. Additionally, the other symptoms that can manifest from excessive playing are “trembling hands, fantasies about the web and withdrawal” (p. 364). Also, children turn to video games over the Internet as a way to fulfill loneliness and obtain friends because some Internet gaming addicted players can have social issues regarding communication. Various solutions have been suggested to rectify some of the impact on health caused by Internet gaming addiction in adolescents, such as setting time limits, resting eyes for 20-minute duration, offering educational games, changing the games played to something like chess—which offers rewards, praise and challenges. (Young, 2009).

For Young (2009), it is crucial that parents, friends and co-workers know the warning signs for Internet gaming addiction, such as lying to other about work their doing on a computer when he or she is playing a game over Internet. Internet gaming addiction has been defined as individual exposed to technology who suffer from a lack of being able to control his or her impulses leading to possibly health issues. Internet gaming disorder has caused hospitals and clinics to materialize to combat the problem. Video games in general has went through an evolution, especially games that can be played over the internet because currency can be exchanged between players and mountains and towns can be explored. For instance, one player died due to heart failure, having become so immersed in his experience of playing Starcraft for “50 hours with little food and personal hygiene” (Young, 2009, p. 356).

Given such findings, as per this introductory overview, there has been due cause for the American Psychiatric Association taking action via changes to the DSM-5, as per what is below.

II-DSM-5 Diagnostic Criteria for IGD and Controversy

According to Yau and Potenza (2014), “the criteria for Internet gaming disorder were worded parallel to addictions, such as substance and other addictive disorders” (p. 381). The criteria “apply to online gaming and no other Internet discrepancies in behavior, the following present etiology, comorbidities, natural history and treatments to be used” (p. 381).

As discussed in Chapter I, the diagnoses of IGD requires meeting 5 out of 9 must be met within the past year to be considered for diagnosis of IGD. The American Psychological Association (APA, 2013) has provided nine criteria: (1) the preoccupation with Internet games; (2) psychological withdrawal symptoms (anxiety); (3) tolerance, which is defined as the need to spend an increasing amount of time playing games over the Internet; (4) unsuccessful attempts to stop with no success, such as limiting the amount of time gaming over the Internet; (5) lack of Internet in previous hobbies that one previously had interest in; (6) continued use of Internet gaming regardless of being self-aware that the gaming over the Internet is causing real world issues; (7) dishonest to family members and therapists amount the amount of time or that he/she is still gaming over the Internet; (8) use of Internet games to escape a negative state of mind; and (9) the

individual is about to lose their relationship, job or educational opportunities due to Internet gaming (p. 381).

According to Park, Chun, Cho and Kim (2018), Internet gaming addiction was incorporated into the DSM-5 because it was an issue that “the American Psychological Association felt needed more research.” (p. 1). On the other hand, Markey and Ferguson (2017) indicated there has not been a valid explanation as to why IGD was included, but not sex, work, exercise, or eating addictions. One supposition is the theory of moral panic on behalf of parents whose children were engaged in online gaming. Noting this social concern, the APA criterion draws from “the first large scale study IGD” which included “social, physical and mental health” (Markey & Ferguson, 2017, p. 196).

The DSM-5 criteria for Internet gaming disorder was created by a 12-person workgroup (Petry et al., 2014). Such study of internet gaming disorder in America has lagged behind research in Europe, China, and Australia. Per Petry et al. (2014), “absence of sleep, food or both were some of the factors the work group discovered while reviewing more than 250 publications on the topic” (p. 1400).

Ko and Yen (2014) argue that to avoid false positives, DSM-5 criteria for IGD diagnosis should be administered under meticulous consideration. However, “if some of the criteria is found in some gamers generally the characteristic is discovered in low frequencies, shorter duration and less intensity, which are why 5 out of the 9 criteria must be met before labeling an individual under IGD” (p. 1411). According to Ko and Yen (2014), “it is crucial that the severity of the disorder is consider before diagnosing,” as it is likely that casual gamers have met at least one of the criteria at some point in time (p.

1411). Further, when assessing for IGD, “the frequency of the person’s interaction with gaming is important more so than a nominal answer of yes/no” (p. 1412).

Markey and Ferguson (2017) approach problematic gaming by emphasizing how playing video games take up a lot of time, especially among young people, which has caused parents to worry that “their child might suffer from an addiction problem” (p. 195). However, the child might not be addicted, and the parent might be in an exaggeration state due to worrying about their child’s actions. The American Psychological Association has taken a conservative approach regarding Internet gaming disorder because more research is needed before a decision with the APA is made to include the disorder in the “next incarnation of the DSM-5” (p. 195). A person who plays games after work is much different from a person who continuously play games until he or she loses their job or personal relationship. There were 19,000 participant who participated in the study. The participants were from Germany, United States, United Kingdom and Canada. A Rasch model was used to analyze the data. The tools used to analyze data constitutes one of the problems preventing accurate collection of prevalence rates for Internet gaming disorder (Markey & Ferguson, 2017, p. 195).

Scholars have gone so far as to create their own instruments for gathering and analyzing data (Markey & Ferguson, 2017, p. 195). Research findings have led researchers to believe that the criteria used within the DSM may not be sensitive enough, which makes the criteria limited concerning research on Internet gaming addiction (Markey & Ferguson, 2017). As a result, some researchers perceive the DSM as potentially harming those who do not have IGA; this is due to the criteria not being accurate enough to confirm the pathology of Internet gaming disorder.

Singh (2019) discusses how there have been discussions among academics regarding how video game addiction is a mental disorder brought on by an existing disorder rather than being caused “exclusively due to” the playing of “video games over the Internet” (Singh, 2019, p. 172). Data has linked high prenatal testosterone to Internet gaming addiction increased risk. Neuroimaging shows that video game addiction displays neuro and behavioral characteristics of someone that suffers from substance abuse. The International Classification of Diseases has made the decision in June of 2018 to officially “classify Internet gaming disorder as a mental health disorder” (p. 171). However, the American Psychological Association has not done so, but has included a criterion for diagnosing Internet gaming disorder with clients having to meet 5 out of the 9 criteria. Playing games 3 to 4 hours a day and neglecting responsibilities is an early sign that the adolescent could need an intervention via the healthcare provider, etc. Video games are one of the most popular past times for adolescents. The compulsive issue is mostly witness among ages 12 to 25. Also, the most popular games amount the youth that game over the Internet are “Fortnite, Candy Crush, PUBG and World of Warcraft to name a few” (Singh, 2019, p. 171).

III-Prevalence of Internet Gaming

According to Young (2009), “America has up to 90% of its youth playing video games,” while there are 30 million gamers in China and 10% of them suffer from Internet gaming addiction (356). Further, “15% of American children could suffer from Internet gaming disorder” (Young, 2009, p. 356).

However, regarding determining the prevalence of IGD, there are challenges; the various tools used in data analysis is one of the problems for determining the prevalence rates for Internet gaming disorder (Markey & Ferguson, 2017). Hence findings are scattered with ranges from close to zero to as high as 45% among participants (Markey & Ferguson, 2017, p. 195). A recent meta-analysis suggested that the real rate of Internet gaming addiction is around 3% concerning those at risk for IGA in this nation (Markey & Ferguson, 2017).

Exelmans and Van den Bulck (2015) reported that over half of American gamers ages 18 and up play some sort of video game (p. 189). For example, one of the most popular categories of online gaming is massively multiplayer online games (MMOs), such as World of Warcraft. Kuss (2013) indicated that “MMORPGs are some of the most captivating because 46% gamers in China were playing that category” (p. 126).

In their study, Kim et al. (2017) found that “the overall prevalence of Internet addiction is as low as 0.3% to as high as 8% among the youth,” with rates in adults reported as high as 20% (p. 2). Data gathered from several European countries shows that the “prevalence of Internet gaming addiction is 1.6% in adolescents” (Yuh, 2018, p. 128). But Asian participants appeared to have the highest prevalence at 10.4% for boys and 1.2% for girls for a combined sample prevalence of 5.9% for the participant group.

In 2012, there were one billion individuals playing computer games, with an 8% increase in the market, being quite lucrative, also (Kuss, 2013).

IV-Research on Video and Internet Gaming – Related Factors

A review of the literature reveals an array of factors influencing obsessive video game play via the Internet. Satter and Ramaswamy (2014) stated that “more scholarly research needs to be done concerning the Internet and gaming,” as it is becoming challenging to “categorize this element” that is beginning to “occupy people’s lives rapidly” (p. 869). Here, we consider in this section numerous potential factors related to obsessive video play and IGD.

Risk of Depression

Some have reported IGD as associated with depression (Seok et al., 2018). For example, Lam (2014) indicated that “playing games over the net for 9 months has indicted higher depression” (p. 1). Consider the 2004 case of a young man said to “suffer from Internet gaming addiction due to 52 hours of uninterrupted play” (Satter & Rmaswamy, 2014, p. 869). He tried to cease play, but the attempt was not successful. Eventually, “he quit his job, schooling and overindulged in 4 to 5 cups of coffee to stay awake” (p. 869). Further, he “soon developed symptoms of depression, poor concentration, low energy, poor sleep ability and deep feeling of hopelessness and lack of self-worth” (p. 869). He scored an 18 on the Hamilton Depression Rating Scale (HDRS), with problematic findings on the Addiction Severity Index (ASI), indicating both severe depression and severe addiction. His treatment options consisted of both medication and group therapy. As he erased the game Ever Quest from his computer, his prognosis improved. Data shows that games such as Ever Quest create low empathy, low self-

esteem, depression, social isolation, a false identity, and a way to escape the real world. It has been stated that “although no guideline was set when this situation took place within the DSM-IV at the time, treatment should target comorbid psychiatric symptoms and their addiction to Internet gaming” (p. 870).

Self-Esteem

Beard and Wickham (2016) stated “that self-esteem is a large factor concerning the habits related to Internet gaming disorder” (p. 507). The internet world may offer a level of escapism for individuals with poor self-esteem in the real world.

Data has shown that “Internet gaming can be behavioral, but there appears to be strong social components to gaming over the Internet with others while playing a MMORPG” (Beard & Wickham, 2016, p. 507). A person developing a high or low sense of self depends on both failures and successes; to maintain a positive sense of self, some individuals base his or her value on performance within their online environments. (Beard & Wickham, 2016).

Beard and Wickham (2016) used a subsample of (n= 286) to explore the relationship between self-esteem and online gaming. Results displayed a significant correlation between self-worth and Internet gaming ($r = -0.30, p < 0.01$). Some gamers looked for acceptance online due to a limited sense of autonomy and to find validation from external sources offline. Validation for this sample was generally achieved by: being exceptional at online games played with virtual associates; and, being less skilled at the game lead to a negative perception of one’s self (Beard & Wickham, 2016).

Aggression

There are various symptoms associated with Internet gaming disorder and one of them is aggression. Data has shown that “aggression and Internet gaming disorder are associated with one another” (Yuh, 2018, p. 136). According to Yuh (2018), “aggression is learned from the mass media, subculture and family” (p. 130). Family conflict, a controlling parent and aggression can lead to Internet gaming disorder, as suggested by Yuh (2018). Others have also reported that IGD as associated with aggression (Seok et al., 2018).

Sleeping Habits

A body of literature has investigated sleep quality among Internet gamers, finding shorter sleep duration, increased sleep onset latency, and more daytime tiredness among adults gamers ages 18 to 94 years (Exelmans & Van den Bulck, 2015). In experimental studies of those who played MMORPGs, worse sleep outcomes were observed over the past month, compared to individuals who played other game categories (Exelmans & Van den Bulck, 2015).

Exelmans and Van den Bulck (2015) used questionnaires to study a sample of men and women (N=844) related to sleep and internet game play. The average age of participants was 46 years; most of the sample had a bachelor’s degree or higher.. They found that men “played more hours of video games than women combined with age being a factor concerning how long male and females played games prior to sleeping” (p. 191). Those in the youngest age categories (18-35 years old; $M = 45.93$, $SD = 74.63$) played videos game more than the middle age group (36-55 years old; $M = 16.45$, $SD =$

44.80, $P < 0.001$) and the oldest age group (56-94 years old; $M = 8.11$, $SD = 29.24$, $P < 0.001$), with no significant differences between the middle and oldest group. Playing video games at a duration of one hour or more – compared to not playing games at all, or playing for less than one hour – tended to result in irregular sleep patterns, causing fatigue and sleepiness during the day, while “playing video games for long duration made it more difficult to fall asleep immediately” (p. 195). The more an individual gamed, the less quality sleep was obtained. It is also of note that participants who had trouble sleeping were more likely to take sleeping medication (Exelmans & Van den Bulk, 2015).

Hawi, Samaha, and Griffiths (2018) conducted a cross-sectional study in 10 high schools in Hong Kong with students ages 15 to 19 years old, similarly finding that obsessive online play had a demonstrated relationship with sleep duration; they also found a deterioration in one’s sleep cycle related to online role playing and first-person shooter games. Most gamers reported an average length of 7.75 years of game play ($SD = 2.9$) (Hawi et al., 2018). The average number of hours spent online gaming was 2.2 hours/a day, depending on the day; there was a shift in hours during the weekend, where game play doubled within all three groups. Data indicated that 9.2% of individuals in the study suffered from Internet gaming disorder (p. 75). Per Hawi et al. (2018), research also showed that 28% of individuals with sleep issues suffer from IGD. This behavior may be related to desire to advance or sustain a place within a game’s level, or simply the pleasure derived from playing a game (Hawi et al., 2018).

Hawi et al. (2018) found that most participants used more than one platform for online gaming, while 61.3% used three or more platforms. The average number of hours

spent online gaming was 2.2 hours/a day, depending on the day; there was a shift in hours during the weekend, where game play doubled within all three groups. Data indicated that 9.2% of individuals in the study suffered from Internet gaming disorder (p. 75). Per Hawi et al. (2018), research also showed that 28% of individuals with sleep issues suffer from IGD. This behavior may be related to desire to advance or sustain a place within a game's level, or simply the pleasure derived from playing a game (Hawi et al., 2018).

Brain Issues

Park et al. (2018) reported on the brain of Internet gaming addicts, finding evidence they were damaged “when compared to the healthy individuals” (Park et al., 2018, p. 7). Also found were abnormalities of the brain when compared to the group who (p. 4). The data pointed to Internet gaming addiction participants as having “abnormalities that need to be studied more.” (Park et al., 2018, p. 7).

According to Kim et al. (2016), structural and functional changes within the brain seem to “influence thought patterns with IGA” (p. 667). Neuroimaging shows brain alteration due to playing games over the Internet obsessively. Intensive gaming has been shown to change the heart, brain and other autonomic parts of the body. The autonomic changes from extended time spent gaming can be negative due to long gestated hours playing games, lack of sleep, which can cause mental health issues (Kim et al., 2016, p. 669).

Personality Factors

According to Kim et al. (2016), personality “is an important aspect with regard to Internet gaming addiction” (p. 667). IGA is associated with lower heart resting states due to there being a correlation with type D personality. Type D personality is characterized by negative emotional and social expressions. The traits associated with personality D or Type D can be detrimental for the individual with Internet gaming addiction, because it can lead to negative health outcomes in the young. A type D scale 14 (DS14) instrument was used to gather the health outcomes of IGA participants and non IGA participant to compare the two groups. A total of 68 males were sampled. There were 30 who did not have HRV or IGA. “The ages of the participants were 16 to 18 years” (Kim et al., 2016, p. 668). The data showed that individuals who did not have Internet gaming disorder and a higher heart resting state opposed to a lower one, like people with “IGA and type D personality,” were found to have “better health” (p. 671).

There is a belief that individuals with Internet gaming addiction are sensation seekers opposed to those who are not addicted. For Hu et al. (2017), sensation seeking was of interest, being defined as the willingness to take risks “within an environment that tends to be highly stimulating” (p. 2). Previous data had indicated that individuals who play computer games over the Internet are more sensation seeking than people who do not play games over the Internet. A total of 375 Chinese males were left to participate in the study once the data was cleaned and ineligible participants eliminated. Participates were picked from grades 10 to 11, and the ages ranged from 15 to 17 with a mean age of 16.02. “Descriptive statistics, a Sobel test and a bivariate correlation were employed concerning the data” (Hu et al., 2017, p. 3). Results obtained from a mediation model

indicated that sensation seeking and internet gaming were correlated ($p < 0.01$). Both sensation seeking and impulsivity were significantly and positively associated with Internet gaming disorder. Further, impulsive characteristics were correlated with IGA, and the results were significant. The portion that lacked significance was the effects of online gaming and sensation seeking (Hu et al., 2017, p. 4).

V-Focus on Treatment for Internet Gaming Disorder

Few studies have focused on the treatment of IGD. Yau and Potenza (2014) documented a study of 62 children with both Attention Deficit with Hyperactivity Disorder and IGD. Among participants, “some of the children who displayed comorbidity played Starcraft (MMO) more than 30 hours a week” (p. 382). Participants were prescribed methylphenidate and bupropion treatment over an 8-week period; findings indicated that six weeks of bupropion treatment decreased the severity of IGD in this sample.

Despite the findings in the small aforementioned sample, there is currently “no FDA approved treatment for treating Internet gaming disorder officially” (Yau & Potenza, 2014, p. 382). CBT has been suggested, showing results when coupled with mindfulness activities. Currently, few practitioners specialize in the treatment of IGD; several clinics do exist in China, Korea, and the United States. These clinics and their work have not been systematically examined within academic literature.

One treatment option comes from the Computer Gaming Addicts Anonymous who has put together an effective “12 step program for deaddiction of Internet gaming

addicts” (Singh, 2019, p. 173). Cognitive behavioral therapy is seen as another option that has been said via research to yield good results combined with bupropion and mood stabilizers. Technology has become so embedded in the lives of societal members. Some scholars compare video games to compulsive gambling because people cannot stop due to the “pleasure center part of the brain taking over” (p. 172). Video games do have positive effects, such as an increase hand eye coordination, better reflexes, collaboration and cognitive skills. However, video games' negative effects occur when the youth cannot focus on their schooling, physical exercise, family and other social events. Other negative aspects of gaming are increased snacking, headaches, ignoring school, concentration problems— and, even epileptic symptoms can manifest over time . Counseling is a great form of treatment, but there are steps the parents can take within the control features of the electronic device to limit Internet gaming exposure durations. Further, Singh (2019) indicated that children detoxing from Internet gaming addiction should be praised and assisted with moving forward back into “social activities, gym, outdoor games, music and dance” (p. 173).

Conclusion

This chapter provided a review of the literature relevant to the study. Specifically, it covered the follow topics: 1. internet gaming disorders (IGD) and related issues; 2. DSM-5 diagnostic criteria for IGD and controversy; 3. prevalence of internet gaming; 4. research on video and internet gaming—related factors; and, 5. focus on treatment for IGD. The next Chapter, III, will describe in detail the methods used in the study.

Chapter III

METHODS

The chapter will present the methods and procedures utilized in this study. This includes a description of the study design and procedures, including the role of a Chinese consultant, as well as a description of the study participants, and description of research instrumentation. The treatment of data and data analysis plan are also included.

Overview of Study Design and Procedures

This study used a cross-sectional design through the use of an online survey that was hosted on the Qualtrics platform. Key study procedures follow in this section.

Institutional Review Board Approval

Approval was sought by the principal investigator from the Institutional Review Board (IRB) of Teachers College, Columbia University—under “exempt” status—before any collection of data began from # 19-171. First, IRB approval was sought for a study with an English speaking (ES) sample, being successful in receiving exempt status. Next, IRB approval was sought for a study modification involving also conducting the study with a Chinese Mandarin speaking (CMS) sample. That was also successful under an exempt status. *See Appendix A for the two IRB Approval Letters.* Central to IRB approval were the informed consents, which were specifically approved, first for the ES sample

study, then for the CMS sample study. *See Appendix F for the English and Chinese Informed Consents.*

Role of the Chinese Consultant and the Translation Protocol

With receipt of approval for the study modification, the Chinese Consultant to the study, Dr. Li Zian explained her role, including translation, as follows (i.e., taken from the *Appendix B – Chinese Consultant’s Letter*):

...One of my major duties on this project was to translate the original survey from English to Mandarin Chinese. I am a native Chinese speaker and I confirm that all the study materials were conceptually and equivalently translated into Mandarin Chinese sentence by sentence by considering the definition of the original term. The terminologies were translated into accurate, equivalent, and appropriate terms in Mandarin Chinese, and all of the translations are linguistically and culturally appropriate.

This study survey and recruitment materials have been translated into Mandarin Chinese in order to reach a broad Chinese population that is dispersed globally, yet may be recruited through a social media campaign. Of note, the survey was translated verbatim from its original English version. Therefore, this survey is not tailored just for access by any specific ethnic population. Conceptually, it is believed that a survey in Mandarin Chinese would be more broadly distributed, better understood, and responded to more widely by those who are members of the global Chinese population.

Hence, the translated survey was deemed to be both culturally appropriate and well-suited for use in gathering a Chinese Mandarin speaking (CMS) sample.

Participant Recruitment

The study recruited participants via a social media campaign that uses postings of the following message on Facebook, Twitter, YouTube and various gaming sites, as well

as via email, using this core message, as shown in the *Appendix C Recruitment Flyer – English Only*, *Appendix D Recruitment Email –English and Chinese*, and *Appendix E Recruitment Text/Tweet – English and Chinese*.

The Chinese Consultant explained her role (*See Appendix B – Chinese Consultant’s Letter*) in recruiting study participants, below:

There is no physical site or organization or any entity located abroad that is being used by or is associated with this study. Those identifying as Chinese and agreeing to participate in the study may be located or living anywhere in the global community. Indeed, I recently published an article with Dr. Barbara Wallace on the large population of Chinese International students dispersed globally—many of whom can be accessed using the exact same social media strategies used in the Lian and Wallace (2018) study, as well as in this present Miguel Tomez study. I am excited to lend my expertise on recruiting Chinese study participants via social media platforms—as my additional key role in the research—used by Chinese International Students, and to collaborate on this important research study. I am also pleased to serve as the study contact person for all questions in Mandarin Chinese, as mentioned in the Informed Consent and shown on the study email, for example.

Of note, in addition to email, the Chinese Consultant also heavily favored the use of the WhatsApp messaging app for smartphones that is popular with Chinese international students around the globe.

The Principal Investigator similarly sought an ES sample, using his particular knowledge of gaming sites, while recruiting on various social media platforms, as explained above. The Principal Investigator engaged in the additional task of posting the study flyer (*See Appendix C – Recruitment Flyer – English Only*), especially on college and university campuses.

The core recruitment message within all recruitment strategies appears below for inviting the ES sample and CMS sample to participate in the study, using a link to either the ES or CMS survey, respectively below:

GO TO <https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players> to take a short 15-minute survey on your gaming experiences for chance to win 1 of 3 \$100 Amazon gift cards

点击链接<https://tinyurl.com/Internet-Gaming-Study-Chinese>参与一个关于您游戏经历的15分钟简短调查问卷, 您将有机会赢取一张100美元亚马逊礼品卡 (共抽取三张)

Study Incentive for Participation—Amazon Gift Card Prizes

As shown in the core recruitment message, above, a study incentive was used, specifically, a 1 in 250 chance of winning one of 3 \$100 Amazon gift cards—for both the ES sample and the CMS sample. For the Amazon.com gift cards, participants entered the lottery by entering their email addresses into a program administered by the webmaster (Dr. Rupananda Misra) for Professor Wallace’s Research Group on Disparities in Health (RGDH—i.e. the primary sponsor of the research study). The Principal Investigator did not have access to the email addresses, and participants were made aware that their study information was not linked to their email addresses, thereby ensuring their confidentiality. Upon closing the study, three randomly chosen individuals were selected to win \$100 gift card prizes, as per the program administered by the RGDH webmaster.

Study Inclusion/Exclusion Criteria

The study used a screening tool at the beginning of the survey (*See Appendix G – Survey Tool in English and Chinese*) that embodied the criteria for study inclusion or exclusion, as follows:

1-Are you at least at least 18 years of age?

