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Jeffrey Michael Parsons
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AN EXAMINATION OF MASSIVELY MULTIPLAYER ONLINE ROLE-PLAYING

GAMES AS A FACILITATOR OF INTERNET ADDICTION

by

Jeffrey Michael Parsons

An Abstract

Of a thesis submitted in partial fulfillment of the requirements for the Doctor of
Philosophy degree in Education in the Graduate College of
The University of Iowa

July 2005

Thesis Supervisor: Professor Nicholas Colangelo

ABSTRACT

Researchers have indicated that Internet addiction is a wide-spread problem, impacting the lives of an estimated 4-10% of all Internet users. Researchers have also indicated that Internet addiction has a social component, with Internet addicts using the Internet to build and maintain new social relationships at a much higher rate than non-addicts. This study explored Internet addiction in the context of Massively Multiplayer Online Role-Playing Games (MMORPGs). Data were drawn from MMORPG players and from mental health counselors to determine incidence rates of Internet addiction among MMORPG players, social needs that were predictive of Internet addiction, rates of treatment seeking behaviors by MMORPG players for Internet addiction, and how Internet addiction is diagnosed and treated by mental health counselors.

For this study, the MMORPG Player Survey and the Counselor Survey were used to collect data from MMORPG players and mental health counselors. The MMORPG Player Survey was administered to 513 MMORPG players. The Counselor Survey was administered to 80 mental health counselors.

Results from the MMORPG Player Survey indicated that approximately 15% (n=78) of MMORPG players met criteria for Internet addiction, as defined by the Diagnostic Questionnaire (DQ). A stepwise regression analysis of loneliness, online confidence, online liberation, validation, and support found that loneliness and online confidence were both positively predictive of Internet addiction among participants. Of MMORPG players surveyed, less than 1% (n=3) indicated that they have sought professional help for Internet addiction. Mental health counselors reported that Internet addiction was most likely to be diagnosed as depression, obsessive-compulsive disorder,

or impulse control disorder. Furthermore, mental health counselors reported that they were most likely to treat Internet addiction using one of the following theoretical orientations: cognitive, reality, family systems, or solution focused.

These findings highlight a subpopulation of the online community who are in need of mental health services and are not receiving them. Recommendations for future research include qualitative studies exploring the social aspects of MMORPG gaming among Internet addicts, as well as research exploring potential deterrents to mental health services among this population.

Abstract Approved: _____
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Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

Jeffrey Michael Parsons

has been approved by the Examining Committee for the
thesis requirement for the Doctor of Philosophy degree in
Education at the July 2005 graduation.

Thesis Committee: _____
                    Nicholas Colangelo: Thesis Supervisor

                    _____
                    Amy Milsom

                    _____
                    John Wadsworth

                    _____
                    Julie Andsager

                    _____
                    Tarrell Portman

To Lisa, Caleb, Michael-James, Andrew, Miriam, and Nathan

They are playing a game they are playing at not playing a game, if I show them that I see they are, I shall break the rules and they will punish me. Therefore I must play the game of not seeing that I see the game.

R.D. Laing, KNOTS

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CHAPTER I

INTRODUCTION

Advances in Internet technologies have resulted in an unprecedented level of accessibility to information, products, services, communication, and entertainment. The opportunities offered by the Internet are accompanied by unique psychosocial phenomena, many of which challenge the counseling profession. These phenomena are unique in the sense that they are relatively new to the lives of clients, leaving clinicians with a limited base of experience from which to draw when dealing with these issues.

One psychosocial concern that arises with the advent of the Internet is problematic Internet use (Young, 1996). Problematic Internet use can occur in a variety of settings, impacting the social, vocational, and academic functioning of affected Internet users (Beard, 2002; Browne, 2002; Griffiths, 2000; Hansen, 2002). Problematic Internet use is characterized by a core set of attributes, including a pre-occupation with Internet use, mood modification, need for increasing amounts of Internet use, withdrawal, conflict, and relapse (Griffiths, 1998). The effects of problematic Internet use are varied but often include loss of sleep, strained relationships, and reduced levels of productivity in vocational and academic settings. These effects are associated with not only the amount of Internet use, but the prioritization of Internet use over other life commitments (Griffiths, 2000; Kandell, 1998; Morahan-Martin & Schumacher, 2000; Young & Case, 2004).

Research indicates that some forms of problematic Internet use may be driven by a desire for social interaction and an increased level of social visibility (Amichai-

Hamburger, Wainapel, & Fox, 2002; Weiser, 2001). Unlike face-to-face social interactions, the Internet allows for unparalleled anonymity and control when communicating with others (Kandell, 1998). These factors allow individuals to engage in social relationships that carry minimal risk, while allowing them to adopt roles or characteristics that may not be representative of their face-to-face relationships (Amichai-Hamburger et al., 2002; Peris et al., 2002; Sanders, Field, Diego, & Kaplan, 2000; Scealy, Phillips, & Stevenson, 2002).

Massively multiplayer online role-playing games, commonly referred to as MMORPGs, provide a unique platform for developing social interactions on the Internet. MMORPGs allow for simultaneous text-based and graphical communication with others and provide well defined structures that encourage a variety of social interactions. While some forms of Internet use encourage two-way communication, MMORPGs often require high levels of social interaction and facilitate the adoption of new personas and styles of interaction. There is limited research on the relationship between MMORPGs and problematic Internet use (Griffiths , Davies, & Chappell, 2003). However, certain characteristics of MMORPGs and their users indicate that this form of Internet use may be a powerful facilitator and enabler of problematic Internet use.

This study will expand the counseling profession's understanding of problematic Internet use by examining the role of MMORPGs as facilitators of problematic Internet use. Specifically, this study will explore incidence rates of problematic Internet use among MMORPG players, social predictors of problematic Internet use, and the rate at which gamers seek treatment for the condition of problematic Internet use. Problematic

Internet use will be contextualized in terms of counselor diagnostic and treatment attitudes toward the phenomena. This study will also extend the counseling profession's understanding of problematic Internet use by broadening research beyond traditional college populations to a broader range of MMORPG users.

<div align="center">Problematic Internet Use as Internet "Addiction"</div>

Theorists have struggled to clearly define the phenomena of problematic Internet use. The most accepted conceptualization of problematic Internet use is that of Internet addiction (Griffiths, 1998). While some theorists are critical of defining problematic Internet use as an addiction (Griffiths, 1998; Grohol, 1995), the concept of non-chemical behavioral addictions is gaining increasing support among mental health professionals (Marks, 1990). Examples of this acceptance are found in the common use of terms such as "eating addiction," "sexual addiction," and "gambling addiction" within the counseling profession, as well as increasing references to Internet addiction as a legitimate phenomenon (Kennedy, 2005; Marks, 1990).

The increasing acceptance for behavior addictions is manifest in research literature that examines problematic Internet use. Almost without exception, literature regarding problematic Internet use frames the phenomena in terms of Internet addiction (Brenner, 1997; Griffiths, 2000; Morahan-Martin & Schumacher, 2000; Pratarelli & Browne, 2002; Young, 1996). As a profession, it appears that counselors have defined a common, if unofficial, language for talking about Internet use that interferes with the lives of clients.

In order to accommodate the common language of the counseling profession and work within the confines of the professional literature, this study will address problematic Internet behaviors in terms of Internet addiction. This use does not preclude the possibility that there are alternative descriptions of problematic Internet behaviors, nor does it imply a belief in any chemical basis for the addictive behavior.

The two primary models for conceptualizing Internet addiction are Pathological Internet Use (PIU) and Internet Addiction Disorder (IAD) (Goldberg, 1996; Young, 1996). Pathological Internet Use conceptualizes Internet addiction using adapted criteria for pathological gambling. Under this model, individuals suffer from PIU if they meet five of eight designated criteria (Young, 1996). Similarly, Internet Addiction Disorder conceptualizes Internet addiction using adapted criteria for substance dependence. While the diagnosis for IAD was originally offered as a joke, others have expanded IAD's original premise, introducing scales for assessing IAD (Brenner, 1997; Goldberg, 1996; Griffiths, 2000).

PIU and IAD share common characteristics, including the inability to reduce amounts of Internet use, disruptions in daily living (e.g., work, family, school), and dependence on Internet use to maintain psychological well-being (Griffiths, 1998). In addition, Internet addicts often suffer from reduced social interactions with friends, family, and co-workers (Kraut et al., 1998; Kubey, Lavin, & Barrows, 2001; Weiser, 2001). While competing conceptualizations and conflicting diagnoses frustrate attempts to formally recognize Internet addiction as a disorder, there is general consensus that excessive Internet use is interfering in the daily functioning of a significant subset of

populations worldwide (Chou, 2001; Griffiths, 2000; Grohol, 1995; Lin & Tsai, 1999; Oravec, 2000).