Yes___ No___

2-Are you able to read and understand English on a 12th grade level? *

Yes___ No___

3-Do you play video games at least once a week, *at a minimum*?

Yes___ No___

4-Do you consider yourself to be involved in Internet gaming?

Yes___ No___

5-Have you been playing video games or involved in Internet gaming for *at least the past six months*?

Yes___ No___

6-Are you able to devote about **15 minutes** to this study at this time—for a chance to win one of three \$100 Amazon gift cards?

Yes___ No___

The Chinese screening tool replicated the inclusion/exclusion criteria (*See Appendix G – Survey Tool in English and Chinese*).

Other Study Procedures

Snowballing also occurred, as those who completed the study were invited to forward the study link to others who would meet the inclusion criteria.

Once recruited, participants who joined the study had to read the Informed Consent (*See Appendix F – English and Chinese Informed Consents*), and indicate their meeting all study inclusion criteria.

Description of Study Sample—Completers Versus Non-Completers

The ES and CMS samples were successfully recruited, as they followed the survey link to access the survey, and began the survey. A total of 258 participants, including 117 ES and 141 CMS, provided Informed Consent and began the survey. Of the 117 ES, only 101 (86.3%) completed enough of the survey to provide data for the primary outcome variable. Of the 141 MCS, only 130 (92.2%) completed enough of the survey to provide data for the primary outcome variable. This reduced the whole final sample size for data analysis to 231 (89.5%), as a total of 27 were not included, given they did not complete the survey to the point of providing data for the primary outcome variable. Comparisons between the groups of study completers (n=231) versus non-completers (n=20 with sufficient data) showed, using independent samples t-tests, that there were no significant differences between the two groups for age, income, or education.

Description of the Research Instrumentation

The measures and instruments used in the study include a combination of those found in the published research literature (e.g. Pontes & Griffiths, 2015), and those adapted from prior studies conducted under the auspices of the Research Group on Disparities in Health (RGDH), Teachers College, Columbia University—of which the

Principal Investigator is a member; and, for which Professor Barbara Wallace is the Director of the RGDH.

Part I: Basic Demographics (BD-10)

The Basic Demographics (BD-10) obtains demographic information, including age, race/ethnicity, sexual orientation, year in college, and annual household income. The BD-10 was developed by Professor Barbara Wallace for use by members of the RGDH.

Part II: Gaming Initiation, Frequency and Other History and Gaming Behavior (GIF-OHGB-9)

The GIF-OHGB-9 obtains information regarding age of gaming initiation, frequency of gaming (hours per week), maximum length of play in a 24 hour period, types of devices owned and used for play, top 3-5 favorite games (optional), and the experience of any images from virtual reality games transferring into actual reality. This tool was taken from the work of (Pontes & Griffiths, 2015). Pontes and Griffiths (2015) describe the development and validation of their short psychometric scale. In this study, items # 3, 4, 5 and 8 were added as new items, being co-created by the Principal Investigator and the dissertation sponsor, as follows:

3-Since you first started playing, have you ever played video games or engaged in internet gaming every day of the week, or daily?

Yes No

4-On a single day, or in a 24 hour period, what is the most amount of time in hours that you ever played?

1-3 hours 4-6 hours 7-9 hours 10-13 hours 14-16 hours
 17-19 hours 20-23 hours 24 hours

5- Have you ever started seeing things in the virtual world from a game come into the real world? Yes No

8- Check all the following that you have used for your gaming activities:

Nintendo Switch____ PlayStation 4____ Xbox One____ Desktop
 Computer____ Laptop Computer____ iPad____ Mobile Phone____ Virtual
 Reality____ Social Media Gaming (example: Facebook games)____
 Other____(Please explain)

Part III: Cigarettes and Other Substance Use (COSU-3)

This short 3 item scale, the COSU-3, was also taken from the same work of Pontes and Griffiths (2015), as described above. In this study, for item # 2, more options were added, beyond their cigarettes and alcohol; and items # 1 & 3 were added as new items, as follows:

1-Have you used any of the following substances in the past 30 days? (Check all that apply)

Cigarettes Yes No
 E-cigarettes Yes No
 Alcohol Yes No
 Marijuana/oil Yes No
 Heroin/Other Opioid Yes No
 Cocaine Yes No
 Other (explain)_____ Yes No

3-Do you use any of the following substances daily? (Check all that apply)

Cigarettes Yes, daily No
 E-cigarettes Yes, daily No
 Alcohol Yes, daily No
 Marijuana/oil Yes, daily No
 Heroin/Other Opioid Yes, daily No
 Cocaine Yes, daily No
 Other (explain)_____ Yes, daily No

Part IV-A: Internet Gaming Disorder Scale – Short Form (IGDS-SF-9)

The IGDS-SF-9 is the core scale of the study, as it provides the study outcome variable of the extent to which study participants meet the criteria for Internet Gaming Disorder (IGD), as per the criteria established by the American Psychiatric Association (APA, 2013). A diagnosis of IGD involves meeting 5 of 9 criteria, as per the APA (2013). As a pioneering effort, Pontes and Griffiths (2015) sought to measure the DSM-5 IGD, while describing the development and validation of this 9-item scale.

The IGDS-SF-9 asks about the last 12 months, as shown, below, in the instructions and via two sample questions (i.e. rated on Likert scale with 1=strongly disagree to 5=strongly agree):

Instructions: These questions will ask you about your gaming activity during the past year (i.e., last 12 months). By gaming activity we understand any gaming-related activity that has been played either from a computer/laptop or from a gaming console or any other kind of device (e.g., mobile phone, tablet, etc.) both online and/or offline.

1-Do you feel preoccupied with your gaming behavior? (Some examples: Do you think about previous gaming activity or anticipate the next gaming session? Do you think gaming has become the dominant activity in your daily life?)
1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

2-Do you feel more irritability, anxiety or even sadness when you try to either reduce or stop your gaming activity?
1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

Scoring information. The total scores can be obtained by summing up all responses given to all nine items of the IGDS9-SF and can range from a minimum of 9 to a maximum of 45 points, with higher scores being indicative of a higher degree of

Internet Gaming Disorder, as per Pontes and Griffiths (2015). In order to differentiate disordered gamers from non-disordered gamers, researchers should check if participants have endorsed at least five criteria out of the nine by considering answers as ‘5: Very Often’, which translates as endorsement of the criterion (Pontes & Griffiths, 2015).

Pontes and Griffiths (2015) used confirmatory factor analyses for the 9 items, while all factor loadings were statistically significant (i.e., $p < .0001$). Also, reported was a Cronbach’s alpha of .87 ($n=1060$) with the nine items of the IGD9-SF, as very good internal consistency.

Part IV-B: Engagement in Violence Scale (EIVS-1)

The EIVS-1 is a new one item scale added to this study by the Principal Investigator, given research indicated IGD and aggression may be linked (Yuh, 2018; Seok et al., 2018). While not a part of the above discussed tool for measuring extent to which participants met the criteria for IGD, and not a DSM-5 criteria for IGD, the EIVS-1 appears as a supplemental question to the 9 criteria questions asked above, using the IGDS9-SF (see above). Here, the EIVS-1 asks, as follows:

Supplemental Question #10-Have you ever been violent—hitting, striking, or pushing someone (parent, sibling, peer, or co-worker, etc.), or destroyed anything (breaking objects, smashing things), because of your gaming activity?
*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
 5_Strongly agree*

An Additional Supplemental Question #11

While not constituting a survey part, there was also supplemental question #11, which appeared to be part of the 9 criteria for meeting the diagnosis of IGD, yet was not.

Supplemental Question # 11-Because of your gaming activity, did you seek out any kind of counseling (e.g. mental health professional) in the past year?

No Yes Not Applicable (i.e. no experience of any of the issues cited above due to my gaming behavior)

This question follows Lian (2013), and is added with 2 other items like this in Part V for seeking out any kind of counseling for depression or anxiety. The total of 3 items forms the Part VI Measure of Mental Health Services Utilization (M-MHSU-3) advanced by Lian (2017).

Part V: Retrospective Depression & Anxiety (R-DA-4)

The R-DA-4 study tool is a standard short measure commonly used by Research Group on Disparities in Health (RGDH). For this study, it was shortened (not asking about past month, past 6 months, only asked about past year).

Part VI: Measure of Mental Health Services Utilization (M-MHSU-3)

Following Lian (2017), this is derived from the above survey Part V. Taking from the above survey Part V, the M-MHSU-3 is based on items #2 & 4—and from the third source of a **supplemental item # 11** that was described, above. The 3rd source item is different from what Lian (2017) used. These 3 items are summed to create a measure of mental health service utilization, as a continuous variable ranging from 0 to 3, given there are 3 questions scored, as follows: No=0, Yes = 1.

Part VII: General Help Seeking Questionnaire (GHSQ-2)

The level of general mental health help-seeking behavior is measured by the General Help-Seeking Questionnaire (GHSQ-2), as a 2-item scale developed by Wilson, Deane, Ciarrochi, and Rickwood (2005). The Cronbach's Alpha for the two main items of the GHSQ-2 was 0.847, which indicated good internal consistency, as per Wilson et al. (2005). The first question asks:

First, for the **Personal/Emotional Scale**, participants are asked, "If you were having a personal or emotional problem, how likely is it that you would seek help from the following people, using a Likert Scale (1=extremely unlikely to 7=extremely likely):

1. Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de'facto) _____
2. Friend (not related to you) _____
3. Parent _____
4. Other relative / family member _____
5. Mental health professional (e.g., psychologist, social worker, counsellor) _____
6. Phone helpline (e.g., Lifeline) _____
7. Doctor / General Practitioner _____
8. Minister or religious leader (e.g. Priest, Rabbi, Chaplain) _____
9. I would not seek help from anyone _____

Second, for the **Suicide Scale**, participants are asked, "If you were experiencing suicidal thoughts, how likely is it that you would seek help from the following people, using a Likert Scale (1=extremely unlikely to 7=extremely likely)—given the same 9 options, as above.

Part VIII: Perceived Social Support (PSSS-5)

This is a tool created for use by the Research Group on Disparities in Health (RGDH). It was first used in Lian (2017). This follows from prior research on a lack of social support among those engaged in Internet gaming, and depictions of the lonely and socially dislocated gamer (Dengah et al., 2018). Lian (2017) reported the new five-item Perceived Social Support scale (PSSS-5) had Cronbach's Alpha of 0.901 (5 items), which indicated excellent internal consistency. With the PSSS-5, it starts by explaining social support, as follows:

Having SOCIAL SUPPORT means having family, friends, peers, room-mates, or neighbors that live near you and can aid in all the ways listed, below. Please indicate the extent to which you experience SOCIAL SUPPORT in your life currently (i.e., right now).

Below, please see the scoring (1 to 6), and sample questions:

3. I could borrow money from them if my wallet/purse was stolen and I needed money (e.g. for transportation to take a bus, subway, to get to school or back to where you live)

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

4. I could get food from them if I was hungry and had no food because of some emergency in my life

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

Part IX: Rating of Offline Social Support (R-Offline-SS-2)

The R-Offline-SS-2 is a new tool created for use by the Principal Investigator and his dissertation sponsor, given findings in the literature; and, it is for use by the Research Group on Disparities in Health (RGDH)—with first-time use in this study. Following Dengah et al. (2018), new research using mixed methods provides a richer and more complex picture, with gamers having meaningful social connections both online and offline. Thus, there is a rationale for this study also introducing this new short 2-item scale that permits participants rating of Off-Line Social Support (R-OFFLINE-SS-2)—while the scale that follows is also rooted in the same rationale and work of Dengah et al. (2018).

Part X: Rating of Online Social Support (R-Online-SS-2)

The R-Online-SS-2 was created for use by the Principal Investigator and his dissertation sponsor, for use by the Research Group on Disparities in Health (RGDH)—with first-time use in this study. See above for the roots of this tool in the work of Dengah et al. (2018).

Part XI-Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RP-SD-R-1)

This is a new single item scale created for first time use in studies in 2018 by the dissertation sponsor, and for use in studies sponsored by the Research Group on Disparities in Health (RGDH)—for which she serves as Director. This 1-item social

desirability scale was designed to help achieve the goal of reducing as much of the burden of survey response time on participants as possible. The SIR-RP-SD-R-1 asks:

1-I sometimes say things that I think will please people, or what I think they want to hear—versus the honest truth, which might be difficult or painful for other people to hear and accept, or might lead them to judge me harshly...

I rate myself on a scale of 0 to 10, as follows:

0	1	2	3	4	5	6	7	8	9	10
0-I am not like										10-I am like
this at all										this all the

Treatment of the Data

Data collected with the ES sample and CMS sample were cleaned, combined, and matched so items on each of the ES and CMS survey items were equivalent to each other. A final whole sample was prepared for data analysis by being transferred from the Qualtrics platform to the latest version of SPSS, 25.0, which was used in data analysis.

Data Analysis Plan

Given a global sample (N=231) composed of English speaking (ES, n=101) and Chinese Mandarin speaking (CMS, n=130) men and women who met the study inclusion criteria (i.e., play video games at least once a week at a minimum, consider themselves involved in Internet gaming, and have been gaming for the past six months) and completed an online survey in response to a social media campaign (*i.e. online invitation to take the study survey for a chance to win 1 of 3 \$100 Amazon gift cards*), this study answered the following research questions—using the *data analysis plan* specified:

1-What were their demographic characteristics (gender, age, race/ethnicity, US born [yes/no], live in US [yes/no], Chinese born [yes/no], lives in China [yes/no], partner [yes/no], employed [yes/no], student [yes/no], annual household income, level of education, insurance [private, other, none])?

Part I: Basic Demographics (BD-11)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

2-What was their age of gaming initiation, frequency of gaming (hours per week), maximum length of play in a 24 hour period, types of devices owned and used for play, top 3-5 favorite games (optional), and experience of any images from virtual reality games transferring into actual reality?

Part II: Gaming Initiation, Frequency & Other History and Gaming Behavior (GIF - OHGB-9)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

3-What was the prevalence and frequency of using cigarettes and other substances (cigarettes, e-cigarettes, alcohol, marijuana, heroin/other opioid, cocaine, etc.)?

Part III: Cigarette and Other Substance Use (COSU-3)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

4-What was the prevalence of Internet Gaming Disorder (IGD), as an expression of addiction to gaming activity, as per the DSM-5 of the *Diagnostic and Statistical Manual of Mental Disorders*? And, did they attribute their engagement in any violence to gaming activity?

Part IV-A: Internet Gaming Disorder Scale – Short Form (IGDSSF-9)

Part IV-B: Engagement in Violence Scale (EIVS-1) (Supplemental Violence Question # 10)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

5-What were their experiences of depression or anxiety in the past year?

Part V: Retrospective Depression & Anxiety (R-DA-4)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

6-To what extent did they access mental health services for any past year gaming activity, depression or anxiety?

Part VI: Measure of Mental Health Services Utilization (M-MHSU-3)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

7-What was their level of general help-seeking from varied sources (e.g., intimate partner, friend, parents, family, minister/religious leader, etc.) for *personal/emotional problems* and *suicidal feelings*, respectively?

Part VII: General Help Seeking Questionnaire (GHSQ-2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

8-What was their perceived level of social support?

Part VIII: Perceived Social Support (PSSS-5)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

9-How did they rate the quality and importance in their life of any *off-line social support* they receive from other people?

Part IX: Rating of Off-Line Social Support (R-Offline-SS2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

10-How did they rate the quality and importance in their life of any *on-line social support* they receive from other people?

Part X: Rating of On-Line Social Support (R-Online-SS2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

11-Using a new one item scale for measuring the risk of providing socially desirable responses, how do they score?

Part XI: Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RP-SD-R-1)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

12-Were there any significant relationships between the study outcome variable of extent to which they meet DSM-5 diagnostic criteria for IGD and selected demographics and other variables? And, were there significant differences between American and Chinese participants?

Data Analysis Plan: Inferential statistics (independent t-tests and Pearson correlation)

13-What were the significant predictors of the study outcome variable of extent to which they meet DSM-5 diagnostic criteria for IGD, while controlling for socially desirable responses?

Data Analysis Plan: Backward stepwise regression.

Conclusion

The chapter described in detail the methods used in the present study. This included an overview of the study design, study procedures, recruitment of participants, and description of research instrumentation. The role of the Chinese consultant was also elaborated upon with regard to translation tasks and recruiting the CMS sample. The ended with how data was managed and analyzed.

The following chapter, IV, will provide the study results of data analysis.

Chapter IV

RESULTS

The chapter will discuss the results of the data analysis. Results will be organized and presented by research question. In addition, results will be further organized in Tables that summarize the findings of the research.

Data Analysis Results by Study Question

Results for Research Question #1

What were their demographic characteristics (gender, age, race/ethnicity, US born [yes/no], live in US [yes/no], Chinese born [yes/no], lives in China [yes/no], partner [yes/no], employed [yes/no], student [yes/no], annual household income, level of education, insurance [private, other, none])? Part I: Basic Demographics (BD-11).

For gender, 62.4% (n=63) of the ES sample was male, while 55.4% (n=72) of the CMS sample was male. The ES sample had a mean age of 29.34 (SD=8.396, Min=18, Max=52), and the CMS sample had mean age of 25.65 (SD=7.514, Min=18, Max=57). While the CMS sample indicated they were Asian (99.2%, n=129), the ES sample was diverse, including 58% White (n=59), 17.8% (n=59) Asian, and 11.9% (n=12) Black.

Regarding annual household income, for a mean of 3.78 (SD=1.863 Min=1, Max=9), or closest to category 4, the ES sample reported \$40,000-\$49,000; and, for a

mean of 3.26 SD=2.569, Min=1, Max=, or closest to category 3, the CMS sample reported \$20,000 to \$39,000).

See Table 1.

Table 1. Demographic Characteristics (BD-10) (N=231)

	N	%
Gender		
English Speaking Sample (N=101)		
Female	37	36.6
Male	63	62.4
Chinese Mandarin Speaking Sample (N=130)		
Female	58	44.6
Male	72	55.4
Age		
English Speaking Sample (N=101)		
18-25	42	41.6
26-35	36	35.7
36-45	18	18
48-52	5	5
<i>M=29.34, SD=8.396, Min=18, Max=52</i>		
Chinese Mandarin Speaking Sample (N=130)		
18-25	96	73.7
26-34	19	14.6
38-45	12	9.1
54-57	3	2.3
<i>M=25.65, SD=7.514, Min=18, Max=57</i>		
Household Annual Income		
English Speaking Sample (N=101)		
1. Less than \$9,000	16	15.8
2. \$10,000 to \$19,000	9	8.9
3. \$20,000 to \$39,000	24	23.8
4. \$40,000 to \$49,000	9	8.9
5. \$50,000 to \$99,999	26	25.7
6. \$100,000 to \$199,999	14	13.9
7. \$300,000 to \$399,000	2	2.0
8. \$400,000 to \$499,000		
<i>M=3.78, SD=1.863 Min=1, Max=9</i>		
Chinese Mandarin Speaking Sample (N=130)		
1. Less than \$9,000	42	32.3
2. \$10,000 to \$19,000	20	15.4

3. \$20,000 to \$39,000	25	19.2
4. \$40,000 to \$49,000	11	8.5
5. \$50,000 to \$99,999	12	9.2
6. \$100,000 to \$199,999	7	5.4
7. \$200,000 to \$299,000	2	1.5
8. \$300,000 to \$399,000	4	3.1
9. \$500,000 to \$799,000	2	1.5
10. \$800,000 or more	5	3.8
<i>M=3.26, SD=2.569, Min=1, Max=11</i>		

Race/Ethnicity

English Speaking Sample (N=101)		
Black (non-Hispanic descent)	12	11.9
White (non-Hispanic descent)	59	58.4
Asian	18	17.8
Hispanic/Latino	10	9.9
Native American	1	1.0
Arab	2	2.0
Other	4	4.0
Chinese Mandarin Speaking Sample (N=131)		
Asian	129	99.2
Missing	2	1.5

Education

English Speaking Sample (N=101)		
1. Less than Highschool	2	2.0
2. High school	20	19.8
3. Some college or certificate	17	16.8
4. Associates	7	6.9
5. Bachelors	29	28.7
6. Master	24	23.8
7. Doctoral	2	2.0
<i>M=4.22, SD=1.635, Min=1, Max=8</i>		
Chinese Mandarin Speaking Sample (N=131)		
1. Less than High School	1	.8
2. High School	9	6.9
3. Some college or certificate	16	12.3
4. Associates	4	3.1
5. Bachelors	60	46.2
6. Master	21	16.2
7. Doctoral	5	3.8
8. Medical Degree	14	10.8
<i>M=1.868, SD=5.19, Min=1, Max=9</i>		

Partner

English Speaking Sample (N=101)

No	48	47.5
Yes	53	52.5
Chinese Mandarin Speaking Sample (N=130)		
No	74	56.9
Yes	56	43.1
Employed		
English Speaking Sample (N=101)		
No	34	33.7
Yes	67	66.3
Chinese Mandarin Speaking Sample (N=130)		
No	90	69.2
Yes	40	30.8
Student		
English Speaking Sample (N=101)		
No	53	52.5
Yes	48	47.5
Chinese Mandarin Speaking Sample (N=130)		
No	36	27.7
Yes	94	72.3
U.S. Born		
English Speaking Sample (N=101)		
United States	73	72.3
Chinese Mandarin Speaking Sample (130)		
Missing	130	100.0
Live in U.S.		
English Speaking Sample (N=101)		
United States	88	87.1
Chinese Mandarin Speaking Sample (N=130)		
Missing	130	100.0

Insurance status for the ES sample indicates a high number of participants insured under private insurance 54.5% (n=55), while the CMS sample indicated use of an HMO at 40% (n=52). Some 12.9% (n=13) and 5.4% (n=7) of the English speaking and Chinese Mandarin speaking, respectively, had no insurance.

See Table 2.

Table 2. Insurance Status (BD-10) (N=231)

	N	%
Insurance Status		
English Speaking Sample (N=101)		
1. Private Insurance	55	54.5
2. HMO Insurance	4	4.0
3. Medicaid Insurance	18	17.8
4. Medicare Insurance	9	8.9
5. Other Insurance	7	6.9
6. None	13	12.9
Chinese Mandarin Speaking Sample (N=130)		
1. Private Insurance	39	30.0
1. HMO Insurance	52	40.0
2. Medicaid Insurance	22	16.9
3. Medicare Insurance	22	16.9
4. Other Insurance	4	3.1
5. None	7	5.4

Results for Research Question #2

What was their age of gaming initiation, frequency of gaming (hours per week), maximum length of play in a 24 hour period, types of devices owned and used for play, top 3-5 favorite games (optional), and experience of any images from virtual reality games transferring into actual reality? Part II: Gaming Initiation, Frequency & Other History and Gaming Behavior (GIF -OHGB-9).

For the ES sample, the mean age of gaming initiation was 1.81 (SD=.821, Min=1, Max=4) for closest to between ages 7 and 12, and for the MCS sample the mean was 2.96 (SD=.872, Min=1, Max=4) for between the ages of 13 and 17.

Regarding frequency of gaming in hours per week, for the ES sample, the mean hours per week spent gaming was 2.58 for between 8-14 hours and 15-20 hours (min 1,

max 6, SD=1.402); and, for the CMS sample, mean hours per week spent gaming was 1.79 for closest to less than 7 hours (min 1, max 6, SD=1.166).

For ever engaging in gaming on a daily basis, for the ES sample, 86.1% (n=87) had done so, while for the CMS sample 80% (n=104) had done so. Within a single 24 hour period, the ES sample spent a mean of 3.63 for closest to category 4, or 10-13 hours gaming (SD=1.804, Min=1, Max=8); and, the CMS spent a mean of 2.97 for closest to category 3, or 7-9 hours (SD=1.778, Min=1, Max=8).