There is consistent evidence of addictive behaviors among Internet users. While early studies of Internet addiction found incidence rates as high as 80% (Brenner, 1997; Young, 1996), these studies may have limited generalizability as a result of sampling bias (Griffiths, 2000; Grohol, 1995; Hall & Parsons, 2001). In recent studies of Internet addiction among college students, researchers have established a 4-10% incident rate of Internet addiction, with conservative estimates using both the criteria for PIU and IAD establishing a 6% rate of addiction (Anderson, 1999; Chou, 2001; Lin & Tsai, 1999, 2000; Wang, 2001). These lower rates of Internet addiction are supported in non-college populations, with one researcher determining that approximately 6% (n=17,251) of participants in a national study met the criteria for Internet addiction (Greenfield, 1999). With over 600 million Internet users worldwide, this equates to as many as 36 million Internet addicts using conservative estimates (NUA, 2002).These findings suggest that excessive use of the Internet is problematic and worthy of the attention of counselors.

Internet addiction has potentially devastating implications for not only the addicts themselves, but also for their families, employers, and other social relations. Like other forms of addiction, Internet addiction consumes the time and energy of the addict, destroying interpersonal relationships and limiting the academic, vocational, and social potential of those afflicted (Eppright, Allwood, Stern, & Theiss, 1999; Kandell, 1998). In addition, Internet addiction provides a false sense of accomplishment and connection,

substituting rich and meaningful face-to-face relationships with virtual relationships that may stunt the social development of the addict (Kraut et al., 1998; Kubey et al., 2001).

As discussed earlier, one of the defining characteristics found among Internet addicts is a desire for excessive amounts of synchronous communication. Unlike typical Internet users, who maintain existing relationships using the Internet (e.g., emailing family, chatting with friends, etc.), Internet addicts use synchronous Internet media to establish and maintain new relationships. These new relationships often take precedence over existing face-to-face relationships, resulting in conflict in the individual's life outside of the Internet (Griffiths, 2000; Kandell, 1998; Kubey et al., 2001; Seepersad, 2004; Weiser, 2001). Synchronous communication is achieved using numerous Internet technologies including chat rooms, instant messaging, and online gaming (Kubey et al., 2001). This relational orientation among Internet addicts defies traditional stereotypes of technology addicts as loners and social isolates. Rather, it appears that Internet addicts are individuals who are using the Internet to meet social needs (Brenner, 1997; Kubey et al., 2001; Scealy et al., 2002; Shotton, 1991; Young, 1996).

<u>Need for Additional Study</u>

Massive Multiplayer Online Role-Playing Games (MMORPGs) offer a distinctive opportunity for the study of Internet addiction. First, like chat rooms and instant messaging systems, MMORPGs offer the ability to create and maintain new relationships while maintaining an element of anonymity. Online role-playing games take these elements a step further by requiring the generation of a new online personae (called an "avatar" or "character") and providing an environment and tools that encourage active,

on-going socialization (Gamespy, 2003). These aspects of the gaming experience are reinforced by offering the possibility of growth, achievement, and social prestige within the online context in ways that are unique to MMORPGs (Griffiths et al., 2003; Yee, 2001b).

Second, participants in MMORPGs are online significantly greater amounts of time than non-MMORPG Internet users. While the average Internet user spends approximately four hours a week online (*How americans are expanding their use of the internet*, 2002; Nie & Erbring, 2000), the average participant in an MMORPG spends 20 or more hours a week playing online, above and beyond time spent on other activities such as email, web browsing, and shopping (Griffiths et al., 2003; Origin, 2003; Yee, 2001b). Researchers generally agree that Internet use becomes problematic when it exceeds 20 hours per week, placing the vast majority of MMORPG participants in an at-risk category for Internet addiction (Brenner, 1997; Chou, 2001; Chou, Chou, & Tyan, 1998; Lin & Tsai, 2000). The issue of addictive game play is further complicated by that fact that, unlike most other Internet services, MMORPGs are designed to encourage addictive behavior (Jen, Lee, Liu, & Manus, 2002; Staehlin, Schubert, McShaffry, & Meunier, 2003).

Third, MMORPGs are an increasingly popular form of entertainment, impacting growing numbers of individuals. In 2000, the MMORPG industry reported that approximately 300,000 individuals participated in MMORPGs. By the end of 2003, this number exceeded 3,000,000 (Woodcock, 2003). Further support for the growth of MMORPGs is evidenced in the number of MMORPGs currently available and under

development, and the numbers of players engaging in this form of entertainment. For example, in late 2004, Blizzard launched a new MMORPG, World of Warcraft. Within six months of shipping this product, over 1,500,000 players had subscribed to the service worldwide (*World of Warcraft Sets New Milestone With 1.5 Million Subscribers Worldwide*, 2005).

Fourth, excessive MMORPG use, as a form of Internet addiction, is growing in prevalence among clients seeking counseling. While no detailed studies are available on exact incidence rates, anecdotal reports indicate that this is an increasing issue among therapists in numerous settings (Griffiths et al., 2003; Oravec, 2000; Whiteley, 1999). Popular media and news have also reported difficulties with addictive behavior in MMORPG users, relating incidents of child neglect, suicide, and failing marriages as a result of excessive MMORPG involvement (Becker, 2002; Bersten, 2002; Patrizio, 2003). Further research is needed to determine the extent to which these anecdotal reports are representative of counselor experiences working with clients.

Finally, the growing body of literature on Internet addiction is largely focused on conceptualizing Internet addiction and defining the impact that it has on addicts. There is a lack of substantive research on counselor attitudes and practices in response to Internet addiction, MMORPG-based or otherwise. Given the relatively new phenomenon of Internet addiction, a greater exploration of how counselors view this phenomena is warranted (Chou, 2001; Griffiths, 2000; Griffiths et al., 2003; Hall & Parsons, 2001).

In sum, MMORPGs represent a unique form of Internet use that lends itself toward addictive online behaviors. While the impact of these addictive patterns are

beginning to be seen in counseling settings, there is a limited body of literature defining the addictive experience, its incidence rates, or counselor attitudes toward this phenomena in clients. Given the noteworthy growth of this area of Internet use, MMORPGs warrant a serious investigation of the phenomena of Internet addiction.

<u>Purpose</u>

The purpose of this study was to examine MMORPGs as facilitators of Internet addiction. This study sought to answer the following questions:

1. What is the incidence rate of Internet addiction among MMORPG players?

2. Which of the following social needs predict Internet addiction among MMORPG players: loneliness, support, validation, confidence, and liberation?

3. To what degree are players of MMORPGs seeking treatment for Internet addiction?

4. How are counselors diagnosing Internet addiction?

5. What theoretical approaches are counselors using to treat Internet addiction?

<u>What are MMORPGs?</u>

This section provides an overview of the history, characteristics, and language of MMORPGs. This background is necessary in order to fully understand the context of the addictive behavior.

History

MMORPGs find their origins in the late 1970's and were originally referred to as Multi-User Dungeons, or MUDs. The first MUD was developed by Roy Trubshaw and Richard Bartle during their studies at the University of Essex. Titled "MUD," their game was text-based, and operated on a mainframe computer. Players connected to the game using dumb terminals ("computers" that consist of a keyboard and monitor that lack storage and processing capabilities and are directly linked to a computer server). The title for this early venture into multiplayer gaming was later generalized as a reference to all text-based multi-user games. Establishing a pattern for the majority of future MUDs and MMORPGs, Trubshaw and Bartle's game was fantasy based, and allowed users to create an online persona, explore a virtual dungeon, kill creatures, gain experience and abilities, group with or against others, and gather loot (Gamespy, 2003).

The number of MUDs has expanded over the past two decades. Approximately 1,670 MUDs are available online today (Gamespy, 2003). The modern MUD bears many similarities to Trubshaw and Bartle's early work. Modern MUDs are text-based, typically contain a fantasy theme, use a mainframe/terminal architecture, and are free of charge (Gamespy, 2003).