Some 91.1% (n=92) of the ES sample owned a game console or other dedicated gaming device, while 43% (n=56) of the CMS sample owned them. Also, 100% (n=101) of the ES sample owned a mobile phone with Internet access, while 98.5% (n=128) of the CMS sample owned them.

For the ES sample, their top favorite gaming devices were mobile phone (77.2%, n=78), laptop (67.3%, n=68), and desktop computer (55.4%, n=56), while, similarly, for the CMS sample their top favorites were the same—i.e. mobile phone (86.9%, n=113), laptop (58.5%, n=76), and desktop (45.4%, n=59).

Regarding ever starting to see things in the virtual world from a game come into the real world, 21.8% (n=22) of the ES sample had this experience, and 22.3% (n=29) of the CMS had that experience.

See Table 3.

Table 3. Gaming Initiation, Frequency & Other History and Gaming Behavior (GIF-OHGB-8) (N=231)

	N	%
At What Age Did You First Begin to Play Video Games, or Begin Internet Gaming		
English Speaking Sample (N=101)		
1. Before age 5	40	39.6
2. Between age 7 and 12	45	44.6
3. Between age 13 and 17	11	10.9
4. After age 18	5	5.0
<i>M=1.81, SD=.821, Min=1, Max=4</i>		
Chinese Mandarin Speaking Sample (N=130)		
1. Before age 5	8	6.2
2. Between age 7 and 12	44	33.8
3. Between age 13 and 17	42	32.3
4. After age 18	24	18.5
5. I do not recall	12	9.2
<i>M=2.69, SD=.872, Min=1, Max=4</i>		
How Many Hours per Week do You Play Video Games, or Engage in Internet Gaming		
English Speaking Sample (N=101)		
1. Less than 7 hours	24	23.8
2. Between 8 and 14 hours	33	32.7
3. Between 15 and 20 hours	22	21.8
4. Between 21 and 30 hours	11	10.9
5. Between 31 and 40 hours	5	5.0
6. More than 40 hours	6	5.9
<i>M=2.58, SD=1.402, Min=1, Max=6</i>		
Chinese Mandarin Speaking Sample (N=130)		
1. Less than 7 hours	71	54.6
2. Between 8 and 14 hours	35	26.9
3. Between 15 and 20 hours	13	10.0
4. Between 21 and 30 hours	6	4.6
5. Between 31 and 40 hours	1	.8
6. More than 40 hours	4	3.1
<i>M=1.79, SD=1.166, Min=1, Max=6</i>		
Since you First Started Playing, Have You Ever Played Video Games or Engaged in Internet Gaming Every Day of The Week, or Daily		
English Speaking Sample (N=101)		
Yes		
Chinese Mandarin Speaking Sample (N=130)		
No		

On a Single Day, or in a 24 Hour Period, What is the Most Amount of Time in Hours that you ever Played

English Speaking Sample (N=101)

1. 1-3 hours	10	9.9
2. 4-6 hours	24	23.8
3. 7-9 hours	15	14.9
4. 10-13 hours	22	21.8
5. 14-16 hours	15	14.9
6. 17-19 hours	8	7.9
7. 20-23 hours	3	3.0
8. 24 hours	4	4.0

M=3.63, SD=1.804, Min=1, Max=8

Chinese Mandarin Speaking Sample (N=130)

1. 1-3 hours	30	23.1
2. 4-6 hours	35	26.9
3. 7-9 hours	20	15.4
4. 10-13 hours	21	16.2
5. 14-16 hours	11	8.5
6. 17-19 hours	8	6.2
7. 20-23 hours	1	.8
8. 24 hours	4	3.1

M=2.97, SD=1.778, Min=1, Max=8

Do You Own a Game Console or Other Dedicated Gaming Device

English Speaking Sample

Yes	92	91.1
No	9	8.9

Chinese Mandarin Speaking Sample

Yes	56	43.1
No	74	56.9

Check All of the Following that You have Used for your Gaming Activities

English Speaking Sample (N=101)

1. Nintendo Switch	49	48.5
2. PlayStation 4	55	54.5
3. Xbox One	47	46.5
4. Desktop	56	55.4
5. Labtop	68	67.3
6. iPad	34	33.7
7. Mobile Phone	78	77.2
8. Virtual Reality	16	15.8
9. Social Media	33	32.7
10. Other	6	5.9
11. Missing	95	94.1

Chinese Mandarin Speaking Sample (N=130)

1. Nintendo Switch	27	20.8
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2. PlayStation 4	17	13.1
3. Xbox One	8	6.2
4. Desktop	59	45.4
5. Laptop	76	58.5
6. iPad	52	40.0
7. Mobile Phone	113	86.9
8. Virtual Reality	6	4.6
9. Social Media	39	30.0
10. Other	1	.8

Have you Ever Started Seeing Things in the Virtual World from a Game come into the Real World

English Speaking Sample (N=101)

No	79	78.2
Yes	22	21.8

Chinese Mandarin Speaking Sample (N=130)

No	101	77.7
Yes	29	22.3

Do You Own a Mobile Phone Device with Internet Access

English Speaking Sample (N=101)

Yes	101	100.0
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Mandarin Speaking Sample (N=130)

Yes	128	98.5
No	2	1.5

Results for Research Question #3

What was the prevalence and frequency of using cigarettes and other substances (cigarettes, e-cigarettes, alcohol, marijuana, heroin/other opioid, cocaine, etc.)? Part III: Cigarette and Other Substance Use (COSU-3).

Some 83.2% (n=84) of the ES sample denied using cigarettes in the past 30 days, while 75.2% (n=98) of the CMS sample also had not. And, 54.5% (n=55) of the ES sample denied drinking alcohol in the past 30 days, while 71.5% (n=93) of the CMS sample also had not. Similarly, for marijuana, 83.2% (n=84) of the ES sample, and 100%

(n=130) of the Chinese sample had not used it in the past 30 days. For cocaine, 100% of the ES sample (n=101) and CMS sample (n=130) had not used it in the past 30 days.

Regarding 3x per week use of substances, 28% (n=27) of the CMS sample had used cigarettes at this frequency, while only 5% of the ES sample did so. For daily use of cigarettes, the CMS sample had 15.4% (n=20) who did so, while only 5% (n=5) of the EPS did so.

See Table 4.

Table 4. Cigarette and Other Substance Use (COSU-3)

	N	%
Have you Used Any of the Following Substances in the Past 30 Days		
Have You Used Cigarettes in the Past 30 Days		
English Speaking Sample (N=101)		
Yes	17	16.8
No	84	83.2
Chinese Mandarin Speaking Sample (N=130)		
Yes	32	24.6
No	98	75.4
Have You Used E-Cigarettes in the Past 30 Days		
English Speaking Sample (N=101)		
Yes	8	7.9
No	93	92.1
Chinese Mandarin Speaking Sample (N=130)		
Yes	6	4.6
No	124	95.4
Have You Used Alcohol in the Past 30 Days		
English Speaking Sample (N=101)		
Yes	46	45.5
No	55	54.5
Chinese Mandarin Speaking Sample (N=130)		
Yes	37	28.5
No	93	71.5

Have You Used Marijuana/Oil in the Past 30 Days

English Speaking Sample (N=101)		
Yes	17	16.8
No	84	83.2
Chinese Mandarin Speaking Sample (N=130)		
No	130	100.0

Have You Used Heroin/Other Opioid in the Past 30 Days

English Speaking Sample (N=101)		
Yes	1	1.0
No	100	99.0
Chinese Mandarin Speaking Sample (N=130)		
No	130	100.0

Have You Used Cocaine in the Past 30 Days

English Speaking Sample (N=101)		
No	101	100.0
Chinese Mandarin Speaking Sample (N=130)		
No	130	100.0

Have You Used Other Substances in the Past 30 Days

English Speaking Sample (N=101)		
Yes	1	1.0
No	100	99.0
Chinese Mandarin Speaking Sample (N=130)		
No	130	100.0

Do You Use Any of the Following Substances 3 Times Per Week-Cigarettes

English Speaking Sample (N=101)		
Yes	5	5.0
No	14	13.9
Chinese Mandarin Speaking Sample (N=130)		
Yes	27	20.8
No	25	19.2

Do You Use Any of the Following Substances 3 Times Per Week-E-Cigarettes

English Speaking Sample (N=101)		
Yes	2	2.0
No	17	16.8
Chinese Mandarin Speaking Sample (N=130)		
Yes	3	2.3
No	49	37.7

Do You Use Any of the Following Substances 3 Times Per Week-Alcohol

English Speaking Sample (N=101)		
Yes	6	5.9

No	13	12.9
Chinese Mandarin Speaking Sample (N=130)		

Yes	12	9.2
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No	40	30.8
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Do You Use Any of the Following Substances 3 Times Per Week-Marijuana/Oil

English Speaking Sample (N=101)

Yes	1	1.0
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No	18	17.8
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Chinese Mandarin Speaking Sample (N=130)

No	52	40.0
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Do You Use Any of the Following Substances 3 Times Per Week-Heroin/Other Opioid

English Speaking Sample (N=101)

Yes	2	2.0
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No	17	16.8
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Chinese Mandarin Speaking Sample (N=130)

No	52	40.0
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Cocaine Use 3 Times Per Week

English Speaking Sample (N=101)

Yes	1	1.0
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No	18	17.8
----	----	------

Chinese Mandarin Speaking Sample (N=130)

No	52	40.0
----	----	------

Do You Use Cigarettes Daily

English Speaking Sample (N=101)

Yes	5	5.0
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No	14	13.9
----	----	------

Chinese Mandarin Speaking Sample (N=130)

Yes	20	15.4
-----	----	------

No	32	24.6
----	----	------

Do You Use E-Cigarettes Daily

English Speaking Sample (N=101)

Yes	2	2.0
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No	17	16.8
----	----	------

Chinese Mandarin Speaking Sample (N=130)

Yes	4	3.1
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No	48	36.9
----	----	------

Do You Use Alcohol Daily

English Speaking Sample (N=101)

Yes	2	2.0
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No	17	16.8
Chinese Mandarin Speaking Sample (N=130)		
Yes	5	3.8
No	47	36.2
Do You Use Marijuana/Oil Daily		
English Speaking Sample (N=101)		
Yes	1	1.0
No	18	17.8
Chinese Mandarin Speaking Sample (N=130)		
No	52	40.0
Do You Use Heroin/Other Opioid Daily		
English Speaking Sample (N=101)		
Yes	2	2.0
No	17	16.8
Chinese Mandarin Speaking Sample (N=130)		
No	52	40.0
Do You Use Cocaine Daily		
English Speaking Sample (N=101)		
Yes	1	1.0
No	18	17.8
Chinese Mandarin Speaking Sample (N=130)		
No	52	40.0
Do You Use Other Substances Daily		
English Speaking Sample (N=101)		
Yes	1	1.0
No	18	17.8
Chinese Mandarin Speaking Sample (N=130)		
No	52	40.0

Results for Research Question #4

What was the prevalence of Internet Gaming Disorder (IGD), as an expression of addiction to gaming activity, as per the DSM-5 of the *Diagnostic and Statistical Manual of Mental Disorders*? And, did they attribute their engagement in any violence to gaming

activity? Part IV-A: Internet Gaming Disorder Scale – Short Form (IGDSSF-9); Part IV-B: Engagement in Violence Scale (EIVS-1) (Supplemental Violence Question # 10).

Regarding whether any participant had met 5 of the 9 DSM-5 criteria for Internet Gaming Disorder (IGD), the prevalence of the diagnosis of IGD for the ES sample was 0% (n=101), while for the CMS sample the prevalence of IGD was .8% (n=1).

See Table 5.

Table 5. Internet Gaming Disorder Scale – Short Form (IGDSSF-9)

	N	%
Do You Feel Preoccupied with your Gaming Behavior		
English Speaking Sample (N=101)		
1. Strongly Disagree	11	10.9
2. Disagree	32	31.7
3. Neither Agree or Disagree	24	23.8
4. Agree	31	30.7
5. Strongly Agree	3	3.0
Chinese Mandarin Speaking Sample (N=130)		
1. Strongly Disagree	12	9.2
2. Disagree	35	26.9
3. Neither Agree or Disagree	47	36.2
4. Agree	28	21.5
5. Strongly Agree	8	6.2
Do You Feel More Irritability, Anxiety or Even Sadness when you Try to Either Reduce or Stop Your Gaming Activity		
English Speaking Sample (N=101)		
1. Strongly Disagree	26	25.7
2. Disagree	39	38.6
3. Neither Agree or Disagree	23	22.8
4. Agree	13	12.9
Chinese Mandarin Speaking Sample (N=130)		
1. Strongly Disagree	29	22.3
2. Disagree	56	43.1
3. Neither Agree or Disagree	33	25.4
4. Agree	11	8.5
5. Strongly Agree	1	.8

Do You Feel the Need to Spend Increasing Amounts of Time Engaged in Gaming in Order to Feel Satisfaction or Pleasure

English Speaking Sample (N=101)

1. Strongly Disagree	22	21.8
2. Disagree	42	41.6
3. Neither Agree or Disagree	17	16.8
4. Agree	18	17.8
5. Strongly Agree	2	2.0

Chinese Mandarin Speaking Sample (N=130)

1. Strongly Disagree	32	24.6
2. Disagree	62	47.7
3. Neither Agree or Disagree	27	20.8
4. Agree	9	6.9

Do You Systematically Fail When Trying to Control or Cease Your Gaming Activity

English Speaking Sample (N=101)

1. Strongly Disagree	35	34.7
2. Disagree	34	33.7
3. Neither Agree or Disagree	16	15.8
4. Agree	15	14.9
5. Strongly Agree	1	1.0

Chinese Mandarin Speaking Sample (N=130)

1. Strongly Disagree	28	21.5
2. Disagree	54	41.5
3. Neither Agree or Disagree	34	26.2
4. Agree	11	8.5
5. Strongly Agree	3	2.3

Has You Lost Interests in Previous Hobbies and Other Entertainment Activities as a Result of your Engagement with the Game

English Speaking Sample (N=101)

1. Strongly Disagree	28	27.7
2. Disagree	22	21.8
3. Neither Agree or Disagree	18	17.8
4. Agree	30	29.7
5. Strongly Agree	3	3.0

Chinese Mandarin Speaking Sample (N=130)

1. Strongly Disagree	28	21.5
2. Disagree	43	33.1
3. Neither Agree or Disagree	26	20.0
4. Agree	30	23.1
5. Strongly Agree	3	2.3

Have You Continued Your Gaming Activity Despite Knowing It was Causing Problems Between You and Other People

English Speaking Sample (N=101)

1. Strongly Disagree	33	32.7
2. Disagree	30	29.7
3. Neither Agree or Disagree	20	19.8
4. Agree	15	14.9
5. Strongly Agree	3	3.0
Chinese Mandarin Speaking Sample (N=130)		
1. Strongly Disagree	34	26.2
2. Disagree	51	39.2
3. Neither Agree or Disagree	27	20.8
4. Agree	13	10.0
5. Strongly Agree	5	3.8

Have You Deceived Any of Your Family Members, Therapists or Others because of the Amount of Your Gaming Activity

English Speaking Sample (N=101)

1. Strongly Disagree	52	51.5
2. Disagree	35	34.7
3. Neither Agree or Disagree	8	7.9
4. Agree	5	5.0
5. Strongly Agree	1	1.0
Chinese Mandarin Speaking Sample (N=130)		
1. Strongly Disagree	38	29.2
2. Disagree	39	30.0
3. Neither Agree or Disagree	20	15.4
4. Agree	28	21.5
5. Strongly Agree	5	3.8

Do You Play in Order to Temporarily Escape or Relieve a Negative Mood

English Speaking Sample (N=101)

1. Strongly Disagree	11	10.9
2. Disagree	12	11.9
3. Neither Agree or Disagree	10	9.9
4. Agree	50	49.5
5. Strongly Agree	18	17.8
Chinese Mandarin Speaking Sample (N=130)		
1. Strongly Disagree	18	13.8
2. Disagree	21	16.2
3. Neither Agree or Disagree	24	18.5
4. Agree	59	45.4
5. Strongly Agree	8	6.2

Have You Jeopardized or Lost an Important Relationship, Job or an Educational or Career Opportunity because of Your Gaming Activity

English Speaking Sample (N=101)

1. Strongly Disagree	61	60.4
2. Disagree	21	20.8

3. Neither Agree or Disagree	9	8.9
4. Agree	9	8.9
5. Strongly Agree	1	1.0
Chinese Mandarin Speaking Sample (N=130)		
1. Strongly Disagree	58	44.6
2. Disagree	40	30.8
3. Neither Agree or Disagree	20	15.4
4. Agree	10	7.7
5. Strongly Agree	2	1.5

For attributing any engagement in violence to gaming, 66.3% (n=67) of the ES sample and 61.5% (n=80) of the CMS sample strongly disagreed. The prevalence of having ever been violent for the ES sample was 7.9% (n=8, for agree and strongly agree), and for the CMS it was 5.3% (n=7, for agree and strongly agree).

See Table 6.

Table 6. Engagement in Violence Scale (EIVS-1)

	N	%
Have You Ever Been Violent		
English Speaking Sample (N=101)		
1. Strongly Disagree	67	66.3
2. Disagree	23	22.8
3. Neither Agree or Disagree	3	3.0
4. Agree	6	5.9
5. Strongly Agree	2	2.0
Chinese Mandarin Speaking Sample (N=130)		
1. Strongly Disagree	80	61.5
2. Disagree	30	23.1
3. Neither Agree or Disagree	13	10.0
4. Agree	5	3.8
5. Strongly Agree	2	1.5

Results for Research Question #5

What were their experiences of depression or anxiety in the past year? Part V:
Retrospective Depression & Anxiety (R-DA-4).

The ES sample had past year depression at 58.4% (n=59), and the CMS sample had depression at 75.4% (n=98). The ES sample had past year anxiety at 61.4% (n=62), and the CMS sample past year anxiety at 76.2% (n=99).

See Table 7.

Table 7. Retrospective Depression & Anxiety (R-DA-4)

	N	%
Now Think Back Over the Past Year or 12 Months. Do You Think You Experienced Any Depression in the Past Year or 12 Months		
English Speaking Sample (N=101)		
Yes	59	58.4
No	42	41.6
Chinese Mandarin Speaking Sample (N=130)		
Yes	98	75.4
No	32	24.6
Now Think Back Over the Past Year or 12 Months. Do You Think You Experienced Any Anxiety in the Past Year or 12 Months		
English Speaking Sample (N=101)		
Yes	62	61.4
No	39	38.6
Chinese Mandarin Speaking Sample (N=130)		
Yes	99	76.2
No	31	23.8

Results for Research Question #6

To what extent did they access mental health services for any past year gaming activity, depression or anxiety? Part VI: Measure of Mental Health Services Utilization (M-MHSU-3).

For the ES sample, only 3% (n=3) had sought out any kind of counseling for their gaming activity, while 3.1% (n=4) of the CMS sample had done so. Some 30.7% (n=31) of the ES sample had accessed a mental health services for depression or anxiety, while 30.8% (n=40) of the CMS sample had also one so. Regarding the extent to which they accessed counseling, 25.7% (n=26) of the ES sample and 32.3% (n=42) of the CMS sample had done the same.

See Table 8.

Table 8. Measure of Mental Health Services Utilization (M-MHSU-3)

	N	%
To What Extent Do They Access Mental Services for Depression or Anxiety		
English Speaking Sample (N=101)		
Yes	31	30.7
No	36	35.6
Not Applicable	34	33.7
Chinese Mandarin Speaking Sample (N=130)		
Yes	40	30.8
No	7	5.4
Not Applicable	83	63.8
To What Extent Do They Access Counseling		
English Speaking Sample (N=101)		
Yes	26	25.7
No	39	38.6
Not Applicable	36	35.6
Chinese Mandarin Speaking Sample (N=130)		
Yes	42	32.3
No	8	6.2

Not Applicable	80	61.5
Because of Your Gaming, Activity, Did You Seek Out Any Kind Counseling in the Past Year		
English Speaking Sample (N=101)		
Yes	3	3.0
No	55	54.5
Not Applicable	43	42.6
Chinese Mandarin Speaking Sample (N=130)		
Yes	73	56.2
No	4	3.1
Not Applicable	53	40.8

Results for Research Question #7

What was their level of general help-seeking from varied sources (e.g., intimate partner, friend, parents, family, minister/religious leader, etc.) for *personal/emotional problems* and *suicidal feelings*, respectively? Part VII: General Help Seeking Questionnaire (GHSQ-2).

In terms of level of general mental health help-seeking for *personal/emotional problems*, the ES sample had 48.5% (n=49) who were extremely likely to seek out an intimate partner for help; and, the CMS sample had 41.5% (n=54) who were extremely likely to seek out an intimate partner for help. Other examples reflect lower frequencies.

See Table 9.

Table 9. General Mental Health Help-Seeking Questionnaire (GHSQ-2)

	N	%
If You Were Having a Personal or Emotional Problem-Intimate Partner		
English Speaking Sample (N=101)		
1. Extremely Unlikely	10	9.9
2. Unlikely	6	5.9
3. Likely	35	34.7

4. Extremely Likely	49	48.5
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	7	5.4
2. Unlikely	15	11.5
3. Likely	51	39.2
4. Extremely Likely	54	41.5

If You Were Having a Personal or Emotional Problem-Friend

English Speaking Sample (N=101)		
1. Extremely Unlikely	8	7.9
2. Unlikely	15	14.9
3. Likely	45	44.6
4. Extremely Likely	32	31.7
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	6	4.6
2. Unlikely	19	14.6
3. Likely	66	50.8
4. Extremely Likely	36	27.7

If You Were Having a Personal or Emotional Problem-Parent

English Speaking Sample (N=101)		
1. Extremely Unlikely	15	14.9
2. Unlikely	25	24.8
3. Likely	35	34.7
4. Extremely Likely	25	24.8
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	12	9.2
2. Unlikely	35	26.9
3. Likely	52	40.0
4. Extremely Likely	28	21.5

If You Were Having a Personal or Emotional Problem-Other Relative/Family Member

English Speaking Sample (N=101)		
1. Extremely Unlikely	31	30.7
2. Unlikely	36	35.6
3. Likely	24	23.8
4. Extremely Likely	9	8.9
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	29	22.3
2. Unlikely	53	40.8
3. Likely	38	29.2
4. Extremely Likely	7	5.4

If You Were Having a Personal or Emotional Problem-Mental Health Professional

English Speaking Sample (N=101)

1. Extremely Unlikely	15	14.9
2. Unlikely	35	34.7
3. Likely	37	36.6
4. Extremely Likely	13	12.9

Chinese Mandarin Speaking Sample (N=130)

1. Extremely Unlikely	16	12.3
2. Unlikely	48	36.9
3. Likely	51	39.2
4. Extremely Likely	12	9.2

If You Were Having a Personal or Emotional Problem-Phone Helpline

English Speaking Sample (N=101)

1. Extremely Unlikely	52	51.5
2. Unlikely	27	26.7
3. Likely	17	16.8
4. Extremely Likely	4	4.0

Chinese Mandarin Speaking Sample (N=130)

1. Extremely Unlikely	45	34.6
2. Unlikely	57	43.8
3. Likely	20	15.4
4. Extremely Likely	5	3.8

If You Were Having a Personal or Emotional Problem-Doctor/General Practitioner

English Speaking Sample (N=101)

1. Extremely Unlikely	28	27.7
2. Unlikely	38	37.6
3. Likely	27	26.7
4. Extremely Likely	7	6.9

Chinese Mandarin Speaking Sample (N=130)

1. Extremely Unlikely	26	20.0
2. Unlikely	46	35.4
3. Likely	46	35.4
4. Extremely Likely	9	6.9

If You Were Having a Personal or Emotional Problem-Minister or Religious Leader

English Speaking Sample (N=101)

1. Extremely Unlikely	65	64.4
2. Unlikely	21	20.8
3. Likely	13	12.9
4. Extremely Likely	1	1.0

Chinese Mandarin Speaking Sample (N=130)

1. Extremely Unlikely	70	53.8
2. Unlikely	37	28.5
3. Likely	14	10.8

4. Extremely Likely	6	4.6
If You Were Having a Personal or Emotional Problem-No Help		
English Speaking Sample (N=101)		
1. Extremely Unlikely	47	46.5
2. Unlikely	28	27.7
3. Likely	17	16.8
4. Extremely Likely	8	7.9
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	41	31.5
2. Unlikely	48	36.9
3. Likely	34	26.2
4. Extremely Likely	4	3.1
If You Were Having a Personal or Emotional Problem-Not Listed		
English Speaking Sample (N=101)		
1. Extremely Unlikely	63	62.4
2. Unlikely	21	20.8
3. Likely	14	13.9
4. Extremely Likely	2	2.0
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	58	44.6
2. Unlikely	39	30.0
3. Likely	22	16.9
4. Extremely Likely	8	6.2

For level of general mental health help-seeking for *suicidal feelings/thoughts*, the ES sample had 53.5% (n=54) extremely likely to seek help from an intimate partner, while the CMS had 45.4% (n=59) extremely likely to seek help from an intimate partner.

Also, the ES sample had 46.5% (n=47) who were extremely likely to seek out a doctor or general practitioner—while the CMS sample had 26.2% (n=34) who were extremely likely to seek out a doctor or general practitioner.

Other options had lower frequencies.

See Table 10.

Table 10. Suicidal Thoughts (N=231)

	N	%
If You Were Experiencing Suicidal Thoughts-Intimate Partner		
English Speaking Sample (N=101)		
1. Extremely Unlikely	15	14.9
2. Unlikely	5	5.0
3. Likely	26	25.7
4. Extremely Likely	54	53.5
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	18	13.8
2. Unlikely	13	10.0
3. Likely	37	28.5
4. Extremely Likely	59	45.4
If You Were Experiencing Suicidal Thoughts-Friend		
English Speaking Sample (N=101)		
1. Extremely Unlikely	15	14.9
2. Unlikely	16	15.8
3. Likely	30	29.7
4. Extremely Likely	39	38.6
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	15	11.5
2. Unlikely	20	15.4
3. Likely	51	39.2
4. Extremely Likely	41	31.5
If You Were Experiencing Suicidal Thoughts Problem-Parent		
English Speaking Sample (N=101)		
1. Extremely Unlikely	28	27.7
2. Unlikely	19	18.8
3. Likely	16	15.8
4. Extremely Likely	37	36.6
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	28	21.5
2. Unlikely	26	20.0
3. Likely	33	25.4
4. Extremely Likely	40	30.8
If You Were Experiencing Suicidal Thoughts-Other Relative/Family Member		
English Speaking Sample (N=101)		
1. Extremely Unlikely	39	38.6
2. Unlikely	24	23.8
3. Likely	18	17.8
4. Extremely Likely	19	18.8
Chinese Mandarin Speaking Sample (N=130)		

1. Extremely Unlikely	39	30.0
2. Unlikely	37	28.5
3. Likely	32	24.6
4. Extremely Likely	19	14.6
If You Were Experiencing Suicidal Thoughts-Mental Health Professional		
English Speaking Sample (N=101)		
1. Extremely Unlikely	16	15.8
2. Unlikely	14	13.9
3. Likely	23	22.8
4. Extremely Likely	47	46.5
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	27	20.8
2. Unlikely	22	16.9
3. Likely	44	33.8
4. Extremely Likely	34	26.2
If You Were Experiencing Suicidal Thoughts-Phone Helpline		
English Speaking Sample (N=101)		
1. Extremely Unlikely	40	39.6
2. Unlikely	20	19.8
3. Likely	22	21.8
4. Extremely Likely	18	17.8
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	46	35.4
2. Unlikely	33	25.4
3. Likely	29	22.3
4. Extremely Likely	19	14.6
If You Were Experiencing Suicidal Thoughts -Doctor/General Practitioner		
English Speaking Sample (N=101)		
1. Extremely Unlikely	32	31.7
2. Unlikely	16	15.8
3. Likely	31	30.7
4. Extremely Likely	21	20.8
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	37	28.5
2. Unlikely	24	18.5
3. Likely	46	35.4
4. Extremely Likely	20	15.4
If You Were Experiencing Suicidal Thoughts-Minister or Religious Leader		
English Speaking Sample (N=101)		
1. Extremely Unlikely	67	66.3
2. Unlikely	13	12.9
3. Likely	13	12.9

4. Extremely Likely	7	6.9
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	63	48.5
2. Unlikely	31	23.8
3. Likely	20	15.4
4. Extremely Likely	13	10.0

If You Were Experiencing Suicidal Thoughts -No Help

English Speaking Sample (N=101)		
1. Extremely Unlikely	63	62.4
2. Unlikely	21	20.8
3. Likely	5	5.0
4. Extremely Likely	11	10.9
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	59	45.4
2. Unlikely	34	26.2
3. Likely	24	18.5
4. Extremely Likely	10	7.7

If You Were Experiencing Suicidal Thoughts-Not Listed

English Speaking Sample (N=101)		
1. Extremely Unlikely	64	49.2
2. Unlikely	13	12.9
3. Likely	16	15.8
4. Extremely Likely	7	6.9
Chinese Mandarin Speaking Sample (N=130)		
1. Extremely Unlikely	64	49.2
2. Unlikely	32	24.6
3. Likely	20	15.4
4. Extremely Likely	11	8.5

Results for Research Question #8

What was their perceived level of social support? Part VIII: Perceived Social Support (PSSS-5).

The ES sample had a mean of 3.47 (SD=1.104, min =1.00= no one like this in my life, max =5=6 or more people in my life; whereas, the CMS sample had a mean of 3.58 (SD=.989, Min =1.00, Max =5)—with both mean scores indicating the samples are each

between the categories of (3) having at least 2 people in one's life who provides support in that fashion, and (4) having 3-5 people.

See Table 11.

Table 11. Perceived Social Support (PSSS-5) (N=231)

	N	%
<i>ES Mean =3.47, Min=1, Max=5, SD=1.104</i>		
<i>CMS Mean = 3.58, Min=1, Max=5, SD=1.104</i>		
<i>I could ask for advice if I needed it, and could get it pretty quickly without waiting</i>		
English Speaking Sample (N=101)		
1-I have no one like this in my life right now	8	7.9
2-I have at least 1 person like this in my life right now	20	19.8
3-I have at least 2 people like this in my life right now	21	20.8
4-I have 3-5 people like this in my life right now	28	27.7
5- I have 6 or more people like this in my life right now	23	22.8
Chinese Mandarin Speaking Sample (N=130)		
1-I have no one like this in my life right now	19	4.6
2-I have at least 1 person like this in my life right now	21	16.2
3-I have at least 2 people like this in my life right now	34	26.2
4-I have 3-5 people like this in my life right now	45	35.4
5- I have 6 or more people like this in my life right now	7	5.4
<i>I could go to them in an emergency for help (e.g., such as a place to wait/stay if I was locked out of my housing/dormitory room/apartment)</i>		
English Speaking Sample (N=101)		
1-I have no one like this in my life right now	8	7.9
2-I have at least 1 person like this in my life right now	23	22.8
3-I have at least 2 people like this in my life right now	21	20.8
4-I have 3-5 people like this in my life right now	26	25.7
5-I have 6 or more people like this in my life right now	22	21.8
Chinese Mandarin Speaking Sample (N=130)		
1-I have no one like this in my life right now	16	12.3
2-I have at least 1 person like this in my life right now	22	16.9
3-I have at least 2 people like this in my life right now	35	26.9
4-I have 3-5 people like this in my life right now	39	30.0
5-I have 6 or more people like this in my life right now	15	11.5
<i>I could borrow money from them if my wallet/purse was stolen and I needed money (e.g., for transportation to take a bus/subway to get to school or back to where you live)</i>		
English Speaking Sample (N=101)		

1-I have no one like this in my life right now	6	5.9
2-I have at least 1 person like this in my life right now	20	19.8
3-I have at least 2 people like this in my life right now	27	26.7
4-I have 3-5 people like this in my life right now	27	26.7
5-I have 6 or more people like this in my life right now	20	19.8
Chinese Mandarin Speaking Sample (N=130)		
1-I have no one like this in my life right now	4	3.1
2-I have at least 1 person like this in my life right now	16	12.3
3-I have at least 2 people like this in my life right now	23	17.7
4-I have 3-5 people like this in my life right now	30	23.1
5-I have 6 or more people like this in my life right now	54	41.5

I could get food from them if I was hungry and had no food because of some emergency in my life

English Speaking Sample (N=101)

1-I have no one like this in my life right now	4	4.0
2-I have at least 1 person like this in my life right now	17	16.8
3-I have at least 2 people like this in my life right now	16	15.8
4-I have 3-5 people like this in my life right now	32	31.7
5-I have 6 or more people like this in my life right now	31	30.7

Chinese Mandarin Speaking Sample (N=130)

1-I have no one like this in my life right now	4	3.1
2-I have at least 1 person like this in my life right now	16	12.3
3-I have at least 2 people like this in my life right now	18	13.8
4-I have 3-5 people like this in my life right now	32	24.6
5-I have 6 or more people like this in my life right now	57	43.8

I could receive encouraging words from them, if I was struggling with something

English Speaking Sample (N=101)

1-I have no one like this in my life right now	8	7.9
2-I have at least 1 person like this in my life right now	17	16.8
3-I have at least 2 people like this in my life right now	16	15.8
4-I have 3-5 people like this in my life right now	24	23.8
5-I have 6 or more people like this in my life right now	35	34.7

Chinese Mandarin Speaking Sample (N=130)

1-I have no one like this in my life right now	3	2.3
2-I have at least 1 person like this in my life right now	16	12.3
3-I have at least 2 people like this in my life right now	22	16.9
4-I have 3-5 people like this in my life right now	35	26.9
5-I have 6 or more people like this in my life right now	51	39.2

Results for Research Question #9

How did they rate the quality and importance in their life of any *off-line social support* they receive from other people? Part IX: Rating of Off-Line Social Support (R-Offline-SS2).

The ES sample had a mean of 4.61 (SD=1.058, min =1-very poor quality to max=5 – excellent quality) for closest to very good quality of offline social support; and, the CMS sample had a mean of 4.32 (SD=1.008, min =1-very poor quality to max=5 – excellent quality) for good quality of offline social support.

See Table 12.

Table 12. Rating of Off-Line Social Support (R-Offline-SS-2)

	N	%
<i>ES Mean = 4.61, SD=1.058, min =1-very poor quality to max=5 – excellent quality</i>		
<i>CMS Mean =4.32, SD=1.008, min =1-very poor quality to max=5 – excellent quality</i>		
Please Rate the Social Support that You Receive from People When You Are Offline, not on the Internet, and not Involved in Gaming Activities		
English Speaking Sample (N=101)		
1. Very Poor	1	1.0
2. Poor	6	5.9
3. Fair	16	15.8
4. Good	28	27.7
5. Very good	22	21.8
6. Excellent	25	24.8
Chinese Mandarin Speaking Sample (N=130)		
1. Very Poor	4	3.1
2. Poor	1	.8
3. Fair	27	20.8
4. Good	42	32.3
5. Very good	34	26.2
6. Excellent	14	10.8

How Important in Your Life is the Offline Social Support that You Receive from Other People (N=231)

English Speaking Sample (N=101)

1. Extremely Unimportant	2	2.0
2. Very Unimportant	5	5.0
3. Somewhat Unimportant	5	5.0
4. Somewhat Important	16	15.8
5. Very Important	35	34.7
6. Extremely Improvement	33	32.7

Chinese Mandarin Speaking Sample (N=130)

1. Extremely Unimportant	4	3.1
2. Very Unimportant	1	.8
3. Somewhat Unimportant	11	8.5
4. Somewhat Important	36	27.7
5. Very Important	54	41.5
6. Extremely Improvement	16	12.3

Results for Research Question #10

How did they rate the quality and importance in their life of any *on-line social support* they receive from other people? Part X: Rating of On-Line Social Support (R-Online-SS2).

With regard to online social support, the ES sample had a mean of 3.7 (SD=1.328, min =1-very poor quality to max=5 – excellent quality) for closest to good quality of on-line social support; and, the CMS had a mean of 3.4, SD=.994, min =1-very poor quality to max=5 – excellent quality) for fair quality of on-line social support.

See Table 13.

Table 13. Rating of On-line Social Support (R-Online-SS-2)

	N	%
<hr/>		
<i>ES Mean = 3.7, SD=1.328, min =1-very poor quality to max=5 – excellent quality</i>		
<i>CMS Mean =3.4, SD=.994, min =1-very poor quality to max=5 – excellent quality</i>		

Please Rate the Social Support that You Receive People When You Are Online, On the Internet, and Involved in Gaming Activities

English Speaking Sample (N=101)

1. Very Poor	5	5.0
2. Poor	12	11.9
3. Fair	26	25.7
4. Good	17	16.8
5. Very good	12	11.9
6. Excellent	13	12.9

Chinese Mandarin Speaking Sample (N=130)

1. Very Poor	4	3.1
2. Poor	5	3.8
3. Fair	58	44.6
4. Good	29	22.3
5. Very good	13	10.0
6. Excellent	5	3.8

How Important in Your Life is the Online Social Support that You Receive from Other People

English Speaking Sample (N=101)

1. Extremely Unimportant	7	6.9
2. Very Unimportant	15	14.9
3. Somewhat Unimportant	12	11.9
4. Somewhat Important	25	24.8
5. Very Important	11	10.9
6. Extremely Improvement	14	13.9

Chinese Mandarin Speaking Sample (N=130)

1. Extremely Unimportant	11	8.5
2. Very Unimportant	12	9.2
3. Somewhat Unimportant	38	29.2
4. Somewhat Important	33	25.4
5. Very Important	13	10.0
6. Extremely Improvement	3	2.3

Results for Research Question #11

Using a new one item scale for measuring the risk of providing socially desirable responses, how do they score? Part XI: Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RP-SD-R-1).

The ES sample had a mean of 4.71 for a moderate level of social desirability (SD=2.872, min =1-low social desirability, max=10 – high social desirability); and, the CMS sample had a mean of 5.70 for moderate social desirability (SD=3.09, min =1-low social desirability, max=10 – high social desirability). Of note, the forthcoming regression analyses control for social desirability.

Results for Research Question #12

Were there any significant relationships between the study outcome variable of extent to which they meet DSM-5 diagnostic criteria for IGD and selected demographics and other variables? And, were there significant differences between American and Chinese participants?

For the ES sample, using Pearson correlation, the greater the extent to which participants met more criteria for the diagnosis of Internet Gaming Disorder (IGD)--with Bonferroni Adjustment for multiple comparisons (i.e., .05/11 comparisons = .005 – significance level), then the:

- The higher the level of engagement in violent behavior ($r = .406$, $p = .000$)
- The lower their perceived social support ($r = -.347$, $p = .000$)
- The lower their off-line social support ($r = -.265$, $p = .008$)

For the CMS sample, using Pearson correlation, the greater the extent to which participants met more criteria for the diagnosis of Internet Gaming Disorder (IGD)--with Bonferroni Adjustment for multiple comparisons (i.e., .05/11 comparisons = .005 – significance level), then the:

- The higher the level of engagement in violent behavior ($r = .433$, $p = .000$)
- The greater the pursuit of counseling past year ($r = .292$, $p = .001$)

See Table 14.

Table 14. Correlations with the Outcome Variable of Extent Met DSM-5 Criteria for IGD (N=231)

	R	P
Age of participant		
English	-.093	.353
Chinese	.030	.738
Annual Household Income		
English	-.017	.863
Chinese	.056	.525
Education Level		
English	.029	.772
Chinese	.084	.344
Violence Level		
English	.406	.000***
Chinese	.433	.000***
Counseling Past Year		
English	.161	.108
Chinese	.292	.001**
Personal/Emotional Support		
English	.174	.084
Chinese	.114	.113
Suicidal Thoughts Support		
English	.119	.239
Chinese	.192	.030*
Perceived Social Support		
English	-.347	.000***
Chinese	.071	.427
Off-line Social Support		
English	-.265	.008**
Chinese	.065	.475
On-line Social Support		
English	.086	.436
Chinese	-.041	.663
Social Desirability		
English	-.136	.179
Chinese	-.182	.042*

*p<0.05, **p<0.01, ***p<0.001; Bonferroni Adjustment Significance (0.05/11, p = 0.005). Note: All p values above 0.005 are considered non-significant, and only those below 0.004 are considered statistically significant

Independent t-tests comparing dichotomous groups on the study outcome variable of extent to which participants met DSM-5 criteria for Internet Gaming Disorder (IGD) were conducted using all dichotomous (yes/no) independent variables: i.e., 1- gender, 2- has partner or not, 3-if currently a student or not, 4- employed or not, 5-used cigarettes in past 30 days or not, 6-used alcohol in the past 30 days or not, 7-suffered from depression in past year or not, and 8-suffered from anxiety in past year or not. T-tests were conducted comparing these selected groups (yes/no) groups on the study outcome variable of extent to which participants met DSM-5 criteria for Internet Gaming Disorder (IGD).

For the ES sample and for the CMS sample, there were **no statistically significant comparisons** of dichotomous groups (Bonferroni adjustment significance, $05/8=.006$).

Results for Research Question #13

What were the significant predictors of the study outcome variable of extent to which they meet DSM-5 diagnostic criteria for IGD, while controlling for socially desirable responses?

Backward stepwise regression. The model starts with the full set of 16 independent variables of interest, proceeding with each step without controlling for the other independent variables; however, at each step of the analysis, the non-significant variables were removed. Lastly, on the last step only the remaining significant

independent variables remained (i.e. $p < .05$). Here, for both the ES sample and CMS sample, the 16 independent variables in the model were, as follows, while controlling for level of social desirability:

- 1- has partner or not
- 2- used alcohol in the past 30 days or not
- 3- gender
- 4- personal/emotional support
- 5- counseling past year
- 6- if used cigarettes in past 30 days or not
- 7- if engaged in violence due to gaming
- 8 - employed or not
- 9 - level of perceived social support
- 10 - if student or not
- 11 - level of education
- 12 - annual household income
- 13 - age
- 14 - degree of off-line social support
- 15 –if anxiety past year
- 16 –suicidal thoughts/feelings support

Findings using backward stepwise regression showed that, after controlling for social desirability, the study outcome variable of the extent to which the participants met the criteria for a diagnosis of Internet Gaming Disorder (IGD), as per the DSM-5 criteria, was significantly predicted by independent variables, as follows for the ES sample and CMS sample,

For the ES sample significant predictors of extent to which sample meets DSM-5 criteria for IGD, were, as follows:

- Not having a partner ($B = -2.519$, $p = .035$)
- Higher income ($B = .733$, $p = .026$)
- More violence due to gaming ($B = .2.681$, $p = .000$)
- Higher help seeking for personal/emotional support ($B = 1.922$, $p = .003$)
- Lower level of perceived social support ($B = -2.012$, $p = .000$)

The adjusted R-squared value for this model was 0.296, meaning that 29.6% of

the variance for extent of meeting DSM 5 criteria for IGD for the ES sample (N=101) was explained by this model.

For the ES sample, study participants met more DSM-5 criteria for IGD (out of the 9 total criteria), when they did not have a partner, had a higher income, were engaged in more violence due to gaming, engaged in a higher level of help seeking for personal/emotional support, and had a lower level of perceived social support.

See Table 15.

Table 15. Backwards Stepwise Regression Analysis for the ES Sample (N=101)—Predicting Extent Met DSM_5 Criteria for IGD

Predictors	B	SEB	p
Not Having a Partner	-2.519	.197	.035*
Higher Income	.733	.215	.026*
More Violence Due to Gaming	2.681	.393	.000***
Higher Help Seeking for Personal/Emotional Support	1.922	.274	.003**
Lower Levels of Perceived Social Support	-2.012	-.344	.000***

*p<.05, **p<.01, ***p<.001

F=7.651 (p=000)

R2=.340, Adj R2=0.296 – 29.6% of variance explained by model

For the CMS Sample (significant predictors of extent to which meet DSM-5 criteria for IGD)

- Male gender (B = 2.030, p = .009)
- Experienced anxiety in the past year (B = 1.819, p = .022)
- More violence due to gaming (B = 2.531, p = .000)

The adjusted R-squared value for this model was 0.63, meaning that 26.3% of the

variance for extent of meeting DSM 5 criteria for IGD for the CMS sample (N=130) was explained by this model.

For the CMS sample, study participants met more DSM-5 criteria for IGD (out of the 9 total criteria), when they were male, experienced anxiety in the past year, and were engaged in more violence due to gaming.

See Table 16.

Table 16. Backwards Stepwise Regression Analysis for the CMS Sample (N=130)—
Predicting Extent Met DSM_5 Criteria for IGD

Predictors	B	SEB	p
Male Gender	2.655	.216	.011
Experienced Anxiety in the Past Year		2.384	.165 .050
More Violence due to Gaming	2.692	.410	.000

*p<.05, **p<.01, ***p<.001

F=11.819 (p=000)

R2=.288, Adj R2=0.263 – 26.3% of variance explained by model

Conclusion

The chapter presented the results of data analysis. Results were presented in order of the research questions.

Chapter V will provide a summary of the present study, discussion of results, implications of the findings, recommendations for future research, and a conclusion to the dissertation.

Chapter V

SUMMARY, DISCUSSION, IMPLICATIONS, RECOMMENDATIONS AND CONCLUSION

The chapter provides the discussion of the results of data analysis. Also, the chapter provides a summary of the research study. The chapter includes implications of the study, as well as recommendations for future research on Internet Gaming Disorder (IGD). Lastly, the chapter will discuss the limitations of the study, as well as offer a final conclusion.

Summary of the Literature Review

Internet Gaming Disorder (IGD) has been defined as “an intense preoccupation with games and dysfunctional gaming beliefs” (King & Delfabbro, 2018b, p. 188). Others have used the term Internet and Video Game Addiction (IVGA), including Greenfield (2018), while this dissertation will primarily refer to IGD. Most importantly, IGD is a global public health threat, including in China (Wu, Chen, Tong, Yu & Lau, 2018).

Asia is the most afflicted country for IGD, followed by Europe, then North America (Sussman, Harper, Stahl & Weigle, 2017). Further, Sussman et al. (2017) reported Asia as having a range of 4.8% to 5.9% for IGD. Europe has the second highest range of IGD at 1.16% to 2.5%, while North America follows at 0.3% to 1.0% for IGD.

According to Sussman et al. (2017), “the overall statistics worldwide could be as low as 0.3% to 5.9%” for IGD (p. 311).

IGD has been a popular topic of discussion in Korea, Japan, Germany and various other countries, due to adolescent gamers and young adults rejecting engagement in daily societal expectations in favor of gaming three hours or more per day (King et al., 2018b, p. 223). Out of concern, Japan has set up ministries to address this problem, while China has initiated the use of bootcamps for individuals who cannot cease gaming over the Internet (King et al., 2018b, p. 223).

Zastrow (2017) reported that gaming in Korea and other countries is a serious issue. Consider how the Korean government became involved with gaming; children were sneaking to engage in gaming, and even dropping out of school. Other children were becoming violent and combative. Korea even has a system where the Internet shuts down at a certain time to curb the behavior of those who cannot control their gaming habits over the Internet (Király et al., 2018, p. 506).

Gonzalez et al. (2018) discussed how “certain games are worse for some people than others by comparison, such as Massively Multiplayer Online” games (MMOs)—for example, *World of Warcraft* (p. 15). Yau and Potenza (2014) emphasized how “some people play MMOs, which is one of the most popular video games over the internet categories for fun while others play for achievement” (p. 379). MMOs are “within these never-ending games that have tournaments for prestige, trophies and money around the world, especially in places like Korea leading to an obsession to obtain every item in the game” (p. 379).