As computer and Internet capabilities increased, software developers gained the ability to extend the features of MUDs, eventually creating the possibility of profitable online gaming systems. In 1996, 3DO Games shipped the first commercially viable MMORPG, dubbed Meridian 59, to stores across the United States. Unlike MUDs, which do not require special software to operate, Meridian 59 operated on a client/server

architecture that required users to purchase game software to install on their personal computers. Then, for a monthly fee of $9.99, users could connect to the Merdian 59 servers, and play in the game's interactive online world. Meridian 59 was graphics-based and could support up to 250 players on one server. Players interacted in a "2.5D" environment that simulated a first person view but used two-dimensional graphics. While Meridian 59 is no longer a mainstream product, it remains commercially available today (*Meridian 59 frequently asked questions*, 2004).

In the fall of 1997, Origin Studios released Ultima Online, the game that ultimately popularized MMORPGs. Like Meridian 59, Ultima Online used a client/server model, had a graphical interface, and charged a monthly fee. However, Ultimate Online was established from an existing franchise and was an immediate commercial success, with a user base that quickly exceeded 200,000 players. Using a top-down view, Ultima Online allows users to create unique characters, own homes, explore, gain abilities and items, and form "guilds" or online player associations. While Ultima Online is considered outdated by today's standards, the game remains popular and has maintained a membership of approximately 200,000 players (Gamespy, 2003).

Modern MMORPGs operate using true three-dimensional graphics. Popular titles include Everquest, Dark Age of Camelot, Ultima Online, Star Wars Galaxies, Final Fantasy XI, and World of Warcraft. Despite advances in technology and wide-spread growth among Internet users, all MMORPGs build upon a common set of characteristics, allowing players to transition from one game to another with an understanding of fundamental game mechanics, purpose, and function (*MMORPG*, 2004).

Common Characteristics

A wide range of genres are represented in MMORPGs, including fantasy, science fiction, historical, and authentic war settings. Several key underlying technologies and characteristics are shared by these products. Most of the characteristics of MMORPGs stem from their roots in the MUDs of the 1980s and 1990s, though the technology is significantly advanced.

Client/Server Architecture

The creation and maintenance of virtual online worlds require a significant investment in equipment. All MMORPGs provide game content on one or more servers. The technical requirements of modern MMORPGs typically involve multiple highly customized computers (called clusters) to support one gaming "world" or server. Most titles support multiple gaming servers, allowing users to create "characters" or avatars on one or more of these servers. While commercial companies provide the servers on which game content is located, users must purchase client software that resides on their personal computers. This software provides the interface that allows connectivity to the game servers and interaction with other players. While there is some variation among games, the typical MMORPG can support between 2,000 and 4,000 simultaneous users per game server, with larger titles often hosting dozens of game servers from which players can choose. Servers are frequently tied to geographic location. This localization process allows North American, European, and Asian populations to participate on servers with others who share the same general time zone.

Monthly Fee

Unlike MUDs, which are traditionally free of charge, MMORPGs have an initial cost to purchase the game's client software and an additional monthly fee to maintain an account. These recurring costs range from $9.99 for older titles such as Ultima Online to $14.99 for newer titles such as Star Wars Galaxies and World of Warcraft. Some companies, such as Sony (2004), offer package deals wherein players can pay a higher single rate and access multiple MMORPG titles offered by the same company.

Avatars

All MMORPGs require users to create at least one game avatar (commonly referred to as a "character"). The game avatar is a graphical representation of the being the user desires to play in the gaming world. Avatars are controlled by users through a combination of mouse and keyboard commands, and can navigate the virtual world provided by the game. As technology advances, users have increasing flexibility in determining the appearance of their avatars. At a minimum, most MMORPGs allow for selection of race, gender, and general features such as skin tone, height, and weight. Some newer MMORPGs allow for detailed control of facial features and body composition to the degree that users can often visually recreate themselves online (Gamespy, 2003).

Character Development

MMORPGs provide either skill or class based means for advancing one's avatar. In a skill-based system, the avatar gains abilities by performing tasks. For example, to advance in a hunting skill, one "hunts" through mechanics provided within the game. To

gain skills in combat an avatar engages in combat against computer generated opponents (often referred to as "mobs" or "npcs") or other players. Skill-based systems allow avatars to mix and match skills that suit their interests. These skills usually have some predefined limit to prevent avatars from becoming too powerful in relation to the gaming environment.

The alternative to a skill-based system is a class-based system. Class-based systems allow avatars to choose a profession such as warrior, sorcerer, mechanic, pilot, spy, or other role, depending on the genre. Each class has levels that require increasing numbers of "experience points" to achieve. At each level, the avatar gains additional abilities that are associated with that class. In most class-based MMORPGs, levels of skill are gained by combating creatures in the gaming world. A "level 1" character might require an hour or so of combat in order to gain "level 2." However, upper levels in class-based games typically require dozens, or even hundreds, of hours to achieve (Lynn, 2001).

Material Advancement

While avatars have the ability to increase their skills within the gaming world, they also have the ability to amass wealth and powerful items to further enhance their personas. Most MMORPGs provide some form of monetary system, as well as items that can be owned. These items may include armor, weapons, mounts, vehicles, homes, furniture, and any number of other artifacts that either enhance the player's abilities or increase their prestige among other players. Wealth is typically obtained by killing

computer opponents and removing valuables from them, or by crafting and selling

valuables to other players.

<u>Social Systems</u>

MMORPG developers provide players with increasingly sophisticated arrays of

tools for interacting socially. Common MMORPG communication/social tools include:

Spatial Communication: Spatial communication is achieved by typing text that is

directly observable by other players within a limited vicinity. Spatial communication is

intended to simulate speech, and often contains "shout" or "whisper" modes to further

increase the immersive process.

Chat Channels: Chat channels allow for communication across distances within a

game server (or in some cases, across game servers). Players can send each other

messages, or communicate on channels with groups of players who have banded together.

This allows players to find friends or associates and arrange group activities.

Email: Email allows players to leave one another messages that can be read once

the recipient logs back into the server. Some MMORPGs allow players to mail items to

one another as well.

Emotes: Emotes allow players to express non-verbal behaviors and emotions with

other players. Some emotes display strictly text-based imagery, while other emotes may

invoke visual changes in the player avatar to simulate some experience. For example, the

text command "/shrug" may initiate the text "Fred shrugs his head dejectedly" while

invoking a visible shrug from the player's avatar.

Weddings: As MMORPGs progressed and matured, some players participated in simulated online weddings between characters. Over time this ritual has evolved to the degree that some MMORPGs have institutionalized weddings as a game mechanic that is available for interested players.

Guilds: Guilds are formal alliances between players who share a common cause. Joining a guild is voluntary, and usually results in the guild name appearing above the player's avatar for easy identification. It is common for MMORPGs to provide guild specific chat channels to facilitate communication between guild members.

<div align="center">Vocabulary</div>

MMORPG's have a distinct vocabulary. This vocabulary includes general terms that apply across games, as well as game specific language used to describe unique elements found only in one setting. The following list of terms is not all-inclusive, but provides insight into some of the terminology common to MMORPG gaming (Kronocide, 2004).

AFK – An abbreviation commonly used to indicate that a player will be away from the keyboard.

AGGRO – A reference to any non-player character or creature that may be hostile to players.

ALT – A term used to refer to a secondary avatar. For example, if John has an avatar named "Fred," his ALT might be a second character called "Todd."

BRB – Abbreviation for "Be right Back."

Buff – A term for any temporary skill or power boost a character might receive in the game.

Camper – A derogatory term for individuals that stay in one spot in order to control a specific spawn (See below).

Class – A term referencing the skill set of a character. For example "What class are you? I'm a warrior."

CON – An abbreviation referring to the danger level of a computer controlled opponent. Many MMORPGs allow players tools to evaluate how hard a potential opponent might be. CONs are typically color codes indicating opponent difficulty. If an entity "cons red" it is likely too difficult for the character to fight.

DING – A term used to let others know when a player has received enough experience points to gain a new level or ability.

Grinding – A derogatory term describing the process of performing an action repeatedly over an extended amount of time for the purpose of gaining a level or item.

Healer – A term for any character that can heal the wounds of another character.

LFG – An abbreviation for "Looking for a Group," indicating that a player wants to join others for hunting or other activities.

Nerf – A derogatory term referring to changes that game developers make to an MMORPG that diminishes some ability of a class within the game. "Nerfs" are typically done to correct some game imbalance that gives unfair advantage to a select group of players.

OOC – An abbreviation used by role players who wish to talk about something not related to the game.

Pull – References a tactic used to draw one computer controlled creature from a pack, so that the creatures can be fought one by one, instead of as a group.

Root – Reference to a spell or ability that holds a creature in place.

Spawn – Reference to a computer controlled creature or group of creatures that reappears in a set location repeatedly after being "killed." There is typically an interval of several minutes or hours between reappearances.

WB – An abbreviation for welcome back.

WTB – An abbreviation indicating the desire to buy an item from another player. Typically used in locations where many players are selling items.

<u>Summary</u>

Internet addiction is a growing phenomenon which is new to the experience of counselors. Given the tendencies of Internet addicts to engage in online synchronous communication, MMORPGs offer a unique setting for the examination of Internet addiction. MMORPGs require synchronous communication and provide a variety of tools for building and maintaining relationships with others. In addition, the high growth rate and high use of MMORPGs indicate that a significant population of Internet addicts may be using this medium. This study will seek to answer fundamental questions about the addictive experience of MMORPG players, from the experience of both MMORPG players and from the counselors who treat them.

CHAPTER II

LITERATURE REVIEW

This chapter reviews literature relevant to Internet use, Internet addiction, and MMORPG addiction.

Internet Use

Internet use in the United States increased from 22% of the general populace in 1998 to 75% in 2004 (NetRatings, 2004). Similar patterns of growth exist in European and Asian nations (*How americans are expanding their use of the internet*, 2002; *The World Factbook*, 2003). This growth is the result of decreasing costs for Internet technologies, increasing integration of Internet technologies into basic public services, and reductions in the technical knowledge required to access Internet services (*How americans are expanding their use of the internet*, 2002; Nie & Erbring, 2000).

The average Internet user spends approximately four hours per week online. However, elevated levels of use are noted in high school and college populations, who average ten hours per week online (Anderson, 1999; Chin-Chung, 2001; Chou, 2001; Morahan-Martin & Schumacher, 2000). A Stanford study of 4,000 Internet users found that extended exposure to Internet technologies and the use of faster Internet access positively correlate with increases in Internet use (Nie & Erbring, 2000). This trend is confirmed by data from the U.S. Census Bureau (2002), providing an indication that Internet use is likely to continue to increase over time across all populations.

Education and age are the only significant demographic predictors of Internet access, with younger, wealthier individuals having the highest level of access (*How*

americans are expanding their use of the internet, 2002). In research where Internet

services were provided to participants, no notable differences were detected in amounts

of Internet use based on age, education, or ethnicity (Kraut et al., 1998; Nie & Erbring,

2000). Currently the fastest growing segments of Internet users are older adults and those

of lower socio-economic standing (*How americans are expanding their use of the*

internet, 2002).

<p align="center">Internet Addiction</p>

Internet addiction is a concept that is relatively new to counselors, and the

counseling community has yet to arrive at a mutually agreed upon set of criteria for

defining the phenomena (Griffiths, 1998; Grohol, 1995; Mitchell, 2000). Currently

Internet Addiction Disorder and Pathological Internet Use serve as the two dominant

models of Internet addiction in counseling and psychology. Both models are adapted

from existing diagnostic criteria found in the Diagnostic and Statistical Manual of Mental

Disorders (4th edition), and serve as the foundation for virtually all research conducted on

Internet addiction in the last decade (Anderson, 1999; Armstrong, Phillips, & Saling,

2000; Brenner, 1997; Chou, 2001; Chou et al., 1998; Davis, Smith, Rodrigue, & Pulvers,

1999; *Diagnostic and statistical manual of mental disorders*, 1994; Morahan-Martin &

Schumacher, 2000; Petrie & Gunn, 1998; Pratarelli & Browne, 2002; Shapira, Goldsmith,

Keck, Khosla, & McElroy, 1995).

<p align="center">Internet Addiction Disorder</p>

Internet Addiction Disorder (IAD) was originally conceptualized in 1996 by Dr.

Ivan Goldberg, and was intended as a parody, using existing DSM-IV criteria for

substance dependence. However, upon posting his criteria for Internet Addiction Disorder on the Internet, Goldberg received numerous emails from individuals claiming to suffer from Internet addiction. While Goldberg eventually spoke out against his own criteria, support for his conceptualization of Internet addiction grew, with many professionals failing to realize until some time later that his criteria were intended as a joke (Goldberg, 1996; Grohol, 1995). Goldberg's primary concern with IAD as an operationalization of excessive Internet use was that it implied a form of physical dependence, whereas Goldberg held that IAD was in reality a psychological disorder (*Just Click No*, 1997).

Goldberg's criteria for Internet Addiction Disorder are as follows (*Just Click No*, 1997):

A maladaptive pattern of Internet use, leading to clinically significant impairment or distress as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

(I) Tolerance, as defined by either of the following:

(A) a need for markedly increased amounts of time on Internet to achieve satisfaction

(B) markedly diminished effect with continued use of the same amount of time on Internet

(II) Withdrawal, as manifested by either A or B below:

(A) the characteristic withdrawal syndrome, 1, 2 and 3 below

(1) cessation of (or reduction in) Internet use that has been heavy and prolonged.

(2) two (or more) of the following, developing within several days to a month after Criterion 1:

(a) psychomotor agitation

(b) anxiety

(c) obsessive thinking about what is happening on the Internet

(d) fantasies or dreams about the Internet

(e) voluntary or involuntary typing movements of the fingers

(3) The symptoms in Criterion 2 cause distress or impairment in social, occupational or another important area of functioning

(B) Use of Internet or a similar on-line service is engaged in to relieve or avoid withdrawal symptoms

(III) Internet is often accessed more often or for longer periods than was intended

(IV) There is a persistent desire or unsuccessful efforts to cut down or control Internet use

(V) A great deal of time is spent in activities related to Internet use (e.g., buying Internet books, trying out new WWW browsers, researching Internet vendors, organizing files of downloaded materials.)

(VI) Important family, social, occupational, or recreational activities are given up or reduced in duration and/or frequency because of Internet use

(VII) Internet use is continued despite knowledge of having a persistent or recurrent physical, family, social, occupational, or psychological problem that is likely to have been caused or exacerbated by Internet use (e.g., sleep deprivation, marital difficulties, lateness for early morning appointments, neglect of occupational duties, or feelings of abandonment by significant others).

Pathological Internet Use

In 1996 Kimberly Young conceptualized Internet addiction in terms of PIU. Whereas Goldberg drew parallels between substance dependence and Internet addiction, Young believed Internet addiction paralleled the processes found in pathological gamblers, as defined by the DSM-IV (Young, 1996, 1997).

Young's criteria were operationalized in the Diagnostic Questionnaire, an eight-item questionnaire used for assessing PIU. Individuals who answered affirmatively to five or more items on the DQ were considered addicted (Young, 1996).

The eight items of the Diagnostic Questionnaire are as follows:

1. Do you feel preoccupied with the Internet?

2. Do you feel the need to use the net with increasing amounts of time to achieve satisfaction?

3. Have you repeatedly made unsuccessful efforts to control, cut back or stop net use?

4. Do you feel restless, moody, depressed or irritable when attempting to cut down or stop net use?

5. Do you stay online longer than intended?

6. Have you jeopardized or risked the loss of a significant relationship job, educational or career opportunity because of the net?

7. Have you lied to family members or others to conceal your involvement with the net?

8. Do you use the net as a way of escaping from problems or of relieving moods (e.g., depression, anxiety, guilt, etc.)?

Theoretical Limitations

One of the difficulties in establishing a uniform diagnosis for Internet addiction lies in the wide range of activities that the Internet offers. Researchers have reported addictive-like behaviors from individuals engaged in the consumption of online pornography, shopping, gambling, stock trading, chatting, information searching, gaming, and a variety of other venues. This range of activities leaves some researchers questioning "Internet addiction" as a construct, as the addictive behavior may be a manifestation of some other form of addiction, with the Internet as the means of accessing the primary addiction. While care should be taken to factor out addictions that may manifest themselves through Internet use, there is strong support for the premise that Internet addiction is a valid and useful construct for describing excessive Internet use that interferes with the daily functioning of those engaged in these behaviors (Griffiths, 2000).

Prevalence

Early research on the prevalence of Internet addiction was limited to examinations of self-reported addicted populations, yielding little information on how widespread

Internet addiction was among the general populace. Young (1996) and Brenner (1997) both sampled these "high use" Internet groups, finding addiction rates of 70-80%.

Recognizing the limitations of early research, a series of studies were conducted on populations of college students. While these studies failed to represent the general populace, they provided valuable insights into Internet addiction rates among college students. Of 1,078 college students surveyed, Armstrong (1999) found that 9.8% met diagnostic criteria for Internet addiction. Kubey (2001) yielded similar results, finding that 9.26% of his sample (n=576) met criteria for Internet addiction. A conservative study by Chou (2000) used dual diagnostic criteria from the DQ and Internet Related Addictive Behavior Inventory (Brenner, 1997), classified only students who met both sets of criteria as Internet addicted. His results indicated an addiction level of approximately 6% among students surveyed.