Internet Gaming Disorder (IGD) can be defined as “an intense preoccupation with games and dysfunctional gaming beliefs” (King & Delfabbro, 2018b, p. 188). IGD was included in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders*, being found worthy of future study. This may be viewed as an opportunity for achieving consensus and unification in the field, while there is a role for tools capable of assessing IGD (Pontes & Griffiths, 2015).

Further, the American Psychological Association (APA, 2013) has noted 9 criteria for IGD within the DSM-5, such as follows: (1) preoccupation or obsession with Internet games; (2) withdrawal symptoms when not playing Internet games; (3) a build-up of tolerance, with more time needing to be spent playing the games; (4) the person has tried to stop or curb playing Internet games, but has failed to do so; (5) the person has had a loss of interest in other life activities, such as hobbies; (6) a person has had continued overuse of Internet games, even with the knowledge of how much they impact a person’s life; (7) the person has lied to others about his or her Internet game usage; (8) the person uses Internet games to relieve anxiety or guilt, or as a way to escape; and, (9) the person has lost or put at risk an opportunity or relationship because of Internet games (p. 795). The APA (2013) stated that “individuals who are to be diagnosed” with internet gaming disorder must “at least meet 5 out of the 9 criteria mentioned within the DSM-5” (p. 795).

However, the information provided within the DSM-5 for IGD is preliminary, due to the criteria for the diagnoses of IGD in the DSM-5 being taken from the criteria to diagnose gambling addiction (APA, 2013, p. 294)., Thus, IGD does not have its own criteria developed from the ground up (p. 294).

King and Delfabbro (2018b) noted that tension regarding this new classification is coming from East Asian countries, where it is felt that internet gaming is a serious issue; this is why establishing criteria for diagnosing a disorder was strongly supported for inclusion within the DSM-5. Further, the World Health Organization announced a definition capturing the addictive nature of gaming, which “will be included within the next International Chronic Disease Manual” (p. 209).

González et al. (2018) indicated that “some scholars believe IGD is related to a single disorder or comorbidity more so than IGD being its own disorder” (p. 12). Obsessive compulsive disorder (OCD), depression, and attention deficit hyperactivity disorder (ADHD) are some of the more common disabilities that come with a diagnosis of IGD (p. 12). The research does not show links with depression, ADHD, or OCD for all IGD cases (King & Delfabbro, 2018b). However, the data does indicate that “some people are making an attempt to disconnect with reality to escape the pain of a traumatic event” (p. 60).

Others have noted that those who lack social support, are lonely and socially dislocated, are more prone to problematic Internet use; it has been suggested that those who lack such social support or meaningful social relations may engage in problematic Internet use as a way to fill their social void (Dengah, Snodgrass, Else & Polzer, 2018). Dengah et al. (2018) found that those with greater offline social support reported lower online gaming activity, fewer positive gaming experiences, and less negative and disordered gaming activity. Findings also showed that those who reported greater online social support had higher online gaming activity, greater positive gaming experiences, and more negative and disordered gaming activity. The findings contradicted the

stereotype of the lonely gamer, given gamers were found to be immersed in meaningful social connections, including those online and offline, including social relations within and outside the virtual space (Dengah et al., 2018).

Sussman et al. (2017) stated that other abnormalities in behavior include heightened alcohol consumption at 16%, compared to 5% when cross referencing peers without internet and gaming addiction. Further, anxiety is reported to range from 9% to 23% among individuals engaged in gaming (Sussman et al., 2017). According to Sussman et al. (2017), traumatic events have been said “to be one of the reasons that some people escape to the virtual world” at a rate of 44%, compared to 33% of their peers without gaming issues (p. 314).

Yau and Potenza (2014) also indicated that “internet gamers use gaming over the internet as a form of therapy to escape the pain of a traumatic event” (p. 382). Gamers fail to realize that they “are losing touch with reality and neglecting their health while doing so, which is why there was a push for inclusion of a criteria” for IGD in the DSM-5, while “clearly there is more data needed” (p. 382).

There is support for the present study, in so far as the DSM-5 finds IGD worthy of further study (APA, 2013; Pontes & Griffiths, 2015). In line with this, Pontes and Griffiths (2015) have developed and validated a short tool for measuring IGD as per the DSM-5 criteria, having just 9 items: the Internet Gaming Disorder Scale-Short Form (IGDS-SF-9). The criteria for diagnosing or measuring IGD follows the criteria for diagnosing a gambling addiction, while paving the way for diagnosing Internet gaming addiction (i.e., if a person meets 5 of 9 DSM-5 criteria).

There is also a rationale for having an English speaking (ES sample) and a Chinese Mandarin speaking (CMS sample). Consider how Zhang, Amos, and McDowell (2008) found that university students in China experienced a higher rate of Internet addiction compared to university students in the United States; rates were higher among males than females in both countries (Zhang et al., 2008). Investigating the prevalence of IGD among adults in China, it was found that IGD was associated with psychological distress, as a serious comorbidity (Wu, Chen, Tong, Yu & Lau, 2018). Consider how there were 417 million active gamers in China in the year 2016, while IGD is considered a serious global public health threat (Wu et al., 2018).

Additional support for the study comes from such findings that IGD is a serious global problem, while the extent of the problem varies in individual countries (King et al., 2018b; Sussman, et al., 2017). On the other hand, it is possible that those engaged in Internet gaming should not be stigmatized by the suggestion that IGD is a serious issue (King & Delfabbro, 2018b). The study may add to the current discussion and debate, by identifying the extent to which those engaged in Internet gaming activity meet the DSM-5 criteria for IGD, or do not—along with predictors of meeting criteria for a DSM-5 diagnosis of IGD.

Summary of the Statement of the Problem

The problem that this study addressed is the rise of internet gaming disorder (IGD) globally, including within the United States and countries such as China—and, the

resultant need for more data on the prevalence of adult men and women meeting criteria for a diagnosis of IGD, as well as data on related comorbidities and psychosocial issues.

Summary of the Purpose of the Study

The purpose of the study was to identify significant predictors of the study outcome variable/dependent variable of the extent to which the participants met the criteria for a diagnosis of Internet Gaming Disorder (IGD), as per the DSM-5 criteria.

The following independent variables were included: gender; age; race/ethnicity/; live in U.S. (yes/no); born in the U.S. (yes/no); born in China (yes/no); employed (yes/no); student (yes/no); annual household income; level of education; insurance (private, other, none); age of gaming initiation; hours per week gaming; ever played daily (yes/no); maximum gaming in any 24 hour period in hours (1-3 to 24 hours); transfer of virtual game images to actual reality (yes/no); extent of past 30 day cigarette and other substance use; extent of 3x per week cigarette and other substance use; extent of daily cigarette and other substance use; past year depression (yes/no); past year anxiety (yes/no); degree of mental health service utilization in past year; degree of general help seeking from various sources for personal and emotional issues; rating of risk of providing socially desirable responses: degree of social support; rating of offline social support; and, rating of online social support.

Summary of the Research Questions, Survey Parts and Data Analysis Plan

Given a global sample (N=231) composed of English speaking (ES, n=101) and Chinese Mandarin speaking (CMS, n=130) men and women who met the study inclusion criteria (i.e., play video games at least once a week at a minimum, consider themselves involved in Internet gaming, and have been gaming for the past six months) and completed an online survey in response to a social media campaign (i.e., *online invitation to take the study survey for a chance to win 1 of 3 \$100 Amazon gift cards*), this study answered the following research questions:

1-What were their demographic characteristics (gender, age, race/ethnicity, US born [yes/no], live in US [yes/no], Chinese born [yes/no], lives in China [yes/no], partner [yes/no], employed [yes/no], student [yes/no], annual household income, level of education, insurance [private, other, none])?

Part I: Basic Demographics (BD-11)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

2-What was their age of gaming initiation, frequency of gaming (hours per week), maximum length of play in a 24 hour period, types of devices owned and used for play, top 3-5 favorite games (optional), and experience of any images from virtual reality games transferring into actual reality?

Part II: Gaming Initiation, Frequency & Other History and Gaming Behavior (GIF - OHGB-9)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

3-What was the prevalence and frequency of using cigarettes and other substances (cigarettes, e-cigarettes, alcohol, marijuana, heroin/other opioid, cocaine, etc.)?

Part III: Cigarette and Other Substance Use (COSU-3)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

4-What was the prevalence of Internet Gaming Disorder (IGD), as an expression of addiction to gaming activity, as per the DSM-5 of the *Diagnostic and Statistical Manual of Mental Disorders*? And, did they attribute their engagement in any violence to gaming activity?

Part IV-A: Internet Gaming Disorder Scale – Short Form (IGDSSF-9)

Part IV-B: Engagement in Violence Scale (EIVS-1) (Supplemental Violence Question # 10)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

5-What were their experiences of depression or anxiety in the past year?

Part V: Retrospective Depression & Anxiety (R-DA-4)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

6-To what extent did they access mental health services for any past year gaming activity, depression or anxiety?

Part VI: Measure of Mental Health Services Utilization (M-MHSU-3)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

7-What was their level of general help-seeking from varied sources (e.g., intimate partner, friend, parents, family, minister/religious leader, etc.) for *personal/emotional problems* and *suicidal feelings*, respectively?

Part VII: General Help Seeking Questionnaire (GHSQ-2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

8-What was their perceived level of social support?

Part VIII: Perceived Social Support (PSSS-5)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

9-How did they rate the quality and importance in their life of any *off-line social support* they receive from other people?

Part IX: Rating of Off-Line Social Support (R-Offline-SS2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

10-How did they rate the quality and importance in their life of any *on-line social support* they receive from other people?

Part X: Rating of On-Line Social Support (R-Online-SS2)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

11-Using a new one item scale for measuring the risk of providing socially desirable responses, how do they score?

Part XI: Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RP-SD-R-1)

Data Analysis Plan: Descriptive statistics (M, SD, min, max, frequency, percent)

12-Were there any significant relationships between the study outcome variable of extent to which they meet DSM-5 diagnostic criteria for IGD and selected demographics and other variables? And, were there significant differences between American and Chinese participants?

Data Analysis Plan: Inferential statistics (independent t-tests and Pearson correlation)

13-What were the significant predictors of the study outcome variable of extent to which they meet DSM-5 diagnostic criteria for IGD, while controlling for socially desirable responses?

Data Analysis Plan: Backward stepwise regression.

Summary of the Research Sample and Procedures

This study used a cross-sectional design through the use of an online survey that was hosted on the Qualtrics platform. First, IRB approval was sought for a study with an English speaking (ES) sample, being successful in receiving exempt status. Next, IRB approval was sought for an exempt study modification involving also conducting the study with a Chinese Mandarin speaking (CMS) sample, which was also successful.

With receipt of approval for the study modification, the Chinese Consultant to the study, Dr. Li Zian, translated all study materials into Mandarin Chinese. The translated survey was deemed to be both culturally appropriate and well-suited for use in gathering a Chinese Mandarin speaking (CMS) sample. Dr. Zian also solely recruited the CMS sample. This included for the ES and CMS samples the use of snowballing, as those who took the survey shared the link with others.

The study recruited participants via a social media campaign that used postings of the following message on Facebook, Twitter, YouTube and various gaming sites, as well as the use of email. The Chinese Consultant also heavily favored the use of the WhatsApp messaging app for smartphones that is popular with Chinese international students around the globe.

A study incentive was used, specifically, a 1 in 250 chance of winning one of 3 \$100 Amazon gift cards—for both the ES sample and the CMS sample.

Summary Description of Study Sample—Completers Versus Non-Completers

The ES and CMS samples were successfully recruited, as they followed the survey link to access the survey, and began the survey. A total of 258 participants, including 117 ES and 141 CMS, provided Informed Consent and began the survey. Of the 117 ES, only 101 (86.3%) completed enough of the survey to provide data for the primary outcome variable. Of the 141 MCS, only 130 (92.2%) completed enough of the survey to provide data for the primary outcome variable. This reduced the whole final sample size for data analysis to 231 (89.5%), as a total of 27 were not included, given they did not complete the survey to the point of providing data for the primary outcome variable. Comparisons between the groups of study completers (n=231) versus non-completers (n=20 with sufficient data) showed, using independent samples t-tests, that there were no significant differences between the two groups for age, income, or education.

Summary of the Research Instrumentation

The following measures were used in the current study:

- Part I: Basic Demographics (BD-11)
- Part II: Gaming Initiation, Frequency & Other History and Gaming Behavior (GIF-OHGB-9)
- Part III: Cigarettes and Other Substance Use (COSU-3)
- Part IV-A: Internet Gaming Disorder Scale – Short Form (IGDS-SF-9)
- Part IV-B: Engagement in Violence Scale (EIVS-1)

- An Additional Supplemental Question # 11
- Part V: Retrospective Depression & Anxiety (R-DA-4)
- Part VI: Measure of Mental Health Services Utilization (M-MHSU-3)
- Part VII: General Help Seeking Questionnaire (GHSQ-2)
- Part VIII: Perceived Social Support (PSSS-5)
- Part IX: Rating of Offline Social Support (R-Offline-SS-2)
- Part X: Rating of Online Social Support (R-Online-SS-2)
- Part XI-Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RP-SD-R-1)

Summary of the Study Findings

Findings for Demographics (BD-11)

For gender, 62.4% (n=63) of the ES sample was male, while 55.4% (n=72) of the CMS sample was male. The ES sample had a mean age of 29.34 (SD=8.396, Min=18, Max=52), and the CMS sample had mean age of 25.65 (SD=7.514, Min=18, Max=57). While the CMS sample indicated they were Asian (99.2%, n=129), the ES sample was diverse, including 58% White (n=59), 17.8% (n=59) Asian, and 11.9% (n=12) Black.

Findings for Gaming Initiation, Frequency, Other History and Gaming Behavior (GIF-OHGB-9)

For the ES sample, the mean age of gaming initiation was 1.81 (SD=.821, Min=1, Max=4) for closest to between ages 7 and 12, and for the MCS sample the mean was 2.96 (SD=.872, Min=1, Max=4) for between the ages of 13 and 17. Regarding frequency of gaming in hours per week, for the ES sample, the mean hours per week spent gaming was 2.58 for between 8-14 hours and 15-20 hours (min 1, max 6, SD=1.402); and, for the CMS sample, mean hours per week spent gaming was 1.79 for closest to less than 7 hours (min 1, max 6, SD=1.166). For ever engaging in gaming on a daily basis, for the ES sample, 86.1% (n=87) had done so, while for the CMS sample 80% (n=104) had done so. For the ES sample, their top favorite gaming devices were mobile phone (77.2%, n=78), laptop (67.3%, n=68), and desktop computer (55.4%, n=56), while, similarly, for the CMS sample their top favorites were the same—i.e. mobile phone (86.9%, n=113), laptop (58.5%, n=76), and desktop (45.4%, n=59).

Findings for Cigarettes and Other Substance Use (COSU-3)

Some 83.2% (n=84) of the ES sample denied using cigarettes in the past 30 days, while 75.2% (n=98) of the CMS sample also had not. And, 54.5% (n=55) of the ES sample denied drinking alcohol in the past 30 days, while 71.5% (n=93) of the CMS sample also had not. For daily use of cigarettes, the CMS sample had 15.4% (n=20) who did so, while only 5% (n=5) of the EPS did so.

Findings with Internet Gaming Disorder Scale – Short Form (IGDS-SF-9)

Regarding whether any participant had met 5 of the 9 DSM-5 criteria for Internet Gaming Disorder (IGD), the prevalence of the diagnosis of IGD for the ES sample was 0% (n=101), while for the CMS sample the prevalence of IGD was .8% (n=1).

Findings on Mental Health Services Utilization (M-MHSU-3)

In terms of level of general mental health help-seeking for *personal/emotional problems*, the ES sample had 48.5% (n=49) who were extremely likely to seek out an intimate partner for help; and, the CMS sample had 41.5% (n=54) who were extremely likely to seek out an intimate partner for help. Other examples reflect lower frequencies.

Findings for General Help Seeking Questionnaire (GHSQ-2)

The level of general mental health help-seeking behavior is measured by the General Help-Seeking Questionnaire (GHSQ-2), as a 2-item scale developed by Wilson, Deane, Ciarrochi, and Rickwood (2005). The Cronbach's Alpha for the two main items of the GHSQ-2 was 0.847, which indicated good internal consistency.

Findings for Perceived Social Support (PSSS-5)

The ES sample had a mean of 3.47 (SD=1.104, min =1.00= no one like this in my life, max =5=6 or more people in my life; whereas, the CMS sample had a mean of 3.58 (SD=.989, Min =1.00, Max =5)—with both mean scores indicating the samples are

each between the categories of (3) having at least 2 people in one's life who provides support in that fashion, and (4) having 3-5 people.

Findings for Rating of Off-line Social Support (R-Offline-SS-2)

The ES sample had a mean of 4.61 (SD=1.058, min =1-very poor quality to max=5 – excellent quality) for closest to very good quality of offline social support; and, the CMS sample had a mean of 4.32 (SD=1.008, min =1-very poor quality to max=5 – excellent quality) for good quality of offline social support.

Findings for Rating of Online Social Support (R-Online-SS-2)

With regard to online social support, the ES sample had a mean of 3.7 (SD=1.328, min =1-very poor quality to max=5 – excellent quality) for closest to good quality of on-line social support; and, the CMS had a mean of 3.4, SD=.994, min =1-very poor quality to max=5 – excellent quality) for fair quality of on-line social support.

Findings with a New Single Item Rating for Providing Socially Desirable Responses

The ES sample had a mean of 4.71 for a moderate level of social desirability (SD=2.872, min =1-low social desirability, max=10 – high social desirability); and, the CMS sample had a mean of 5.70 for moderate social desirability (SD=3.09, min =1-low social desirability, max=10 – high social desirability). Of note, the regression analyses control for social desirability.

Findings for Relationships Among Variables

For the ES sample, using Pearson correlation, the greater the extent to which participants met more criteria for the diagnosis of Internet Gaming Disorder (IGD)--with Bonferroni Adjustment for multiple comparisons (i.e., $.05/11$ comparisons = $.005$ – significance level), then the: higher the level of engagement in violent behavior ($r = .406$, $p = .000$); lower their perceived social support ($r = -.347$, $p = .000$); and, lower their off-line social support ($r = -.265$, $p = .008$)

For the CMS sample, using Pearson correlation, the greater the extent to which participants met more criteria for the diagnosis of Internet Gaming Disorder (IGD)--with Bonferroni Adjustment for multiple comparisons (i.e., $.05/11$ comparisons = $.005$ – significance level), then the: higher the level of engagement in violent behavior ($r = .433$, $p = .000$); and, greater the pursuit of counseling past year ($r = .292$, $p = .001$)

Findings for the Backward Stepwise Regression

For the ES Sample significant predictors of extent to which sample meets DSM-5 criteria for IGD, were, as follows: not having a partner ($B = -2.519$, $p = .035$); higher income ($B = .733$, $p = .026$); more violence due to gaming ($B = .2.681$, $p = .000$); higher help seeking for personal/emotional support ($B = 1.922$, $p = .003$), and lower level of perceived social support ($B = -2.012$, $p = .000$).

For the CMS Sample, significant predictors of extent to which meet DSM-5 criteria for IGD) were: male gender ($B = 2.030$, $p = .009$); experienced anxiety in the past year ($B = 1.819$, $p = .022$); and, more engagement in violence due to gaming ($B = 2.531$, $p = .000$). The adjusted R-squared value for this model was 0.63, meaning that 26.3% of

the variance for extent of meeting DSM 5 criteria for IGD for the CMS sample (N=130) was explained by this model.

Discussion of Results

The main study findings reveal a prevalence of Internet Gaming Disorder (IGD), as an expression of addiction to gaming activity, as per the DSM-5 of the *Diagnostic and Statistical Manual of Mental Disorders*, of 0% (n=101) for the ES sample, while for the CMS sample the prevalence of IGD was .8% (n=1). This is consistent with the findings by Kim et al. (2017) that “the overall prevalence of Internet addiction is as low as 0.3%. This study’s findings also align with those in a recent meta-analysis suggesting that the real rate of Internet gaming addiction is around 3% concerning those at risk for IGA in this nation (Markey & Ferguson, 2017).

The prevalence of having ever engaged in violence due to gaming, the ES sample was 7.9% (n=8, for agree and strongly agree), and for the CMS it was 5.3% (n=7, for agree and strongly agree). This adds to the literature on this potential link between gaming and aggression. Others have also reported that IGD as associated with aggression (Seok et al., 2018).

This study found that, regarding 3x per week use of substances, 28% (n=27) of the CMS sample had used cigarettes at this frequency, while only 5% of the ES sample did so. This study follows Pontes and Griffiths (2015) who found the use of substances at least three times a week among gamers in their study: cigarettes (17.7%) and alcohol (12.4%). In the present study, 5.9% (n=6) of the ES sample drank alcohol three times a week, while 9.2% (n=12) of the CMS sample did so.

As another main study finding, for the CMS sample, study participants met more DSM-5 criteria for IGD (out of the 9 total criteria), when they were male, experienced anxiety in the past year, and were engaged in more violence due to gaming. For the ES sample, study participants met more DSM-5 criteria for IGD (out of the 9 total criteria), when they did not have a partner, had a higher income, were engaged in more violence due to gaming, engaged in a higher level of help seeking for personal/emotional support, and had a lower level of perceived social support. In essence, this constitutes the provision of risk profiles and descriptions of those most vulnerable to IGD. This study contributes to those efforts to conduct research on the DSM-5 criteria for IGD (APA, 2013).

The study adds to the growing body of research on IGD, building on the work of others, while using some of the same validated tools that originated in the work of Pontes and Griffiths (2015).

Implications for Practice and Recommendations for Research

Implications for health educators, and all health professionals are with regard to the use of the emergent profiles that characterize those who will meet a greater extent of the DSM-5 criteria for IGD. These profiles, most importantly, direct all of these professionals to use in practice brief screening tools, in order to detect any depression, as well as violence. The study suggests that such brief screening is vital, as for the CMS sample, study participants met more DSM-5 criteria for IGD (out of the 9 total criteria), when they were male, experienced anxiety in the past year, and were engaged in more

violence due to gaming. Referrals may also be in order to increase social support in the lives of gamers, since in the ES sample, study participants met more DSM-5 criteria for IGD (out of the 9 total criteria), when they did not have a partner, had a higher income, were engaged in more violence due to gaming, engaged in a higher level of help seeking for personal/emotional support, and had a lower level of perceived social support.

The tool for diagnosing IGD was developed and validated by Pontes and Griffiths (2015) as a short psychometric scale, that can diagnose IGD (i.e. meeting 5 of 9 criteria). In this study, the tool for diagnosing IGD produced a prevalence rate for IGD that aligned with prior studies. Future research should continue to use this tool, and others advanced by Pontes and Griffiths (2015). Using their tools may begin to solve a problem identified in the literature, wherein the tools used to analyze data prevent accurate collection of prevalence rates for Internet gaming disorder (Markey & Ferguson, 2017, p. 195).

Ideally, such tools are also used, along with the compliment of those used in the present study, given generally favorable internal consistency of study scales, even as some ranged as low as very poor to as high as excellent Cronbach's Alphas; as mentioned in Appendix H, *Internal Consistency of Study Scales*, it may have been inappropriate to have even calculated some of those Cronbach's Alphas were scale items were not intended to correlate with each other.

Recommendations for future research also include international research that engages colleagues who are familiar with and a part of cultures abroad, as did this study with collaboration with a Chinese consultant. This can permit the translation of study tools so they are culturally appropriate and engage participants in research. The Chinese consultant appears to have succeeded in making major contribution of translated versions

of the Pontes and Griffiths (2015) tools for diagnosing IGD as per the DSM-5 criteria. These can be disseminated in China and used for an ongoing line of international research that is linguistically and culturally appropriate. New colleagues who travel abroad, or live abroad should be encouraged to join such future collaborations. This may include translating the tools into other languages for use in countries where IGD is a pressing concern.