One national study examined Internet addiction across a broader sample population. Greenfield (1999), in a national survey of 17,251 Internet users visiting abcnews.com, found an addiction rate of approximately 6%. Given higher rates of Internet use among college students, it is likely that the general populace has an overall lower rate of addiction than that found in college students.

<center>Symptoms</center>

According to Griffiths (1998), Internet addiction has six defining characteristics including salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse. These characteristics are found in the criteria for Internet Addiction Disorder and

Pathological Internet Use, and serve as a core set of conditions that define the general experience of Internet addiction.

<u>Salience</u>

For Internet addicts, Internet use takes precedence over other important aspects of daily living. This reprioritizing of activities is often downplayed by the addict, but is highly noticeable to significant others in the addict's life. As with other forms of addiction, under-reporting of addictive tendencies is typical for Internet addiction (Young, 1996).

<u>Tolerance</u>

Internet addicts require increasing amounts of Internet use in order to feel satisfied with the experience. In a survey of 496 active Internet users Young (1996) found that of the 396 who met criteria for Internet addiction, the majority reported increases in Internet use over time, as compared to the non-addicts who reported relatively stable rates of use. Other studies confirm this report, demonstrating that the average individual uses the Internet approximately 4 hours per day, up from 2.4 hours per day in 2000 (NetRatings, 2004). While this number has increased over time, the increases are gradual for the general population (*How americans are expanding their use of the internet*, 2002; Nie & Erbring, 2000). In contrast, Internet addicts show a rate of use exceeding 20 hours per week (Anderson, 1999; Armstrong et al., 2000; Brenner, 1997; Chou, 2001; Greenfield, 1999; Morahan-Martin & Schumacher, 2000; Weiser, 2001).

Mood Modification

Internet addicts commonly report some form of stress reduction from using the Internet. This stress reduction may be in response to a number of factors, and often centers around relationship problems and/or negative self-perceptions (Kandell, 1998; Morahan-Martin & Schumacher, 2000).

Withdrawal Symptoms

While Internet use can improve the mood of Internet addicts, a failure to access the Internet regularly can generate personal distress for addicts. Withdrawal symptoms can include edginess, an inability to concentrate, and fixation on re-establishing a connection to the Internet (Griffiths, 2000; Young, 1996).

Conflict

The negative consequences of Internet addiction include conflicts in vocational and academic settings, as well as in interpersonal relationships (Anderson, 1999; Brenner, 1997; Chou & Hsiao, 2000). In addition, physical problems can arise from poor self-care (e.g., lack of sleep, limited exercise, poor diet, etc.) (Young, 1996, 1997). Young (1996) found that between 90-95% of self-reported Internet addicts reported moderate to severe distress in work, school, and finances (Young, 1996). These findings were replicated by Chou (2000), who found that Internet addicts reported significant, negative impacts from their Internet use on daily life and school.

Addicts are often less likely to report relationships as problematic in regards to their Internet use. In their study of 752 Taiwanese high school students, Liu and Tsai (2000) found that Internet addicts (*n*=88) recognized difficulties in work and school as a

result of Internet use, but viewed their social relationships as improved through Internet use. These findings are supported by a study of online chat behavior in which Peris et al. (2002) found that 75% of Internet addicts viewed their online relationships as being just as real as face-to-face relationships. Based on these findings, it is likely that complaints regarding relational distress are more likely to be reported by friends, family, and co-workers of Internet addicts than by the addicts themselves (Peris et al., 2002).

Relapse

Internet addicts find it difficult to discontinue high rates of Internet use. This may be due to the cycle of reinforcement generated by the addiction. There are some indications that Internet addiction is the result of an attempt to compensate for unsatisfactory relationships or situations. Over time, this compensatory behavior begins to have a negative impact on the addict's daily life. The resulting stress drives the individual into an even deeper level of addictive behavior. Attempts to refrain from excessive Internet use often fail. These attempts create discomfort as addicts are faced with the living consequences of their behavior (Griffiths, 2000; Young, 1997).

Synchronous Communication

In addition to Griffith's core characteristics of Internet addiction, researchers have noted a variance in the types of activities engaged in by Internet addicts. Non-addicted Internet users access the Internet to maintain relationships, gather information, and utilize services. Addicted individuals have a higher rate of Internet use for leisure and for synchronous communication (Kubey et al., 2001).

Synchronous communication is often a central theme in the online behaviors of Internet addicts. Young (1996) found that chat room and MUD use accounted for 63% of an addict's time online, as opposed to 12% for non-addicts (Young, 1996). In a study of 217 college students, Wang (2001) confirmed these findings, noting a significant increase in interactive, online gaming among addicts. In a survey presented to 576 college students, Kubey et al. (2001) found that students that met the criteria for Internet addiction used asynchronous (email, web browsing, etc.) communication at 1.67 times the rate found among non-addicted students. However, they used synchronous communication methods (MUDs, chat rooms, online gaming, etc.) at 7 times the rate of non-addicts (Kubey et al., 2001). The trend toward synchronous communication among Internet addicts supports the notion that Internet addiction is a compensatory phenomenon geared toward meeting the social needs of individuals who may be having difficulty with face-to-face relationships (Kandell, 1998; Kraut et al., 1998).

Demographics

Early examinations of computer addiction indicated that addicts of technology were highly educated adult males with backgrounds in technologies (Shotton, 1991). However, this profile has shifted as computer technologies have become increasingly affordable and easy to use, and as expectations have risen that computer technologies should be used for a wider range of products and services (Hall & Parsons, 2001). Among younger populations, traditional stereotypes are supported. Addicts tend to be male college students, often with a major in the hard sciences. Of a sample of 106 college students that met the criteria for Internet addiction, 93 were male (Anderson, 1999).

Similarly, in his study of 277 college students, Wang (2001) found that 33 of the 41

Internet addicts in his study were male. In regards to academic majors, Wang (2001) and

Anderson (1999) both found that Internet addicts were twice as likely to major in applied

or hard sciences as other areas such as art or social sciences.

Among older adults, female homemakers are the most significant population of

Internet addicts (Griffiths, 2000). This trend was first articulated by Young (1996), who

found that the majority of Internet addicts in her study were older females with an

average age of 43. Netratings (2004b), an international Internet research company, found

that middle-aged women (35-49 years of age) comprise the largest demographic

population among online gamers, lending credibility to Young's findings.

Several factors common to these two populations may explain predispositions to

Internet addiction. Both populations are often unemployed or marginally employed, have

relatively flexible schedules, and have the resources to access Internet technologies

(Eppright et al., 1999). In addition, these groups both face significant social challenges.

For younger, male, college students these challenges include identity development,

navigating interpersonal intimacy, and managing increasingly flexible schedules

(Kandell, 1998). For older, female, homemakers, these challenges may include isolation,

loneliness, and shifts in family roles (Eppright et al., 1999). The anonymity of Internet

use allows both groups to meet personal and social needs in a controlled environment

where they can experiment with different roles and styles of interacting with others

(Kandell, 1998; Young, 1996, 1997; Young & Rodgers, 1998a).

Assessment and Treatment

Several assessment tools are available for evaluating Internet addiction. The most commonly used tools for assessing Internet addiction are the Diagnostic Questionnaire (DQ) (Young, 1997) and the Internet Related Addictive Behavior Inventory (IRABI) (Brenner, 1997). The DQ is comprised of eight true/false questions. Responding true to any five of the items qualifies an individual as Internet addicted. The DQ has been used in several studies with consistent results. However, some concerns have been raised about the current format of the tool. One correction that may overcome some of the limitations of the tool would be to require that to qualify for Internet addiction individuals must respond affirmatively to one of the last three items in the scale, in addition to answering affirmatively to five questions overall. Otherwise, the scale allows for the possibility of labeling someone with Internet addiction who may in fact be using the Internet for academic or vocational pursuits, rather than out of an addictive drive (Beard, 2001).

The IRABI is based on the IAD model of Internet addiction. Developed by Viktor Brenner (1997), the IRABI is a 32 item true/false inventory. In its initial implementation, Brenner found that the IRABI held an internal validity of .87. The IRABI has also been successfully adapted for use in two studies of Internet addiction among Taiwanese college and high school students (Chou, 2001; Lin & Tsai, 1999).

Internet Addiction in Massively Multiplayer Online Role-

Playing Games

In comparison to the literature available on Internet addiction, the literature available on Internet addiction in MMORPG gaming is limited. This is surprising given

the numerous references in the literature to synchronous communication, MUDs, chat rooms, and online gaming. It is possible that a limited awareness and understanding of MMORPGs has restricted the amount of research done in this area.

Demographics

Several studies have been conducted to determine the demographic breakdown of MMORPG players. In an examination of online polls from two major MMORPG websites, Griffiths et al. (2003) found that 85% (n=18,312) of MMORPG players were male and 80% of players were under the age of 30. Approximately 45% of those polled were students (Griffiths et al., 2003). Yee (2001a) confirmed these results, finding that 84% of MMORPG players were male (n=2843). However, his study found that while approximately 80% of male players were under the age of 30, over 50% of female players were over the age of 30 (Yee, 2001a). One third of those surveyed were students (Yee, 2001d). Yee's findings validated other research indicating that older women constitute a significant subpopulation among online gamers (NetRatings, 2004b; Young, 1996).

The data collected by these studies indicate that the majority of MMORPG players are white males between the ages of 15 and 30 and that these individuals are often engaged in secondary or post-secondary educational pursuits. While females comprise a smaller segment of the MMORPG player population, this population appears to be primarily older females, often in homemaking positions. The fact that demographic trends in MMORPGs parallel trends among the general population of Internet addicts gives validity to concerns that MMORPGs may be facilitators of addictive behavior (Griffiths et al., 2003; Yee, 2004; Young, 1996).

Prevalence

There are limited data on the prevalence of Internet addiction among MMORPG players. In a survey of 3,989 Everquest (a popular MMORPG) players, Yee (2002) found that 15.4% reported withdrawal symptoms when unable to play online, 23.8% experiences mood modification when playing, 28.8% played even when they did not enjoy the experience, and 18.4% reported conflict in academics, health, finances, or relationships (Yee, 2002). In a follow up study of 2,237 MMORPG players, Yee (2004) found that 40.7% of participants considered themselves addicted to their gaming experience. An additional 19% considered themselves in the "maybe" category for gaming addiction (Yee, 2004). These findings, while limited, support the notion that Internet addiction may be more prevalent among players of MMORPGs than other populations.

Counselor Conceptualizations of Internet Addiction

Counselors are increasingly reporting encounters with individuals suffering from some form of Internet addiction (Oravec, 2000; Young, Pistner, O'Mara, & Buchanan, 1999). Little is known about the rates at which counselors are encountering this problem, how they view the issue, or what types of treatments/diagnoses are being used. In a preliminary study by Young (1999), 85% of mental health counselors surveyed reported they encountered a client suffering from Internet addiction, with 80% reporting an increase in the number of cases of Internet addiction they have seen. However, these data are drawn from a self-selecting sample of 35 counselors, many of whom were actively seeking information on Internet addiction. Of those who participated in the study, 94%

felt that Internet addiction was more widespread than their caseloads represented. In terms of their client's behavior, 91% of counselors surveyed indicated that clients used the Internet to form new relationships, and 74% treated clients with relationship problems that later turned out to be caused by Internet addictions. The majority (80%) of counselors who participated in this survey felt that further research was warranted on Internet addiction, and 90% of participants felt that Internet addiction is a growing problem that deserves greater attention from mental health professionals (Young et al., 1999).

<div align="center">Summary</div>

Internet addiction is a widespread problem with a growing research base. Incidence rates for Internet addiction range between 4% and 10%. This rate is consistent internationally (Chou, 2001; Chou & Hsiao, 2000; Lin & Tsai, 2000; Wang, 2001). Research indicates that younger, male students and older, homemaking females are most vulnerable to Internet addiction (Eppright et al., 1999; Kandell, 1998). Regardless of the model adopted for evaluating Internet addiction, symptoms of Internet addiction include salience, tolerance, mood modification, withdrawal, conflict, relapse, and a tendency toward synchronous communication (Griffiths, 1998; Kraut et al., 1998; Kubey et al., 2001). Research on MMORPGs and Internet addiction indicates parallels between the population composition of Internet addicts in general and populations that play in MMORPGs (Yee, 2001a, 2001d; Young, 1996). However, addiction rates appear to be significantly higher among MMORPG players than in the general populace (Yee, 2002, 2004). Counselors are reporting steady increases in cases of Internet addiction, and

support additional research and professional attention on this issue (Young et al., 1999).

The greatest limiting factor in studies of MMORPG addiction and how this phenomenon

is viewed by counselors is a lack of research (Griffiths, 1998; Grohol & Kimball, 1997;

Young et al., 1999).

CHAPTER III

METHODS

The purpose of this study was to explore the use of MMORPGs as a facilitator of Internet addiction. This inquiry focused on answering the following questions:

1. What is the incidence rate of Internet addiction among MMORPG players?

2. Which of the following social needs predict Internet addiction among MMORPG players: loneliness, support, validation, confidence, and liberation?

3. To what degree are players of MMORPGs seeking treatment for Internet addiction?

4. How are counselors diagnosing Internet addiction?

5. What theoretical approaches are counselors using to treat Internet addiction?

This chapter reviews sampling, instrumentation, data collection, and data analysis for this study. Methodological considerations are reviewed, followed by an examination of sampling, instrumentation, and data collection for MMORPG players and counselors respectively. Data analysis was reviewed. The chapter concludes with a consideration of the ethical limitations of this study.

Overview

Two populations participated in this study: Massively Multiplayer Online Role-Playing Game players and counseling professionals. Data were collected through two

surveys: The MMORPG Player Survey and the Counselor Survey. Both surveys were

provided online, using dynamic PhP technology, and using a MySQL database to store

survey results. The domain for both surveys was http://www.counselor-education.org.

Unique page names were designated for each survey to prevent participants from

inadvertently submitting the wrong survey.

<u>MMORPG Player Survey</u>

MMORPG player participants were self-selected through responses to online

advertising. Self-selection among MMORPG players may have limited this study in

several ways. First, self-selection may have resulted in data collection from those

individuals who have an interest in the research topic. This may have resulted in a higher

than average response rate of Internet addicts to the survey. Second, self-selection may

have resulted in the exclusion of some Internet addicts who may be so actively engaged

in MMORPG game playing that they lacked the time or interest to participate in a survey.

Despite these limitations, self-selection sampling was the most effective method of

gathering data from the population of MMORPG game players. Self-selection allowed

for participation across numerous MMORPG titles, and likely increased the number of

participants in this study, as opposed to selecting individuals who played specific

MMORPG titles.

Sampling

MMORPG players were invited to participate in this study through the use of

online advertisements on popular MMORPG websites and bulletin boards.

Advertisements were posted to gaming websites and bulletin boards for the top five

MMORPG titles: Everquest, Dark Age of Camelot, Ultima Online, Final Fantasy XI, and Star Wars Galaxies. The combined membership of these five titles represented 1,680,000 of the approximately 3,000,000 subscriptions to MMORPGs in the United States at the time of the survey (Woodcock, 2003).

Advertising locations for this study were drawn from community fan site sections on the home page for each of four of the MMORPGs. Dark Age of Camelot did not have a community fan site section. In this case, websites were chosen from mainstream MMORPG sites that support multiple MMORPGs, including Stratics and the Vault Network.

After drawing a complete list of fan sites from the MMORPG homepages, locations were filtered from participation based on the following criteria:

- Website lacked a means of contacting the location owner to request advertising of the study

- Website was specific to a subpopulation of the game, such as a class or server specific website

- Website was inappropriate for posting an advertisement for research, based on the existing content or format of the website

At the conclusion of the filtering process, a total of 49 websites were deemed acceptable for distribution of advertising for this study. These websites are listed in appendix A. Contact methods for these sites varied by location. Invitations to participate in the MMORPG Player Survey were posted directly to 21 MMORPG forums. Email requests for advertising were sent to 28 non-forum MMORPG websites. Twelve

MMORPG site webmasters declined participation, resulting in a total of 37 participating websites for this study. A second advertisement was placed in each MMORPG forum site on the Friday following the initial post. Data for this study were collected for two weeks from the time of the initial advertisements. A total of 513 valid surveys were submitted over the two week data collection period. Invalid responses were determined on the basis of duplicate IP addresses, unreasonable ranges for hours of Internet and MMORPG use per week, and lack of actual participation in MMORPGs.