Limitations of the Study

Study limitations included the following: the use of an online sample of convenience, versus some other strategy that might create a more representative sample; and, a sample full of volunteers who may be more interested in the study, and therefore volunteer, potentially biasing the sample.

Conclusion

Even if the prevalence of Internet Gaming Disorder (IGD) is low in a sample, as found in this study, there may be value to collecting data that helps to resolve a current controversy as to whether IGD is pathologizing what may be normal intense gaming play.

This study's extremely low prevalence of IGD is addressed partly by Markey and Ferguson (2017); they approach problematic gaming by emphasizing how playing video games take up a lot of time, especially among young people, which has caused parents to worry that "their child might suffer from an addiction problem" (p. 195). However, the

child might not be addicted, and the parent might be in an exaggeration state due to worrying about their child's actions.

The findings in this study might reassure some parents that it might just be the case that what they are witnessing in their child is not an addiction, or IGD. On the other hand, the American Psychological Association has taken a conservative approach regarding Internet gaming disorder— because more research is needed before a decision with the APA is made to include the disorder in the “next incarnation of the DSM-5” (Markey & Ferguson, 2017, p. 195). A person who plays games after work is much different from a person who continuously play games until he or she loses their job or personal relationship (Markey & Ferguson, 2017).

This study's samples low prevalence rates for IGD indicate either that for many gamers there is no cause for concern about addiction per se; or, that studies such as the present one used a convenience sample of volunteers attracted to such a study, bringing bias into the research. Or, they may be motivated to prove that their gaming is not going to qualify for an IGD, under-reporting symptoms. These limitations could be rectified via funding intended to support a replication of this study with a large nationally representative sample.

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Appendix A

The Two IRB Approval Letters



Teachers College IRB

Exempt Study Approval

To: Miguel Torez
 From: Myra Luna Lucero, Research Compliance Manager
 Subject: IRB Approval: 19-171 Protocol
 Date: 02/04/2019

Thank you for submitting your study entitled, "*An online investigation into internet gaming disorder (IGD), comorbidity, and psychosocial issues: predictors of meeting criteria for a formal diagnosis of IGD*."; the IRB has determined that your study is **Exempt** from committee review (Category 2) on 02/04/2019.

Please keep in mind that the IRB Committee must be contacted if there are any changes to your research protocol. The number assigned to your protocol is **19-171**. Feel free to contact the IRB Office by using the "Messages" option in the electronic Mentor IRB system if you have any questions about this protocol.

Please note that your Consent form bears an official IRB authorization stamp and is attached to this email. Copies of this form with the IRB stamp must be used for your research work. Further, all research recruitment materials must include the study's IRB-approved protocol number. You can retrieve a PDF copy of this approval letter from the Mentor site.

Best wishes for your research work.

Sincerely,
 Dr. Myra Luna Lucero
 Research Compliance Manager
 IRB@tc.edu

Attachments:

- 2-Miguel Torez-CONSENT FORM_IRB.pdf



Teachers College IRB

Modification Approval Notification

To: Miguel Torez
 From: Myra Luna Lucero Research Compliance Manager
 Subject: IRB Modification Approval: 19-171 Protocol
 Date: 02/21/2019

Please be informed that as of the date of this letter, the Institutional Review Board for the Protection of Human Subjects at Teachers College, Columbia University has approved a *modification* to your exempt study, titled "*An online investigation into internet gaming disorder (IGD), comorbidity, and psychosocial issues: predictors of meeting criteria for a formal diagnosis of IGD*" on 02/21/2019, to translate the consent form for Mandarin-Chinese-speaking participants. We have found that the modification does not affect the exemption status of your protocol.

Any additional changes you contemplate to this protocol should be submitted as another *modification*.

Best wishes for your research work.

Sincerely,
 Dr. Myra Luna Lucero
 Research Compliance Manager
 IRB@tc.edu

Attachments:

- 2-Miguel Torez-CONSENT FORM_IRB.pdf
- Miguel Torez-M-TEXT MESSAGE-Chinese.pdf

Appendix B

Chinese Consultant's Letter

Zi Lian, MPH, MA, EdD

Post-doctoral Fellow

Center for Health Equity and Urban Science Education (CHEUSE)

Programs in Health Education & Community Health Education

Department of Health and Behavior Studies

Teachers College, Columbia University

Box 114, 525 West 120th Street, New York, NY 10027zl2355@tc.columbia.edu; lianz1991@gmail.com

Institutional Review Board (IRB)
 Teacher College, Columbia University
 New York, NY 10027

February 13, 2019

To Whom It May Concern:

I write to you as Dr. Zi Lian. I received my Doctor of Education degree in Health Education from Teachers College, Columbia University in 2017. I am currently a post-doctoral fellow within the Center for Health Equity and Urban Science Education (CHEUSE) at Teachers College, Columbia University. I am serving as a consultant on the project "*An Online Investigation into Internet Gaming Disorder (IGD), Comorbidity, and Psychosocial Issues: Predictors of Meeting Criteria for a Formal Diagnosis of IGD*" (Principal Investigator: Miguel Torez, MA)—IRB Protocol # 19-171. One of my major duties on this project was to translate the original survey from English to Mandarin Chinese. I am a native Chinese speaker and I confirm that all the study materials were conceptually and equivalently translated into Mandarin Chinese sentence by sentence by considering the definition of the original term. The terminologies were translated into accurate, equivalent, and appropriate terms in Mandarin Chinese, and all of the translations are linguistically and culturally appropriate.

This study survey and recruitment materials have been translated into Mandarin Chinese in order to reach a broad Chinese population that is dispersed globally, yet may be recruited through a social media campaign. Of note, the survey was translated verbatim from its original English version. Therefore, this survey is not tailored just for access by any specific ethnic population. Conceptually, it is believed that a survey in Mandarin Chinese would be more broadly distributed, better understood, and responded to more widely by those who are members of the global Chinese population.

There is no physical site or organization or any entity located abroad that is being used by or is associated with this study. Those identifying as Chinese and agreeing to participate in the study may be located or living anywhere in the global community. Indeed, I recently published an article with Dr. Barbara Wallace on the large population of Chinese International students dispersed globally—many of whom can be accessed using the exact same social media strategies used in the Lian and Wallace (2018) study, as well as in this present Miguel Torez study. I am excited to lend my expertise on recruiting Chinese study participants via social media platforms—as my additional key role in the research—used by Chinese International Students, and to collaborate on this important research study. I am also pleased to serve as the study contact person for all questions in Mandarin Chinese, as mentioned in the Informed Consent and shown on the study email, for example.

Sincerely,

Zi Lian, MPH, MA, EdD

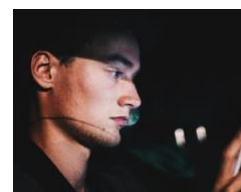
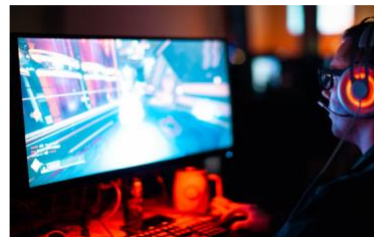
Appendix C

Recruitment Flyer—English Only

ARE U AN INTERNET GAMER? PLAY VIDEO GAMES?**TAKE A SHORT 15 MINUTE SURVEY FOR A CHANCE TO WIN A PRIZE!**

IRB Protocol Number 19-171

The Research Group on Disparities in Health within the Department of Health and Behavior Studies at Teachers College, Columbia University, in New York, NY is conducting a study to learn about the experience of those age 18 and above who play video games at least once a week, consider themselves to be involved in Internet gaming, and have been playing video games or been involved in Internet gaming for at least the past six months. We want to learn about the experiences of those who feel their involvement in video games and Internet gaming has become a problem in their lives, and the experiences of those who do not feel this way. We also want those who participate in the study to freely share their thoughts and feelings about their experiences. Study participation will take 15 minutes.



- Participation is limited to the first 250 gamers
- Study participation takes 15 minutes
- Those who complete study participation will have a 3 in 250 chance of winning 1 of 3 \$100 Amazon gift cards
- Please click on the link below, or tear-off a tab below and use the link, so you can view the informed consent, learn about your rights as a participant and proceed to the survey.
- We also invite you to forward the link, below—or text message, or tweet the message:

GO TO <https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players> to take a short 15-minute survey on your gaming experiences for chance to win 1 of 3 \$100 Amazon gift cards

THANK YOU FOR YOUR PARTICIPATION! HAVE QUESTIONS?

If you have any questions or would like to have additional information about the study, please contact:

Miguel Tomez, MA, Doctoral Candidate, Department of Health and Behavior Studies, Teachers College, Columbia University, Box 114, 525 W. 120th Street, New York, NY 10027; mt2751@tc.columbia.edu – OR –

Barbara C. Wallace, Ph.D., Director, Research Group on Disparities in Health, Professor of Health Education, Clinical Psychologist, Department of Health and Behavior Studies, Teachers College, Columbia University, Box 114, 525 W. 120th Street, New York, NY 10027; bcw3@tc.columbia.edu; Study Contact Number: 267-269-7411

Tear-off a tab with the link to the survey and spread the word

<p>GO TO https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players to take a short 15-minute survey on your gaming experiences for chance to win 1 of 3 \$100 Amazon gift cards</p>	<p>GO TO https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players to take a short 15-minute survey on your gaming experiences for chance to win 1 of 3 \$100 Amazon gift cards</p>	<p>GO TO https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players to take a short 15-minute survey on your gaming experiences for chance to win 1 of 3 \$100 Amazon gift cards</p>
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Appendix D

Recruitment Email –English and Chinese

ARE U AN INTERNET GAMER? PLAY VIDEO GAMES?**TAKE A SHORT 15 MINUTE SURVEY FOR A CHANCE TO WIN A PRIZE!**

IRB Protocol Number 19-171

The Research Group on Disparities in Health within the Department of Health and Behavior Studies at Teachers College, Columbia University, in New York, NY is conducting a study to learn about the experience of those age 18 and above who play video games at least once a week, consider themselves to be involved in Internet gaming, and have been playing video games or been involved in Internet gaming for at least the past six months. We want to learn about the experiences of those who feel their involvement in video games and Internet gaming has become a problem in their lives, and the experiences of those who do not feel this way. We also want those who participate in the study to freely share their thoughts and feelings about their experiences. Study participation will only take 15 minutes.

- Participation is limited to the first 250 gamers
- Study participation takes 15 minutes
- Those who complete study participation will have a 3 in 250 chance of winning 1 of 3 \$100 Amazon gift cards
- Please click on the link below so you can view the informed consent, learn about your rights as a participant and proceed to the survey.
- We also invite you to forward this email to others—or text message or tweet the message, below:

GO TO <https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players> to take a short 15-minute survey on your gaming experiences for chance to win 1 of 3 \$100 Amazon gift cards

THANK YOU FOR YOUR PARTICIPATION! HAVE QUESTIONS?

If you have any questions or would like to have additional information about the study, please contact:

Miguel Torez, MA, Doctoral Candidate, Department of Health and Behavior Studies, Teachers College, Columbia University, Box 114, 525 W. 120th Street, New York, NY 10027; mt2751@tc.columbia.edu – **OR** –

Barbara C. Wallace, Ph.D., Director, Research Group on Disparities in Health, Professor of Health Education, Clinical Psychologist, Department of Health and Behavior Studies, Teachers College, Columbia University, Box 114, 525 W. 120th Street, New York, NY 10027; bwc3@tc.columbia.edu; Study Contact Number: 267-269-7411

您是一个网游玩家吗？您玩电子游戏吗？
参与一个15分钟问卷调查，您将有一个机

伦理审查委员会协议号：19-171

哥伦比亚大学教师学院健康与行为研究系健康差异研究小组正在进行一项关于网络游戏、电子游戏者的研究。如果您符合以下条件，我们邀请您参与我们的研究：18岁或以上；每周至少玩一次电子游戏；认为自己参与网络游戏；并在过去的六个月有持续游戏行为。我们希望通过此次研究，去了解那些认为他们的游戏行为已成为他们生活中的一个问题（已给他们的生活造成困扰）的人们的经历，以及那些没有这种感觉的人们的经历。同时，我们也希望研究参与者能够自由地分享他们对自己经历的想法和感受。参加该项研究只需15分钟。

- >参与者限前250名完成调查问卷的游戏玩家
- >参与研究需要15分钟
- >完成问卷调查的参与者将有有机会赢取一张100美元亚马逊礼品卡（共将在250人中抽取3名中奖者）
- >请点击下面的链接，以查看知情同意书，了解您作为参与者的权利，并进入调查问卷。
- >我们邀请您将此电子邮件转发给其他人，或者通过短信、微信或其它方式将以下短讯息传达给他人，从而让更多人了解并有机会参与到我们的研究中

点击链接<https://tinyurl.com/Internet-Gaming-Study-Chinese>参与一个关于您游戏经历的15分钟简短调查问卷，您将有机会赢取一张100美元亚马逊礼品卡（共抽取三张）

感谢您的参与！

如果您有任何问题，或是想要获得更多关于本项研究的信息，请联系：

连子，博士，公共卫生硕士，哥伦比亚大学教师学院健康公平与城市科学教育中心 (CHEUSE) 博士后，地址：Box 114, 525 W. 120th Street, New York, NY 10027; 邮箱：

zl2355@tc.columbia.edu

如果您有任何关于此研究的英文版本上的问题，请联系：

Miguel Tomez, 硕士，哥伦比亚大学教师学院健康与行为研究系博士生，地址：Box 114, 525 W. 120th Street, New York, NY 10027; 邮箱：mt2751@tc.columbia.edu - 或 -

Barbara C. Wallace, 博士，健康差异研究小组主任，哥伦比亚大学教师学院健康与行为研究系健康教育教授，临床心理学家，地址：Box 114, 525 W. 120th Street, New York, NY 10027; 邮箱：bcw3@tc.columbia.edu; 研究联系电话：1-267-269-7411

Appendix E

Recruitment Text/Tweet

English

GO TO <https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players> to take a short 15-minute survey on your gaming experiences for chance to win 1 of 3 \$100 Amazon gift cards

OR

GO TO <https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players> to take 15-minute survey on your gaming for chance to win 1 of 3 \$100 Amazon gift cards

OR

CLICK <https://tinyurl.com/Study-On-Internet-Gaming-Video-Game-Players> to take 15-minute survey on your gaming for chance to win 1 of 3 \$100 Amazon gift cards

Mandarin Chinese

点击链接<https://tinyurl.com/Internet-Gaming-Study-Chinese>参与一个关于您游戏经历的15分钟简短调查问卷，您将有机会赢取一张100美元亚马逊礼品卡（共抽取三张）

Appendix F

English and Chinese Informed Consents

Teachers College, Columbia University
525 West 120th Street
New York NY 10027
212 678 3000

INFORMED CONSENT**IRB Protocol Number 19-171**

Protocol Title: An Online Investigation into Internet Gaming Disorder (IGD), Comorbidity, and Psychosocial Issues: Predictors of Meeting Criteria for a Formal Diagnosis of IGD

Principal Investigator: Miguel Tomez, MA, Teachers College, Columbia University, 904-386-8441; mt2751@tc.columbia.edu

INTRODUCTION You are being invited to participate in this research study called “An Online Investigation into Internet Gaming Disorder (IGD), Comorbidity, and Psychosocial Issues: Predictors of Meeting Criteria for a Formal Diagnosis of IGD.” You may qualify to take part in this research study if you are: an adult age 18 or above, able to read and understand English on a high school level, play video games at least once a week at a minimum, consider yourself to be involved in Internet gaming, and have been gaming for the past six months. Approximately 250 people will participate in this study, and it will take approximately 15 minutes of your time to complete.

WHY IS THIS STUDY BEING DONE? This study is being done to learn about the experiences of those who play video games at least once a week, consider themselves to be involved in Internet gaming, and have been playing video games or been involved in Internet gaming for at least the past six months. We want to learn about the experiences of those who feel their involvement in video games and Internet gaming has become a problem in their lives, and the experiences of those who do not feel this way.

WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY? If you decide to participate in the study, you will answer a series of questions for an online survey on the following topics: your personal background (age, education, etc.); your history of playing video games; your social involvement with others; and whether you experience any stress, depression, anxiety, or issues with cigarettes or other substances.

WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY?

This is a minimal risk study, which means the harms or discomforts that you may experience are not greater than those you would ordinarily encounter if you were completing paperwork in a clinic, hospital, school, or work setting. The risks of study participation include the possibility that you may feel some discomfort from taking the survey or some stress due to some of the questions. However, your participation in this study is completely voluntary, and you can stop at any time.

WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY?

There is no direct benefit to you for participating in this study.

WILL I BE PAID FOR BEING IN THIS STUDY?

You will not be paid to participate. However, when you complete the survey you will be invited to enter your email address and to hit a “submit” button—so that you are officially entered into a drawing for a chance to receive a prize (i.e., there will be 3 bar coded Amazon gift certificates for \$100 each). You do not have to enter the lottery drawing to complete the survey. Once you submit your email address, then it will automatically be entered into a private and secure data base that even the principal investigator cannot access. Once 250 people have completed the entire survey, you will have a 3 in 250 chance of winning one of the 3 bar coded Amazon gift certificates for \$100 each. The www.Amazon.com gift certificates will be sent to three randomly chosen e-mail accounts using a secure online program. This occurs without in any way linking your identity to the survey results. The principal investigator is not able to view any of the e-mail addresses to which the gift certificates are sent. Only the 3 winners will be contacted.

WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS?

The study is over when you have completed the online survey. However, you can discontinue answering the survey questions at any time. You can exit the study at any time and delete the link to the study.

PROTECTION OF YOUR CONFIDENTIALITY

The study does not involve linking your survey responses to any personal information that might identify you, keeping your information confidential. Teachers College, Columbia University has determined that www.Qualtrics.com provides a secure platform for the online survey you will take. The survey data files will also be saved on the primary researcher’s password protected computer. Regulations require that research data be kept for at least three years.

For quality assurance, the study team, and/or members of the Teachers College Institutional Review Board (IRB) may review the data collected from you as part of this study. Otherwise, all information obtained from your participation in this study will be held strictly confidential and will be disclosed only with your permission or as required by U.S. or State law.

HOW WILL THE RESULTS BE USED? The results of this study will be published in journals and presented at academic conferences. This study is being conducted as part of the doctoral dissertation of the principal investigator.

WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY?

If you have any questions about taking part in this research study, you should contact the principal investigator, Miguel Tomez, MA at mt2751@tc.columbia.edu or at 904-386-8441. You can also contact the sponsor/ supervisor of this research study, Dr. Barbara Wallace, at bcw3@tc.columbia.edu or 267-269-7411.

If you have questions or concerns about your rights as a research subject, you should contact the Institutional Review Board (IRB) (the human research ethics committee) at 212-678-4105 or email IRB@tc.edu. Or you can write to the IRB at Teachers College, Columbia University, 525 W. 120th Street, New York, NY 10027. Box 151. The IRB is the committee that oversees human research protection for Teachers College, Columbia University.

PARTICIPANT'S RIGHTS

- I have read the Informed Consent Form and have been offered the opportunity to discuss the form with the researcher.
- I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study.
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty.
- The researcher may withdraw me from the research at his or her professional discretion. I understand that if I take the survey more than once I will be eliminated from the study.
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the researcher will provide this information to me.
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- I should receive a copy of the Informed Consent Form document. (I understand that I can download it).

By checking the box below, I agree to participate in the study and I am confirming that I am an adult age 18 or above, am able to read and understand English on a high school level, play video games at least once a week at a minimum, consider myself to be involved in Internet gaming, and have been gaming for the past six months.

I agree to participate in this study.

哥伦比亚大学教育学院
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知情同意书

伦理审查委员会协议号：19-151

协议标题：关于网络游戏障碍（IGD），合并症，心理社会问题以及网络游戏障碍（IGD）诊断预测因素的在线调研

首席研究员：Miguel Tomez，硕士，哥伦比亚大学教育学院，

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介绍

您被邀请参加这项名为“**关于网络游戏障碍（IGD），合并症，心理社会问题以及网络游戏障碍（IGD）诊断预测因素的在线调研**”的课题研究。如果您符合以下条件，您将有资格参加本研究：18岁或以上的成年人；具备高中中文阅读理解水平；每周至少玩一次电子游戏；认为自己参与网络游戏，并在过去的六个月有持续游戏行为。本研究将招募250名左右参与者，完成该问卷将需要15分钟左右。

为什么要进行这项研究？

这项研究旨在了解那些每周至少玩一次电子游戏、认为自己参与网络游戏并至少在过去的六个月中有持续游戏行为的人的经历。我们希望了解那些认为他们的游戏行为已成为他们生活中的一个问题（已给他们的生活造成困扰）的人们的经历，以及那些没有这种感觉的人们的经历。

如果我同意参加本研究，我会被要求做什么？

如果您决定参加该研究，您将参与一个网络问卷调查并回答涵盖以下主题的一系列问题：您的个人背景（年龄，教育经历等）；您玩电子游戏的历史；您与他人的社交行为；以及您是否经历任何压力，抑郁，焦虑或香烟或其他药物使用的问题。

参与这项研究有哪些可能存在的风险或不妥？

对于参与者来说，这项研究的风险极低。您在参与此研究中可能遇到的危害或不妥，不高于您通常在在诊所，医院，学校或工作场所完成文书工作时可能遇到的危害或不妥。

参与这项研究有哪些可能存在的利益？

对于参与者来说，参与本研究没有直接的利益。

参与这项研究，我将获得报酬吗？

参与本研究没有报酬。但是，当您完成调查问卷后，您将被邀请输入您的电子邮箱并点击“提交”按钮。接着，您的邮箱就进入了一个正式的抽奖系统，而您将有机会获得一张价值100美金的亚马逊礼品卡（共将抽取三张）。您也可以在不进入抽奖系统的情况下完成调研。在您输入并提交了您的电子邮箱后，您的电子邮箱将自动进入一个数据库，该数据库私密并十分安全，即使是本研究的首席研究员也无法访问。当有250名参与者完成网络问卷后，您将有机会赢取一张价值100美金的亚马逊礼品卡（共抽取三名获奖者，礼品卡会以条形码的电子形式发送到获奖者的电子邮箱）。礼品卡的抽取完全是随机的，一个安全的网络抽奖系统会自动将礼品卡发送到获奖者所提交的邮箱。这种方式将确保您的身份与您在问卷中所做的回答不会相关联。获奖者的信息完全保密，本研究的首席研究员亦无法查看礼品券发送到的任何电子邮件地址。只有三位获奖者会被联系。

对于参与者来说，这项研究何时结束？我可以在完成前离开吗？

当您完成网络调查问卷后，该研究即结束。但是，您可以随时停止回答调查问卷的问题。您可以随时退出研究并删除研究链接。

隐私保护和保密性

该研究不会将您的问卷回答与任何可能识别您身份的个人信息相关联，因此，您的信息是完全保密的。哥伦比亚大学教师学院已确定www.Qualtrics.com为您将参与的在线调查研究提供了一个安全的平台。调查结果的数据文件将保存在核心研究人员的计算机上（计算机受密码保护）。法规要求调查数据需至少保存三年。

出于质量保证的目的，科研团队，以及哥伦比亚大学教师学院的伦理审查委员会（IRB）成员，可能会审查您提供的数据，即您在网络调查问卷中的答复。这是该研究的一部分。除此之外，您在本研究中所提供的所有信息将严格保密，并且只有在您的许可下或美国联邦或州法律要求下才会披露。

研究结果如何使用？

这项研究的结果将发表在学术期刊和学术会议上。本研究也是首席研究员（如上）博士毕业论文的一部分。

谁能回答我对这项研究的疑问？

连子, 博士, 公共卫生硕士, 哥伦比亚大学教师学院健康公平与城市科学教育中心 (CHEUSE) 博士后, 地址: Box 114, 525 W. 120th Street, New York, NY 10027; 邮箱: zl2355@tc.columbia.edu

如果您有任何关于此研究的英文版本上的问题, 请联系:

如果您对参与本研究有任何疑问, 请联系首席研究员Miguel

Torez (邮箱: mt2751@tc.columbia.edu; 电话: 1-904-386-8441。

您也可以通过bcw3@tc.columbia.edu或267-269-

7411联系本研究的保证人/主管Barbara Wallace博士。

如果您对作为研究对象的权利有疑问或疑虑, 请致电212-678-

4105或发送电子邮件至IRB@tc.edu与伦理审查委员会 (IRB) (人类研究伦理委员会) 联系。或者您可以写信给哥伦比亚大学教育学院的IRB, 地址是525 W. 120th Street, 纽约市, 纽约州, 邮编10027,

信箱151。哥伦比亚大学教师学院的伦理审查委员会负责监督该学院内以人类为研究对象的研究, 并保护研究参与者权利。

研究参与者的权利

- 我已阅读知情同意书, 并有机会与研究人员讨论该同意书。
- 我有充足的机会就本研究的目的, 程序, 风险和益处提出问题。

- 我知道我的参与是自愿的。我可以随时拒绝参与或退出该研究，我不会因此受到处罚。
- 研究人员可以根据他们的专业判断决定将我从研究中撤出。我明白如果我不止一次回答了调查问卷，我将会被从研究中撤出。
- 如果在研究过程中出现了可能与我是否继续参与的意愿相关的重要新信息，研究人员将向我提供此信息。
- 未经我的另行同意，任何我在此研究中所提供的可以识别我个人身份的信息，都不会被泄露，除非法律明确要求。
- 我应该收到知情同意书文件的副本。（我知道我可以下载它）。

通过选中下面的方框，我同意参加这项研究。我确认自己符合以下条件：18岁或以上的成年人；具备高中中文阅读理解水平；每周至少玩一次电子游戏；认为自己参与网络游戏，并在过去的六个月有持续游戏行为。

我同意参加这项研究。

Appendix G

Survey Tool in English and Chinese

SCREENING TOOL FOR INTERNET GAMING STUDY

1-Are you at least at least 18 years of age?