<div align="center">Instrumentation</div>

The MMORPG Player Survey was comprised of the following sections:

MMORPG Use

Social Needs

Internet Addiction

Demographics

The MMORPG Use section included questions regarding hours of MMORPG game time per week, hours of other non-school/work-related Internet use per week, years of Internet use, and types of Internet access. The Social Needs section of the survey used three pre-existing scales (Three-item Loneliness Scale, Internet Behaviors and Attitudes Scale, and the Social Support Index) to determine what social needs were predictive of Internet addiction among MMORPG players. These scales assessed levels of loneliness, support, validation, liberation, and confidence among participants. Social scales were standardized on a five point scale to establish consistency between the items. Copies of these assessments can be found in Appendices B, C, and D respectively.

The Internet Addiction section of the survey included the Diagnostic Questionnaire, as presented in Appendix E. One additional item was added to this section: "Have you ever sought professional help to decrease the amount of time you spend on the Internet?" This question followed the same true/false format found in the rest of the Diagnostic Questionnaire, and was used to assess the degree to which active MMORPG players have sought assistance for decreasing their level of addictive behavior.

The Demographics section included questions regarding gender, age, hours of work per week, education, income, relational status, number of children, living area, and country of origin. Age and gender were used to establish the degree to which participant data were representative of MMORPG players as a whole. Age and gender were also important factors in assessing Internet addiction, as researchers have indicated that younger male populations and older female populations tend to be vulnerable to Internet addiction (Eppright et al., 1999; Kandell, 1998). Other demographic data were collected to provide greater context to the backgrounds of participants in this study and to check for assumptions about the demographic characteristics of Internet addicts. A full copy of the MMORPG Player Survey can be found in Appendix F.

<u>Three-Item Loneliness Scale</u>

The Three-Item Loneliness Scale assessed loneliness among MMORPG Player Survey participants. Developed by Hughes, Waite, Hawkley, and Cacioppo (2003), the Three-Item Loneliness Scale was developed as an abbreviated alternative for assessing loneliness in larger surveys. In her pilot test of the Three-Item Loneliness Scale, Huges

found an alpha internal consistency coefficient of .72 (*n*=299) (Hughes, Waite, Hawkley, & Cacioppo, 2003). Huges et al. (2003) also obtained an alpha internal consistency coefficient of .72 for the Three-Item Loneliness Scale when used to assess loneliness in a larger sample of adults (*n*=2,182).

Loneliness, as defined by Hughes et. al. (2003, p. 657), consists of "feelings of isolation, feelings of disconnectedness, and feelings of not belonging." Hughes is careful to point out that loneliness and being physically alone are not necessarily the same experience. The Three-Item Loneliness Scale has no predefined point at which an individual is considered lonely. Rather, loneliness is seen on a continuum.

In this study, the Three-Item Loneliness Scale demonstrated an alpha internal consistency coefficient of .86 (*n*=512). This compares favorably with the alpha internal consistency coefficients of this scale in previous research. The Three-Item Loneliness scale rated responses for each item on a 5 point scale, from 1=Practically Never to 5=Almost Always. The index of loneliness was generating by summing the three responses, providing a range of 3-15 for the scale.

The Three-Item Loneliness Scale is an adaptation of the Revised UCLA Loneliness Scale (Hughes et al., 2003). While the R-UCLA is widely recognized as a valid and reliable tool for measuring loneliness, demonstrating a .94 internal consistency and a .74 correlation with other scales of loneliness, it is lengthy and unsuitable for inclusion as a part of a longer survey (McWhirter, 1990; Oshagan & Allen, 1992). Recognizing this limitation in the R-UCLA, the Three-Item Loneliness scale was developed as an alternative method of measuring loneliness in populations where brevity

may be desired (Hughes et al., 2003). Overall, this scale performs comparably to the R-UCLA while requiring less time of participants, making it ideal as part of a more extensive survey.

<u>Internet Behaviors and Attitudes Scale</u>

The Internet Behaviors and Attitudes Scale assessed the degree to which participants in the MMORPG Player Survey used the Internet to create new relationships and to maintain online relationships. Two specific constructs were measured: confidence and liberation. Confidence is the degree to which users feel competent, at ease, and control in an online environment. Liberation is the degree to which individuals feel disinhibited and free to experiment with various roles in online relationships. The scale consisted of 15 likert items on a 5 point scale, from 1=Strongly Disagree to 5=Strongly Agree. The 7 items related to confidence demonstrated an alpha internal consistency coefficient of .74, while the 8 items related to liberation demonstrated an alpha internal consistency coefficient of .81.

The scale was originally developed by Morahan-Martin & Schumacher (2000) in their examination of psychological factors related to Internet addiction. As with the Three-Item Loneliness Scale, confidence and liberation were measured on a continuum with no clearly defined points at which an individual is categorized as confident or liberated (Morahan-Martin & Schumacher, 2000). It is difficult to compare internal consistency in this survey to previous research using the Internet Behaviors and Attitudes Scale, as no previous validity or reliability information is available on this scale (Morahan-Martin & Schumacher, 2000).

Social Support Strength Index

The Social Support Strength Index assessed the social connectedness of participants in the MMORPG Player Survey participants with friends, family, and community. The Social Support Strength Index consisted of 11 likert items on a 5 point scale and 2 open numeric responses that were adjusted to a 5 point scale. Social support refers to the support an individual receives outside of immediate family members. Validation is the degree to which an individual feels value as part of some group or organization (Weiser, 2001).

During the creation and initial testing of the Social Support Strength Index, Weiser (2001) found that items related to support had an alpha internal consistency coefficient of .82, while items related to validation had an alpha internal consistency coefficient of .74. In contrast, this study found that items related to support had an alpha internal consistency coefficient of .62. Items related to validation demonstrated an alpha internal consistency coefficient of .74.

Diagnostic Questionnaire

The Diagnostic Questionnaire was an eight item, true/false tool that assessed Internet addiction among MMORPG Player Survey participants (Young, 1999). In this study, the DQ demonstrated an alpha internal consistency of .76 (n=501). A 13 item adaptation of the DQ demonstrated an alpha internal consistency coefficient of .87 (Morahan-Martin & Schumacher, 2000).

The DQ operates under the theoretical model of Pathological Internet Use and has been used in numerous studies of Internet addiction (Chou, 2001; Lin & Tsai, 1999;

Morahan-Martin & Schumacher, 2000; Young & Rodgers, 1998b). The DQ has moderate

correlations to other assessments of Internet addiction, including the Chinese Internet

Related Addictive Behaviors Inventory (r=.64, p<.01) (Chou & Hsiao, 2000) and the

Internet Addiction Scale for Taiwanese High School Students (IAST) (r=.62, p<.01) (Lin

& Tsai, 1999).

Summary

The Massively Multiplayer Online Role-Playing Game Player Survey assessed

demographic factors of MMORPG players and gathered general use information

regarding their online gaming habits. The MMORPG Player Survey also assessed

participants for indicators of Internet addiction, and assessed social needs that were

potentially predictive of Internet addiction among MMORPG players. These social needs

included loneliness, confidence, liberation, support, and validation.

Procedure

MMORPG players were invited to participate in the study via 49 fan sites and

forums (see Appendix A). An introductory message briefly described the purpose of the

study, as well as how to participate. The initial message included the survey URL

http://www.counselor-education.org/mmorpg/mmorpg.php. Forty-nine MMORPG-

related websites and bulletin boards were contacted regarding this study. In the case of

bulletin boards, advertisement for the study occurred during the day on Monday and in

the evening on Friday. This maximized the likelihood of the advertisement being seen by

the widest range of players, without offending the bulleting board communities with

excessive posts.

In the case of non-forum websites, a request for advertising was directed to the webmaster, along with a copy of the materials to be posted. Unlike bulletin board systems that require multiple postings (due to the high number of competing posts), website news pages only require one post. Requests for posting were performed on a Monday. Twelve webmasters declined to post the survey materials, stating that they were not in line with the overall content of their sites, reducing the number of advertising locations for this study to 37 participating websites. Data for this study were collected for a period of two weeks from the time of the original advertisements, providing potential participants sufficient time to respond to the advertisement (Hamilton, 2003).

<u>Counselor Survey</u>

Counselors were invited to participate in the survey through distribution of an email advertisement. Two thousand counselors were randomly emailed from the membership list of the American Mental Health Counselors Association (AMHCA), a division of the American Counseling Association for mental health counselors. Email distribution was managed by Infocus, the marketing company hired by AMCHA to handle all research requests. Counselors were randomly selected by Infocus from their list of 4,000 AMHCA members.