Yes___ No___

2-Are you able to read and understand English on a 12th grade level?

Yes___ No___

3-Do you play video games at least once a week, *at a minimum*?

Yes___ No___

4-Do you consider yourself to be involved in Internet gaming?

Yes___ No___

5-Have you been playing video games or involved in Internet gaming for *at least the past six months*?

Yes___ No___

6-Are you able to devote about **15 minutes** to this study at this time—for a chance to win one of three \$100 Amazon gift cards?

Yes___ No___

If they answered YES to all of the above questions → they access survey.

SURVEY FOR THE INTERNET GAMING STUDY – ENGLISH VERSION

Please answer the following questions by placing a check next to the answer you choose, or write in the space provided.

SURVEY FOR PART I: BASIC DEMOGRAPHICS (BD-11)

[NOTE: This is a standard tool commonly used by Research Group on Disparities in Health RGDH)]

1) **MY gender is:** ___Female ___Male ___Other (Please explain_____)

2) **MY age is:** _____ (USE DROP DOWN MENU OF 18 to 85)

3) **MY race/ethnicity is as follows:** (Please mark all that apply)

___Black/African American

___White / Caucasian / European American

___Hispanic / Latino (including Dominican, Puerto Rican, Mexican, Mexican American, Chicano, Cuban, other Spanish)

___Asian (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, or other Asian)

___American Indian / Alaska Native

___Native Hawaiian / Pacific Islander

___Arab American / Middle Eastern

___Other group(s) (Please specify)

4) Please indicate the country that you live in NOW:

[DROP DOWN MENU WITH COUNTRIES]

If you live in the US, what is your zip code _____ NA- I Do not live in US _____

5) Please indicate the country of your birth:

[DROP DOWN MENU WITH COUNTRIES]

6) Do you currently have a partner?

__Yes __No

7). Are you a student? __No __Yes**8) Are you employed? __No __Yes __Other (explain)****9). MY yearly household income is:**

- 1-Less than \$9,000
- 2-\$10,000 to \$19,000
- 3-\$20,000 to \$39,000
- 4-\$40,000 to \$49,000
- 5-\$50,000 to \$99,999
- 6-\$100,000 to \$199,999
- 7-\$200,000 to \$299,000
- 8-\$300,000 to \$399,000
- 9-\$400,000 to \$499,000
- 10-\$500,000 to \$799,000
- 11-\$800,000 or More

10). MY highest education level is:

- Less than high school
- High school or high school equivalent (GED)
- Some college or a Certificate Program
- 2 year college degree (Associates)
- 4 year college degree (Bachelor's)
- Masters degree
- J.D. - Lawyer
- Doctoral Degree (Ph.D., Ed.D, etc.).
- Medical Degree (M.D., D.D.S., etc.)

11) My type of medical insurance is (check all that apply)

- a) Private insurance plan (e.g. Blue Cross/Blue Shield, Aetna, Oxford, etc...)
- b) HMO c) Medicaid d) Medicare.. e) Other insurance plan (explain)_____
- f) Not Applicable, I have no medical insurance

PART II: GAMING INITIATION, FREQUENCY & OTHER HISTORY AND GAMING BEHAVIOR (GIF-OHGB-9)

[Taken from: Pontes, H. M., & Griffiths, M. D. (2015). Measuring DSM-5 Internet Gaming Disorder: Development and validation of a short psychometric scale. *Computers in Human Behavior*, 45, 137-143.

NOTE: items # 3, 4, 5 and 8 were added as new items, being co-created by the Principal Investigator and the dissertation sponsor.]

1-At what age did you first begin to play video games, or begin internet gaming?

- Before age 6 Between age 7 and 12 Between age 13 and 17
 After age 18 I do not recall

2-How many hours per week do you play video games, or engage in internet gaming?

- Less than 7 hours
 Between 8 and 14 hours
 Between 15 and 20 hours
 Between 21 and 30 hours
 Between 31 and 40 hours
 More than 40 hours

3-Since you first started playing, have you ever played video games or engaged in internet gaming every day of the week, or daily?

- Yes No

4-On a single day, or in a 24 hour period, what is the most amount of time in hours that you ever played?

- 1-3 hours 4-6 hours 7-9 hours 10-13 hours 14-16 hours
 17-19 hours 20-23 hours 24 hours

5- Have you ever started seeing things in the virtual world from a game come into the real world? Yes No

6-Do you own a mobile device with Internet access? Yes No

7-Do you own a game console or other dedicated gaming device? Yes No

8- Check all the following that you have used for your gaming activities:

- Nintendo Switch____ PlayStation 4____ Xbox One____ Desktop
 Computer____ Laptop Computer____ iPad____ Mobile Phone____ Virtual
 Reality____ Social Media Gaming (example: Facebook games)____ Other____(Please
 explain)

9-As an optional question, please list your top 3-5 favorite video games:_____

PART III: CIGARETTE AND OTHER SUBSTANCE USE (COSU-3)

[Item # 2 Taken from: Pontes, H. M., & Griffiths, M. D. (2015). Measuring DSM-5 Internet Gaming Disorder: Development and validation of a short psychometric scale. *Computers in Human Behavior*, 45, 137-143.

NOTE: For item # 2, more options were added, beyond their cigarettes and alcohol; and items # 1 & 3 was added as new items.]

1- Have you used any of the following substances in the past 30 days? (Check all that apply)

Cigarettes Yes No

E-cigarettes Yes No

Alcohol Yes No

Marijuana/oil Yes No

Heroin/Other Opioid Yes No

Cocaine Yes No

Other (explain) _____ Yes No

IF YES → # 2. IF NO → SKIP TO PART IV-A

2- Do you use any of the following substances more than 3 times a week? (Check all that apply)

Cigarettes Yes at least 3 times a week No

E-cigarettes Yes at least 3 times a week No

Alcohol Yes at least 3 times a week No

Marijuana/oil Yes at least 3 times a week No

Heroin/Other Opioid Yes at least 3 times a week No

Cocaine Yes at least 3 times a week No

Other (explain) _____ Yes at least 3 times a week No

3- Do you use any of the following substances daily? (Check all that apply)

Cigarettes Yes, daily No

E-cigarettes Yes, daily No

Alcohol Yes, daily No

Marijuana/oil Yes, daily No

Heroin/Other Opioid Yes, daily No

Cocaine Yes, daily No

Other (explain) _____ Yes, daily No

PART IV-A: INTERNET GAMING DISORDER SCALE – SHORT FORM (IGDS-SF-9)

Taken from: Pontes, H. M., & Griffiths, M. D. (2015). Measuring DSM-5 Internet Gaming Disorder: Development and validation of a short psychometric scale. *Computers in Human Behavior*, 45, 137-143. doi:10.1016/j.chb.2014.12.006

Instructions: These questions will ask you about your gaming activity during the past year (i.e., last 12 months). By gaming activity we understand any gaming-related activity that has been played either from a computer/laptop or from a gaming console or any other kind of device (e.g., mobile phone, tablet, etc.) both online and/or offline.

1- Do you feel preoccupied with your gaming behavior? (Some examples: Do you think about previous gaming activity or anticipate the next gaming session? Do you think gaming has become the dominant activity in your daily life?)

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

2- Do you feel more irritability, anxiety or even sadness when you try to either reduce or

stop your gaming activity?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

3-Do you feel the need to spend increasing amount of time engaged gaming in order to achieve satisfaction or pleasure?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

4- Do you systematically fail when trying to control or cease your gaming activity?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

5- Have you lost interests in previous hobbies and other entertainment activities as a result of your engagement with the game?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

6- Have you continued your gaming activity despite knowing it was causing problems between you and other people?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

7- Have you deceived any of your family members, therapists or others because of the amount of your gaming activity?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

8- Do you play in order to temporarily escape or relieve a negative mood (e.g., helplessness, guilt, anxiety)?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

9- Have you jeopardized or lost an important relationship, job or an educational or career opportunity because of your gaming activity?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly agree

Scoring information:

Total scores can be obtained by summing up all responses given to all nine items of the IGDS9-SF and can range from a minimum of 9 to a maximum of 45 points, with higher scores being indicative of a higher degree of Internet Gaming Disorder. In order to differentiate disordered gamers from non-disordered gamers, researchers should check if participants have endorsed at least five criteria out of the nine by taking into account answers as ‘5: Very Often’, which translates as endorsement of the criterion.

PART IV-B: ENGAGEMENT IN VIOLENCE SCALE (EIVS-1)

Supplemental Violence Question # 10 (not part of DSM-5 criteria or score)

**10-Have you ever been violent—hitting, striking, or pushing someone (parent, sibling, peer, or co-worker, etc.), or destroyed anything (breaking objects, smashing things), because of your gaming activity?

1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree 5_Strongly

agree

[NOTE: This is a new separate, independent Engagement in Violence Scale (EIVS-1), and this item is not to be added to the scoring for meeting DSM-5 criteria]

Supplemental Counseling Question # 11 (not part of DSM-5 criteria or score)

*11-Because of your gaming activity, did you seek out any kind of counseling (e.g. mental health professional) in the past year?

No Yes Not Applicable (i.e. no experience of any of the issues cited above due to my gaming behavior)

[NOTE: *This question follows Lian (2013), and is added 2 items like this in Part V for seeking out any kind of counseling for depression or anxiety. The total of 3 items forms the Part VI Measure of Mental Health Services Utilization (M-MHSU-3) advanced by Lian (2017).]

PART V: RETROSPECTIVE DEPRESSION & ANXIETY (R-DA-4)

[NOTE: This is a standard tool commonly used by Research Group on Disparities in Health RGDH). For this study, it was shortened (not asking about past month, past 6 months, only past year], and question about trauma were added]

Depression is an overwhelming feeling of intense sadness. It can include feeling helpless, hopeless, and worthless. It can sometimes be expressed through angry outbursts, as well as bursting into tears. There can also be loss of appetite, or an increase in appetite. There can also be difficulty sleeping, or oversleeping. In addition, there can be a loss of interest in your activities. Such a depression can last for days or weeks. This goes beyond typical feelings of sadness, such as following some disappointment.

1-Now think back over the past year or 12 months. Do you think you experienced any **depression in the past year or 12 months?**

No Yes

2-If you answered Yes, above, did you seek out any kind of counseling (e.g. mental health professional)?

No Yes Not Applicable (i.e. no experience of depression)

Anxiety is an overwhelming and intense feeling of nervousness, fear, tension, powerlessness, and apprehension. It can reach a peak so there are moments of panic where one's heart may be pounding/beating quickly, or there is rapid breathing/difficulty breathing. A person may also experience sweating and trembling. Sometimes it can be so intense that one has trouble concentrating/thinking, leaving the house, or trouble being around other people. The fear can be very intense and one can feel like there is some impending danger. This goes beyond typical feelings of nervousness, such as when anticipating a new situation, or something unexpected, or unknown.

3-Now think back over the past year or 12 months. Do you think you experienced any **anxiety in the past year or 12 months?**

No Yes

4-If you answered Yes, above, did you seek out any kind of counseling (e.g. mental health professional)?

No Yes Not Applicable (i.e. no experience of anxiety)

PART VI: MEASURE OF MENTAL HEALTH SERVICES UTILIZATION (M-MHSU-3)

Following Lian (2017), this is derived from the above survey Part V. Taking from the above survey Part V, the M-MHSU-3 is based on items # 2 & 4—and from Part IV- item # 11. The 3rd item is different from what Lian (2017) used. These 3 items are summed to create a measure of mental health service utilization, as a continuous variable ranging from 0 to 3. (No=0, Yes = 1)

PART VII: GENERAL HELP-SEEKING QUESTIONNAIRE (GHSQ-2)

[Taken from: Wilson, C. J., Deane, F. P., Ciarrochi, J. V., & Rickwood, D. (2005). Measuring help seeking intentions: Properties of the General Help Seeking Questionnaire. *Canadian Journal of Counselling*, 39 (1), 15-28.

The level of general mental health help-seeking behavior is measured by the General Help-Seeking Questionnaire (GHSQ-2), as a 2-item scale developed by Wilson, Deane, Ciarrochi, and Rickwood (2005). The Cronbach's Alpha for the two main items of the GHSQ-2 was 0.847, which indicated good internal consistency.]

1. If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?

Please indicate your response by checking the number that best describes your intention to seek help from each help source that is listed.

1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely

10. Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de'facto) _____
11. Friend (not related to you) _____
12. Parent _____
13. Other relative / family member _____
14. Mental health professional (e.g., psychologist, social worker, counsellor) _____
15. Phone helpline (e.g., Lifeline) _____
16. Doctor / General Practitioner _____
17. Minister or religious leader (e.g. Priest, Rabbi, Chaplain) _____
18. I would not seek help from anyone _____
19. I would seek help from another not listed above (please list in the space provided, e.g., work colleague. If no, leave blank) _____

2. If you were experiencing suicidal thoughts, how likely is it that you would seek help from the following people?

Please indicate your response by checking the number that best describes your intention to seek help from each help source that is listed.

1 = Extremely Unlikely 3 = Unlikely 5 = Likely 7 = Extremely Likely

1. Intimate partner (e.g., girlfriend, boyfriend, husband, wife, de'facto) _____
2. Friend (not related to you) _____
3. Parent _____
4. Other relative / family member _____
5. Mental health professional (e.g., psychologist, social worker, counsellor) _____
6. Phone helpline (e.g., Lifeline) _____
7. Doctor / General Practitioner _____
8. Minister or religious leader (e.g. Priest, Rabbi, Chaplain) _____
9. I would not seek help from anyone: _____
10. I would seek help from another not listed above (please list in the space provided, e.g., work colleague. If no, leave blank) _____

PART VIII: PERCEIVED SOCIAL SUPPORT (PSSS-5)

[This is a tool created for use by the Research Group on Disparities in Health (RGDH). It was first used in: Lian, Z. (2017). Predictors of depression/anxiety, mental health service utilization, and help-seeking for Chinese international students: Role of acculturation, microaggressions, social support, coping self-efficacy, stigma, and college staff's cultural competence and cultural humility. Doctoral Dissertation, Teachers College, Columbia University. Lian (2017) reported the new five-item Perceived Social Support scale (PSSS-5) had Cronbach's Alpha of 0.901 (5 items), which indicated excellent internal consistency.]

Having SOCIAL SUPPORT means having family, friends, peers, room-mates, or neighbors that live near you and can provide assistance in all the ways listed, below. Please indicate the extent to which you experience SOCIAL SUPPORT in your life at this time (i.e., right now), specifically in the following ways:

1. I could ask for advice if I needed it, and could get it pretty quickly without waiting
 1. I have no one like this in my life right now
 2. I have at least 1 one person like this in my life right now
 3. I have at least 2 people like this in my life right now
 4. I have 3-5 people like this in my life right now
 5. I have 6 or more people like this in my life right now

2. I could go to them in an emergency for help (e.g. such as a place to wait/stay if I was locked out of my housing/dormitory room/apartment)
 1. I have no one like this in my life right now
 2. I have at least 1 one person like this in my life right now
 3. I have at least 2 people like this in my life right now
 4. I have 3-5 people like this in my life right now
 5. I have 6 or more people like this in my life right now

3. I could borrow money from them if my wallet/purse was stolen and I needed money (e.g. for transportation to take a bus, subway, to get to school or back to where you live)

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

4. I could get food from them if I was hungry and had no food because of some emergency in my life

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

5. I could receive encouraging words from them, if I was struggling with something

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

PART IX: RATING OF OFF-LINE SOCIAL SUPPORT (R-OFFLINE-SS-2)

[This is a new tool created for use by the Principal Investigator and his dissertation sponsor, for use by the Research Group on Disparities in Health (RGDH)—with fist-time use in this study]

1-Please rate the quality of the social support that you receive from people when you are **off-line, not on the Internet, and not involved in gaming activities:**

- _1-very poor _2-poor _3-fair _4-good _5-very good _6-excellent
 __Not applicable – I receive no social support from people offline

2-How important in your life is the **off-line social support** that you receive from other people?

- _1-extremely unimportant
 _2-very unimportant
 _3-somewhat unimportant
 _4-somewhat important
 _5-very important
 _6-extremely important
 __Not applicable – I receive no social support from people offline

PART X: RATING OF ONLINE SOCIAL SUPPORT (R-ONLINE-SS-2)

[This is a new tool created for use by the Principal Investigator and his dissertation sponsor, for use by the Research Group on Disparities in Health (RGDH)—with first-time use in this study]

1-Please rate the social support that you receive people when you are **online, on the Internet, and involved in gaming activities:**

_1-very poor _2-poor _3-fair _4-good _5-very good _6-excellent

_Not applicable – I receive no social support from people online

2-How important in your life is the **online social support** that you receive from other people (who are alive, human beings)

_1-extremely unimportant

_2-very unimportant

_3-somewhat unimportant

_4-somewhat important

_5-very important

_6-extremely important

_Not applicable – I receive no social support from people online

PART XI-SINGLE ITEM RATING OF RISK OF PROVIDING SOCIALLY DESIRABLE RESPONSES

[Note: This is a new single item scale created for first time use in studies in 2018, and for the Research Group on Disparities in Health (RGDH)]

1-I sometimes say things that I think will please people, or what I think they want to hear—versus the honest truth, which might be difficult or painful for other people to hear and accept, or might lead them to judge me harshly...

I rate myself on a scale of 0 to 10, as follows:

0	1	2	3	4	5	6	7	8	9	10
0-I am not like this at all										10-I am like this all the time

----- **END OF SURVEY – THANK YOU!** -----
SHARE WITH OTHERS!

SCREENING TOOL FOR INTERNET GAMING STUDY

筛选问题：网络游戏调查研究问卷

1-Are you at least at least 18 years of age?

Yes___No___

2-Are you able to read and understand English on a 12th grade level?

Yes___No___

3-Do you play video games at least once a week, *at a minimum*?

Yes___ No___

4-Do you consider yourself to be involved in Internet gaming?

Yes___ No___

5-Have you been playing video games or involved in Internet gaming for *at least the past six months*?

Yes___ No___

6-Are you able to devote about **15 minutes** to this study at this time—for a chance to win one of three \$100 Amazon gift cards?

Yes___No___

1 - 您是否至少年满18岁？

是___ 否___

2 - 您是否具有高中（或同等）水平的中文阅读和理解水平？

是___ 否___

3 - 您每周至少玩一次电子游戏吗？

是___ 否___

4 - 您认为自己参与网络游戏吗？

是___ 否___

5 - 至少在过去六个月中，您是否一直在玩电子游戏或参与网络游戏？

是___ 否___

6-您现在是否可以投入大约15分钟的时间来参与这项调查研究？ -

您将有机会赢取一张价值100美元的亚马逊礼品卡（共抽取三张）

是___ 否___

Please answer the following questions by placing a check next to the answer you choose, or write in the space provided.

请阅读以下问题，在您选择的答案旁边打勾，或者在提供的空白处写下您的答案。

SURVEY FOR PART I: BASIC DEMOGRAPHICS (BD-11)

第一部分：基本人口 (BD-11)

1) MY gender is: Female Male Other (Please explain _____)

1) 我的性别是： 女性 男性 其他 (请注明 _____)

2) MY age is: _____ (USE DROP DOWN MENU OF 18 to 85)

2) 我的年龄是：_____ (请使用下拉菜单：从18到85)

3) MY race/ethnicity is as follows: (Please mark all that apply)

Black/African American

White / Caucasian / European American

Hispanic / Latino (including Dominican, Puerto Rican, Mexican, Mexican American, Chicano, Cuban, other Spanish)

Asian (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, or other Asian)

American Indian / Alaska Native

Native Hawaiian / Pacific Islander

Arab American / Middle Eastern

Other group(s) (Please specify)

3) 我的种族/族裔如下:(请标记所有适用选项)

黑人 /非裔美国人

白人/高加索人/欧洲裔美国人

西班牙裔/拉丁裔 (包括多米尼加, 波多黎各, 墨西哥, 墨西哥裔美国人, 奇卡诺, 古巴, 其他西班牙裔)

亚洲裔 (亚洲印度, 中国, 菲律宾, 日本, 韩国, 越南或其他亚洲裔)

美洲印第安人/阿拉斯加原住民

夏威夷原住民/太平洋岛民

阿拉伯美国人/中东人

其他 (请注明)

4) Please indicate the country that you live in NOW:

[DROP DOWN MENU WITH COUNTRIES]

If you live in the US, what is your zip code_____ NA- I Do not live in US_____

4) 请告知您现在居住的国家：

[请使用国家/地区滚动菜单]

如果您住在美国，您的邮政编码是什么_____

不适用-我不住在美国_____

5) Please indicate the country of your birth:

[DROP DOWN MENU WITH COUNTRIES]

5) 请告知您的出生国家：

[请使用国家/地区滚动菜单]

6) Do you currently have a partner?

Yes No

6) 您现在有伴侣吗？

是 否

7). Are you a student? No Yes

7) 您现在是学生吗？ 不是 是的

8) Are you employed? No Yes Other (explain)

8) 您现在在工作吗？ 否 是 其他 (请注明)

9). MY yearly household income is:

1-Less than \$9,000

2-\$10,000 to \$19,000

3-\$20,000 to \$39,000

4-\$40,000 to \$49,000

5-\$50,000 to \$99,999

6-\$100,000 to \$199,999

7-\$200,000 to \$299,000

8-\$300,000 to \$399,000

- 9-\$400,000 to \$499,000
- 10-\$500,000 to \$799,000
- 11-\$800,000 or More

9) 我的家庭年收入是

(注：单位为美金，美金与人民币汇率每日浮动，近期平均汇率为1美金 = 6.8人民币左右)：

- 1- \$9,000
- 2-\$10,000 到 \$19,000
- 3-\$20,000 到 \$39,000
- 4-\$40,000 到\$49,000
- 5-\$50,000到 \$99,999
- 6-\$100,000到\$199,999
- 7-\$200,000到\$299,000
- 8-\$300,000到 \$399,000
- 9-\$400,000到\$499,000
- 10-\$500,000到\$799,000
- 11-\$800,000到More

10). MY highest education level is:

- Less than high school
- High school or high school equivalent (GED)
- Some college or a Certificate Program
- 2 year college degree (Associates)
- 4 year college degree (Bachelor' s)
- Masters degree
- J.D. - Lawyer
- Doctoral Degree (Ph.D., Ed.D, etc.).
- Medical Degree (M.D., D.D.S., etc.)

10) 我的最高教育水平是：

- 不到高中
- 高中或高中同等学历 (GED)
- 某些大学或证书课程
- 2年制大学学历 (大专)
- 4年大学学位 (学士学位)
- 硕士学位
- 法律博士 - 律师
- 博士学位 (Ph.D., Ed.D. 等) 。
- 医学学位 (M.D. , D.D.S. 等)

11) My type of medical insurance is (check all that apply)

- a) Private insurance plan (e.g. Blue Cross/Blue Shield, Aetna, Oxford, etc...)
- b) HMO c) Medicaid d) Medicare.. e) Other insurance plan (explain)____
- f) Not Applicable, I have no medical insurance

11) 我的医疗保险类型是 (请标记所有适用选项)

- a) 私人保险
- b) 城镇居民保险
- c) 新农合
- d) 职工医保
- e) 其他保险 (请注明) ____
- f) 不适用 , 我没有医疗保险

PART II: GAMING INITIATION, FREQUENCY & OTHER HISTORY AND GAMING BEHAVIOR (GIF-OHGB-9)

第二部分 : 游戏行为开始 , 游戏频率以及其他游戏历史和游戏行为 (GIF-OHGB-9)

1-At what age did you first begin to play video games, or begin internet gaming?

__Before age 6 __Between age 7 and 12 __Between age 13 and 17

After age 18 I do not recall

1 - 您刚开始玩电子游戏或开始网络游戏的年龄是多少？

- 6岁以前
- 7到12岁之间
- 13至17岁之间
- 18岁以后
- 我不记得了

2-How many hours per week do you play video games, or engage in internet gaming?

- Less than 7 hours
- Between 8 and 14 hours
- Between 15 and 20 hours
- Between 21 and 30 hours
- Between 31 and 40 hours
- More than 40 hours

2 - 您每周玩几个小时的电子游戏或是网络游戏？

- 不到7个小时
- 8到14个小时之间
- 15到20个小时之间
- 21 到 30 个小时之间
- 31 到 40 个小时之间
- 超过40个小时

3-Since you first started playing, have you ever played video games or engaged in internet gaming every day of the week, or daily?

- Yes No

3 -

自从您第一次开始玩游戏以来，您是否曾经在某一周的每一天都玩电子游戏或网络游戏？

是

否

4-On a single day, or in a 24 hour period, what is the most amount of time in hours that you ever played?

1-3 hours 4-6 hours 7-9 hours 10-13 hours 14-16 hours

17-19 hours 20-23 hours 24 hours

4 - 在一整天或24小时内，您最多玩过多少个小时的游戏？

1到3个小时之间

4到6个小时之间

7到9个小时之间

10到13个小时之间

14到16个小时之间

17到19个小时之间

20到23个小时之间

24个小时

5- Have you ever started seeing things in the virtual world from a game come into the real world? Yes No

5-您是否曾经开始在现实世界中看到游戏中的虚拟世界？

是

否

6-Do you own a mobile device with Internet access? Yes No

6 - 您是否拥有可上网的移动设备？

是

否

7-Do you own a game console or other dedicated gaming device? Yes

No

7 - 您是否拥有游戏机或其他专用游戏设备？

是

否

8- Check all the following that you have used for your gaming activities:

Nintendo Switch___ PlayStation 4___ Xbox One___ Desktop
Computer___ Laptop Combuter___ iPad___ Mobile Phone___
Virtual Reality___ Social Media Gaming (example: Facebook games)___
Other___(Please explain)

8. 请您勾选以下所有您的游戏活动：

任天堂 Switch (Nintendo Switch)

PS4 (PlayStation 4)

Xbox One

台式计算机

笔记本电脑

iPad

手机

VR虚拟现实

社交媒体游戏（例如：微信游戏）

其他___（请注明）

9-As an optional question, please list your top 3-5 favorite video games:_____

9-（可选问题）请列出您最喜欢的3-5个电子游戏：_____

PART III: CIGARETTE AND OTHER SUBSTANCE USE (COSU-3)**第三部分：香烟和其他药物滥用 (COSU-3)**

1- Have you used any of the following substances in the past 30 days?

(Check all that apply)

Cigarettes Yes No

E-cigarettes Yes No

Alcohol Yes No

Marijuana/oil Yes No

Heroin/Other Opioid Yes No

Cocaine Yes No

Other (explain) _____ Yes No

1-您在过去30天内使用过以下任何一种物质吗？（请勾选所有适用项）

香烟 是 否

电子烟 是 否

酒精 是 否

大麻/油 是 否

海洛因/其他鸦片类药物 是 否

可卡因 是 否

其他（请注明） _____ 是 否

IF YES→ # 2. IF NO→ SKIP TO PART IV-A

如果您在以上所有选项都选择“否”，请直接跳到第四部分A

2- Do you use any of the following substances more than 3 times a week?

(Check all that apply)

Cigarettes Yes at least 3 times a week No

E-cigarettes Yes at least 3 times a week No

Alcohol Yes at least 3 times a week No

Marijuana/oil Yes at least 3 times a week No
 Heroin/Other Opioid Yes at least 3 times a week No
 Cocaine Yes at least 3 times a week No
 Other (explain) _____ Yes at least 3 times a week No

2 - 您是否每周使用以下任何物质超过3次？（请勾选所有适用项）

香烟 是（每周至少三次） 否
 电子烟 是（每周至少三次） 否
 酒精 是（每周至少三次） 否
 大麻/油 是（每周至少三次） 否
 海洛因/其他鸦片类药物（每周至少三次） 是 否
 可卡因 是（每周至少三次） 否
 其他（请注明） _____ 是（每周至少三次） 否

3-Do you use any of the following substances daily? (Check all that apply)

Cigarettes Yes, daily No
 E-cigarettes Yes, daily No
 Alcohol Yes, daily No
 Marijuana/oil Yes, daily No
 Heroin/Other Opioid Yes, daily No
 Cocaine Yes, daily No
 Other (explain) _____ Yes, daily No

3 - 您是否每天使用以下任何物质？（检查所有适用）

香烟 是（每天使用） 否
 电子烟 是（每天使用） 否
 酒精 是（每天使用） 否
 大麻/油 是（每天使用） 否
 海洛因/其他鸦片类药物 是（每天使用） 否
 可卡因 是（每天使用） 否
 其他（请注明） _____ 是（每天使用） 否

2-Do you feel more irritability, anxiety or even sadness when you try to either reduce or stop your gaming activity?

*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
5_Strongly agree*

2-当您试图减少或停止您的游戏活动时，您是否感到更加烦躁，焦虑甚至悲伤？

1. 非常不赞成
2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

3-Do you feel the need to spend increasing amount of time engaged gaming in order to achieve satisfaction or pleasure?

*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
5_Strongly agree*

3 - 您是否觉得需要使用越来越多的时间打游戏才能获得满足感或愉悦感？

1. 非常不赞成
2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

4- Do you systematically fail when trying to control or cease your gaming activity?

*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
5_Strongly agree*

4-在您试图控制或停止游戏活动时，您是否总是失败？

1. 非常不赞成

2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

5- Have you lost interests in previous hobbies and other entertainment activities as a result of your engagement with the game?

*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
5_Strongly agree*

5- 您是否曾因为打游戏而对以前的爱好和其他娱乐活动失去兴趣？

1. 非常不赞成
2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

6- Have you continued your gaming activity despite knowing it was causing problems between you and other people?

*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
5_Strongly agree*

6.

您是否在即使知道游戏已经造成了您和其他人之间的问题时，仍旧继续打游戏？

1. 非常不赞成
2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

7- Have you deceived any of your family members, therapists or others

because of the amount of your gaming activity?

*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
5_Strongly agree*

7-您是否曾因为游戏活动的数量而欺骗过您的任何家庭成员，治疗师或其他人？

1. 非常不赞成
2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

8- Do you play in order to temporarily escape or relieve a negative mood (e.g., helplessness, guilt, anxiety)?

*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
5_Strongly agree*

8-您是否为了暂时逃避或缓解消极情绪（例如无助，内疚，焦虑）而打游戏？

1. 非常不赞成
2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

9- Have you jeopardized or lost an important relationship, job or an educational or career opportunity because of your gaming activity?

*1_Strongly disagree 2_Disagree 3_Neither agree or disagree 4_Agree
5_Strongly agree*

9-

您是否曾因为您的游戏活动而危及到或失去了重要的人际关系，工作或教育 / 就业机会？

1. 非常不赞成
2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

PART IV-B: ENGAGEMENT IN VIOLENCE SCALE (EIVS-1)

第四部分B：暴力行为量表（EIVS-1）

** 10 -

您是否曾因为您的游戏活动而产生过暴力行为，例如殴打、攻击或推搡某人（父母，兄弟姐妹，同伴或同事等），或摧毁过任何东西（破坏物品，砸碎东西）？

1. 非常不赞成
2. 不赞成
3. 不赞成也不反对
4. 赞成
5. 非常赞成

[注：这是一个新设计的、独立的暴力行为量表（EIVS-1），此项目不会被添加到是否符合DSM-5标准的评分中]

Supplemental Counseling Question # 11 (not part of DSM-5 criteria or score)

补充的关于咨询行为的问题项目 # 11（不属于DSM-5标准或评分）

* 11 -

由于您的游戏行为，您在过去一年中是否寻求过任何形式的咨询服务（例如向心理健康专业人士寻求咨询）？

否

是

不适用（我的游戏行为没有造成过上述任何问题）

PART V: RETROSPECTIVE DEPRESSION & ANXIETY (R-DA-4)

第五部分：回顾性抑郁和焦虑症 (R-DA-4)

Depression is an overwhelming feeling of intense sadness. It can include feeling helpless, hopeless, and worthless. It can sometimes be expressed through angry outbursts, as well as bursting into tears. There can also be loss of appetite, or an increase in appetite. There can also be difficulty sleeping, or oversleeping. In addition, there can be a loss of interest in your activities. Such a depression can last for days or weeks. This goes beyond typical feelings of sadness, such as following some disappointment.

抑郁症是一种压倒性的强烈悲伤感。它可能包括无助，无望和无价值的感觉。

它有时会表现为发脾气或者泪流满面。

抑郁症可能造成食欲不振或食欲增加，也可能造成失眠或者过度睡眠。另外，抑郁症会造成对活动失去兴趣。这种抑郁症状可持续数天或数周。

抑郁症状超出了普通的悲伤情绪，例如遇到了一些令人失望的事情之后的正常反应

。

1. 现在请您回想过去一年或12个月。

您认为您在过去一年或12个月内经历过任何抑郁症吗？

没有

有

2.

如果您在上述问题回答“有”，您是否寻求过任何形式的咨询服务（例如向心理健康专业人士寻求咨询）？

没有

有

不适用（即没有抑郁症的经历）

Anxiety is an overwhelming and intense feeling of nervousness, fear, tension, powerlessness, and apprehension. It can reach a peak so there are moments of panic where one's heart may be pounding/beating quickly, or there is rapid breathing/difficulty breathing. A person may also experience sweating and trembling. Sometimes it can be so intense that one has trouble concentrating/thinking, leaving the house, or trouble being around other people. The fear can be very intense and one can feel like there is some impending danger. This goes beyond typical feelings of nervousness, such as when anticipating a new situation, or something unexpected, or unknown.

焦虑症是一种压倒性的强烈的神经紧张，恐惧，不安，无力和忧虑的感觉。

当焦虑达到一个高峰的时候，会伴有阵阵的恐惧感，心跳过快，或呼吸急促/呼吸困难。一个人在经历焦虑的时候也可能会出现出汗和颤抖的症状。

当焦虑症状非常强烈时，人们可能会无法集中注意力或是思考，也可能会离开房子，或者感到无法与其他人共处一室。当恐惧感变得非常强烈时，人们可能会感觉到有一些危险正在逼近。焦虑症状超出了普通的紧张感，例如在预测新情况、意外情况或未知情况的时候的正常反应。

3-Now think back over the past year or 12 months. Do you think you experienced any **anxiety in the past year or 12 months?**

3. 现在请您回想过去一年或12个月。

您认为您在过去一年或12个月内经历过任何焦虑症吗？

没有

有

4.

如果您在上述问题回答“有”，您是否寻求过任何形式的咨询服务（例如向心理健康专业人士寻求咨询）？

没有

__有

__不适用（即没有焦虑症的经历）

PART VI: MEASURE OF MENTAL HEALTH SERVICES UTILIZATION (M-MHSU-3)

Following Lian (2017), this is derived from the above survey Part V. Taking from the above survey Part V, the M-MHSU-3 is based on items # 2 & 4—and from Part IV- item # 11. The 3rd item is different from what Lian (2017) used. These 3 items are summed to create a measure of mental health service utilization, as a continuous variable ranging from 0 to 3. (No=0, Yes = 1)

第六部分：心理健康服务使用情况衡量 (M-MHSU-3)

PART VII: GENERAL HELP-SEEKING QUESTIONNAIRE (GHSQ-2)

[Taken from: Wilson, C. J., Deane, F. P., Ciarrochi, J. V., & Rickwood, D. (2005). Measuring help seeking intentions: Properties of the General Help Seeking Questionnaire. *Canadian Journal of Counselling, 39* (1), 15-28.]

第七部分：综合求助问卷（GHSQ-2）

1.当您遇到个人问题或情绪问题，您有多大可能寻求下列人员的帮助？

请为以下每一个帮助源选择一个1-

7的数字，该数字能够最好的代表您向该帮助源 / 人员求助的意愿程度。

1 =非常不可能

3 =不太可能

5 =可能

7 =非常可能

1.亲密伴侣（例如，女朋友，男朋友，丈夫，妻子，正在交往的人）_____

- 2.朋友（没有血缘关系）_____
- 3.父母_____
- 4.其他亲属/家庭成员_____
- 5.心理健康专业人士（例如心理学家，社会工作者，咨询顾问）_____
- 6.电话热线（例如生命线）_____
- 7.医生/全科医生_____
- 8.牧师或宗教领袖（例如牧师，拉比，等）_____
- 9.我不会向任何人寻求帮助_____
- 10.我会寻求上面未列出的其他人的帮助（请在提供的空白处列出，例如工作同事。如果您没有，请在此处留白）_____

2.当您出现自杀念头时，您有多大可能寻求下列人员的帮助？

请为以下每一个帮助源选择一个1-

7的数字，该数字能够最好的代表您向该帮助源 / 人员求助的意愿程度。

1 =非常不可能

3 =不太可能

5 =可能

7 =非常可能

- 1.亲密伴侣（例如，女朋友，男朋友，丈夫，妻子，正在交往的人）_____
- 2.朋友（没有血缘关系）_____
- 3.父母_____
- 4.其他亲属/家庭成员_____
- 5.心理健康专业人士（例如心理学家，社会工作者，咨询顾问）_____
- 6.电话热线（例如生命线）_____
- 7.医生/全科医生_____
- 8.牧师或宗教领袖（例如牧师，拉比，等）_____
- 9.我不会向任何人寻求帮助_____
- 10.我会寻求上面未列出的其他人的帮助（请在提供的空白处列出，例如工作同事。如果您没有，请在此处留白）_____

PART VIII: PERCEIVED SOCIAL SUPPORT (PSSS-5)

Having SOCIAL SUPPORT means having family, friends, peers, room-mates, or neighbors that live near you and can provide assistance in all the ways listed, below. Please indicate the extent to which you experience SOCIAL SUPPORT in your life at this time (i.e., right now), specifically in the following ways:

第八部分：社会支持程度的自我感知（PSSS-5）

拥有社会支持意味着拥有住在您附近的家人，朋友，同伴，室友或邻居，他们可以通过以下列出的所有方式向您提供帮助。

请说明您目前（即现在）在生活中拥有社会支持的程度，具体方式如下：

1. I could ask for advice if I needed it, and could get it pretty quickly without waiting

1. I have no one like this in my life right now

2. I have at least 1 one person like this in my life right now

3. I have at least 2 people like this in my life right now

4. I have 3-5 people like this in my life right now

5. I have 6 or more people like this in my life right now

1.

如果我需要，我可以征求他 / 她 / 他们 / 她们的意见，并且可以快速得到意见，无需等待。

1. 我现在的的生活里没有这样的人

2. 我现在生活中至少有一个这样的人

3. 我现在生活中至少有2个这样的人

4. 我现在的生活中有3-5个这样的人

5. 我现在的生活中有6个或更多这样的人

2. I could go to them in an emergency for help (e.g. such as a place to wait/stay if I was locked out of my housing/dormitory room/apartment)

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

2.

我可以在遇到紧急情况时向**他 / 她 / 他们 / 她们**寻求帮助 (例如：**他 / 她 / 他们 / 她们**会给我提供一个暂时逗留 / 休息的地方，如果我被锁在我的房子 / 宿舍 / 公寓外面了)。

1. **我现在的的生活里没有这样的人**
2. **我现在生活中至少有一个这样的人**
3. **我现在生活中至少有2个这样的人**
4. **我现在的生活中有3-5个这样的人**
5. **我现在的生活中有6个或更多这样的人**

3. I could borrow money from them if my wallet/purse was stolen and I needed money (e.g. for transportation to take a bus, subway, to get to school or back to where you live)

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

3.

假如我的钱包 / 手提包失窃了，而我又需要钱，我可以向**他 / 她 / 他们 / 她们**借钱 (例如：**往返学校和住所之间所乘坐的公交车 / 地铁的交通费用**)。

1. **我现在的的生活里没有这样的人**
2. **我现在生活中至少有一个这样的人**

3. 我**现在**生活中至少有2个这样的人
4. 我**现在**的生活中有3-5个这样的人
5. 我**现在**的生活中有6个或更多这样的人

4. I could get food from them if I was hungry and had no food because of some emergency in my life

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

4.

假如我遇到了紧急情况，没有食物，**他 / 她 / 他们 / 她们**会在我饥饿的时候给我提供食物。

1. 我**现在**的生活里没有这样的人
2. 我**现在**生活中至少有一个这样的人
3. 我**现在**生活中至少有2个这样的人
4. 我**现在**的生活中有3-5个这样的人
5. 我**现在**的生活中有6个或更多这样的人

5. I could receive encouraging words from them, if I was struggling with something

1. I have no one like this in my life right now
2. I have at least 1 one person like this in my life right now
3. I have at least 2 people like this in my life right now
4. I have 3-5 people like this in my life right now
5. I have 6 or more people like this in my life right now

5. 当我处于困境的时候，**他 / 她 / 他们 / 她们**会给我说鼓励的话。

1. 我**现在**的生活里没有这样的人
2. 我**现在**生活中至少有一个这样的人

3. 我现在生活中至少有2个这样的人
4. 我现在的生活中有3-5个这样的人
5. 我现在的生活中有6个或更多这样的人

PART IX: RATING OF OFF-LINE SOCIAL SUPPORT (R-OFFLINE-SS-2)

第九部分：线下(即现实世界中)社会支持程度评估

1-Please rate the quality of the social support that you receive from people when you are **off-line, not on the Internet, and not involved in gaming activities**:

_1-very poor _2-poor _3-fair _4-good _5-very good _6-excellent
 __Not applicable – I receive no social support from people off-line.

1.

请评估您在线下（即现实世界中，并非在网络上或者在游戏行为中），从别人那里获得的社会支持的质量。

_1-非常差_2-差_3-一般_4-好_5-非常好_6-优秀
 __不适用 - 我在线下没有从别人那里获得社会支持

2-How important in your life is the **off-line social support** that you receive from other people?

_1-extremely unimportant
 _2-very unimportant
 _3-somewhat unimportant
 _4-somewhat important
 _5-very important
 _6-extremely important
 __Not applicable – I receive no social support from people offline

2. 您在线下从别人那里获得的社会支持，对您的生活有多重要？

_1- 极其不重要

_2-非常不重要

_3-有点不重要

_4-有点重要

_5-非常重要

_6-极其重要

__不适用 - 我在线下没有从别人那里获得社会支持

第十部分：线上社会支持程度评估 (R-ONLINE-SS-2)

1-Please rate the social support that you receive people when you are **online, on the Internet, and involved in gaming activities:**

_1-very poor _2-poor _3-fair _4-good _5-very good _6-excellent

__Not applicable – I receive no social support from people online

1.

请评估您在线上（即在网络上和游戏行为中），从别人那里获得的社会支持的质量

。

_1-非常差_2-差_3-一般_4-好_5-非常好_6-优秀

__不适用 - 我在网络上没有从别人那里获得社会支持

2-How important in your life is the **online social support** that you receive from other people (who are alive, human beings)

_1-extremely unimportant

_2-very unimportant

_3-somewhat unimportant

_4-somewhat important

_5-very important

_6-extremely important

_Not applicable – I receive no social support from people online

2.

您在网络上从别人那里获得的社会支持，对您的生活有多重要？（注：这里指的是网络上真实的人）

_1- 极其不重要

_2-非常不重要

_3-有点不重要

_4-有点重要

_5-非常重要

_6-极其重要

_不适用 - 我在网络上没有从别人那里获得社会支持

PART XI-SINGLE ITEM RATING OF RISK OF PROVIDING SOCIALLY DESIRABLE RESPONSES

第十一部分 -单项目评估：提供社会期许性反应的风险

1-I sometimes say things that I think will please people, or what I think they want to hear—versus the honest truth, which might be difficult or painful for other people to hear and accept, or might lead them to judge me harshly...

0 1 2 3 4 5 6 7 8 9 10

0-I am not like

10-I

am like

this at all

this all the

time

1-

我有时会说一些我认为会让人感到满意的事情，或者是一些我认为他们想要听到的事情 --

而不是真实的事实，因为我觉得这些事实可能会使听到的人感到难受、痛苦、以及难以接受，这些事实也可能会使他们严厉地评判我.....

0 1 2 3 4 5 6 7 8 9 10

0-我完全不是这样的人

10-

我一直都是这样的人

PART XII: OPEN-ENDED QUESTION ON PLAYING INTERNET VIDEO GAMES (OPTIONAL QUESTION) (OEQ-PIVG-1)

1-As an optional question, is there anything you would like to share about your experience playing video games on the Internet, including any thoughts or feelings you experienced in response to taking this survey?

-----调查研究结束 - 谢谢！-----

Appendix H

Internal Consistency of Study Scales

Table. Internal Consistency of Study Scales

Scale	# of items	Cronbach Alpha
Internet Gaming Disorder Scale	9	.835
ES	9	.844
CMS	9	.837
Personal/Emotional Support Scale	9	.660
ES	9	.680
CMS	9	.637
Suicide Support Scale	9	.841
ES	9	.829
CMS	9	.852
Perceived Social Support Scale	5	.907
ES	5	.930
CMS	5	.898
Off-line Social Support Scale	2	.670
ES	2	.564
CMS	2	.753
On-line Social Support Scale	2	.760
ES	2	.752
CMS	2	.768

NOTE: Values that are approximately .9 and above suggest excellent internal consistency, those in the .8 range are good to very good for internal consistency, those in the .7 range are fair, and those in the .6 range are poor—with those in the .5 range being very poor. It can be argued that in the scales with fair to very poor Cronbach's Alpha that the measure was not appropriate, as the items in the scales do not need to be related to each other.