This survey encountered several technical difficulties including a second distribution invitation the day after the first invitation was sent, and difficulties with spam blockers. The second email distribution was not anticipated or requested and resulted in some confusion among survey participants who already submitted a response ("Why am I getting a second invitation, I already responded!"). Users of the Earthlink Internet service

were uniformly blocked from receiving the research invitation. This was confirmed through block messages sent back in response to the email broadcast. It is likely that an unknown number of other potential participants were also blocked from participating as a result of similar email blocking technologies. Due to these technical difficulties, it is impossible to know how many counselors actually received invitations and chose not to participate.

<div align="center">Sampling</div>

Two thousand counselors were randomly selected from the membership roster of the American Mental Health Counseling Association (AMHCA). Counselors were contacted via email with an invitation to participate in the study. Recipients had two weeks to participate in the survey from the time they received the email invitation. As with MMORPG players, counselor responses were anonymously collected. A total of 80 counselors responded to the survey. An additional 12 counselors indicated through email that they were no longer seeing clients due to an administrative position or retirement.

<div align="center">Instrumentation</div>

The Counselor Survey was comprised of two sections:

Background

Clinical Experiences

The background section included questions regarding demographics, as well as questions regarding professional background, such as years of practice, professional training, current work environment, clients per week, city size, theoretical orientation, and client problems typically treated. See Appendix G for details.

The clinical experiences section of the survey used a series of likert scale questions to examine clinical experiences related to Internet addiction. Counselors were asked to indicate the incidence rates for common sources of Internet addiction based on their own professional experiences of this phenomenon. Categories included: online role playing games, pornography, instant messaging, online gambling/shopping, and information searching. Frequency of clients engaging in these activities was recorded on a 5 point likert scale. These categories were selected based on a qualitative analysis that found that these categories encapsulated the subtypes found in counselor experiences of Internet addiction (Young et al., 1999).

Counselors were also asked what diagnoses they believed most fitting for Internet addiction. Categories for selection included: anxiety disorder, impulse control disorder, obsessive-compulsive disorder, adjustment disorder, relational problems, depression, or other. Finally, counselors were asked what treatment modality/theoretical orientation they are most likely to use in cases of Internet addiction. A complete copy of the Counselor Survey can be found in Appendix G.

<div align="center">Procedure</div>

Counselors were contacted via email with a brief message outlining the purpose of the study and how to participate. Counselor participants were directed to http://www.counselor-education/mmorpg/counselor.php to complete the survey. Data were collected for a period of two weeks from the time of the first email. This provided potential participants with adequate time to respond to the advertisement. The invitation message contained a clear deadline by which all responses must be submitted.

Data Collection and Follow-up

Once the data were collected, they were exported from MySQL into a comma delimited text format and imported into SPSS for analysis. The IP address (a unique numeric identifier of each computer accessing the Internet) of each participant was collected automatically as they completed the survey. Duplicate submissions from the same IP address were removed from the dataset for the MMORPG player survey. IP addresses were removed from the final data in SPSS and MySQL databases to maintain the anonymity of survey participants.

Once data analysis was completed, a summary of the study's findings was posted to http://www.counselor-education.org/mmorpg/results.php for review by the study's participants. Participants received the URL for the summary findings at the completion of their surveys. The summary data remained available online for a period of three months from the time it was posted. Although several technology news websites posted regarding the studies findings, no follow up contacts were made by individuals to the researcher.

Data Analysis

This study explored the facilitation of Internet addiction through the use of Massively Multiplayer Online Role-Playing Games. The following questions were addressed as part of this study:

1. What is the incidence rate of Internet addiction among MMORPG players?

2. Which of the following social needs predict Internet addiction among MMORPG players: loneliness, support, validation, confidence, and liberation?

3. To what degree are players of MMORPGs seeking treatment for Internet addiction?

4. How are counselors diagnosing Internet addiction?

5. What theoretical approaches are counselors using to treat Internet addiction?

This section operationalizes terms related to these questions, and describes how each question was answered.

<center>Incidence Rates for Internet Addiction</center>

The first research question addressed the issue of the incident rate of Internet addiction among MMORPG players. Internet addiction was defined as excessive Internet use that has the following characteristics: salience, tolerance, conflict, withdrawal, mood modification, and relapse (Griffiths, 1998). For purposes of data analysis, Internet addiction was scaled based on the number of affirmative responses to the Diagnostic Questionnaire. Descriptive categories were generated based on the distribution of the data, based on natural breaks in the flow of data. These categories included no risk, low risk, moderate risk, and high risk. For purposes of comparison with other research, incidence rates were also determined using Young's original criteria for the DQ.

Social Needs in MMORPGs

The second research question addressed the degree to which social needs led to Internet addiction among MMORPG players. The MMORPG player survey included tools for assessing five social needs: loneliness, confidence, liberation, supports, and validation. Each tool utilized a likert scale to generate a numeric index indicating the strength of five social needs. Social needs were assessed by addressing each of these areas as independent variables in a multiple regression analysis of the dependent variable: Internet addiction. Multiple regression analysis was an appropriate method for assessing social needs due to the likely interrelationships between each of the independent variables

Treatment Seeking Behavior

The third issue addressed by this study was the amount of treatment seeking behavior found among MMORPG players. Treatment seeking behavior was defined as seeking professional help in order to reduce addictive Internet behaviors. Treatment seeking behavior was assessed through a frequency analysis of MMORPG players self-reports of seeking help in response to the true/false question: "Have you ever sought professional help to decrease the amount of time you spend on the Internet?" Counselor perceptions of treatment seeking behavior were assessed through the following question: "Of the clients you have seen in the past year who met the criteria for Internet addiction, how many manifest excessive behaviors with online role playing games?"

Counselor Diagnosis

The fourth issue addressed by this study was the frequency of types of Internet addiction encountered by counselors. This frequency was based on a likert scaling of

frequency of general subtypes of different diagnoses used when assessing Internet addiction, such as depression, impulse-control disorder, etc.

Counselor Treatment Orientation

The fifth issue addressed by this study was what theoretical approaches are used by counselors treating Internet addiction. Theoretical orientation was determined through a frequency count of preferred theories when working with Internet addiction.

Ethical Considerations

This section reviews ethical considerations in the implementation of this research. Data collection through online surveys presented some unique challenges, including difficulty discerning minors from adults, issues of confidentiality, and ensuring proper informed consent is provided.

Subject Risk

There was minimal subject risk in this study. Participation was voluntary and all data were collected anonymously through the Internet. MMORPG player participants may have gained an increased awareness of their attitudes and behaviors in relation to Internet use and Massively Multiplayer Online Role-playing Games. It is possible that such an increase in awareness resulted in some personal discomfort. No discomfort or risk was anticipated for counseling professionals participating in the study.

One potential risk was the possibility of individuals younger than 18 participating in the MMORPG player portion of the study without parental consent. One of the limitations of Internet-based data collection is that there is no sure way to control for minors participating in a study (Aimstrong, 2003). Given the anonymous nature of the

data collection process, the survey format, and the inability to filter minors from the study, the survey proceeded, collecting data from all participants. However, a statement requesting that minors seek the permission of an adult guardian before participating in the study was included in the informed consent document at the beginning of the MMORPG player survey.

<div align="center">Researcher Responsibility</div>

Participants were informed that the survey was for the purpose of research and that participation was voluntary. This information was included in both the initial advertisement for the study, as well as in an informed consent document provided at the beginning of the survey. Due to the anonymous nature of the responses, participants were informed that they would be unable to withdraw from the study once they submitted their surveys. However, they were able to withdraw from the study at any time prior to submitting the survey, and were able to skip any questions that made them uncomfortable.

<div align="center">Notification</div>

Each subject participating in the study was prompted with an informed consent screen. At the bottom of the informed consent screen were two buttons marked "I agree to the terms of this study" and "I do not agree to the terms of this study." Selecting the "I agree" button moved participants into the survey itself. Selecting "I do not agree" took participants to a screen thanking them for their time. Individuals who selected "I do not agree" did not proceed to the survey portion of the site. Participants who selected "I agree to the terms of this study" electronically signified their intent to participate.

Subject Discomfort

Participants received a full description of the study in the informed consent document, including the fact that they could withdraw from the study at any time until the point that they submitted their surveys. The informed consent also outlined the length of the survey and the mode for data collection. No physical or mental discomfort was anticipated by participating in this study.

Results Dissemination

At the conclusion of the survey, participants were directed to a page thanking them for assisting with the survey. They were also notified that the results of the study would be available at http://www.counselor-education.org/results.php within two months of the conclusion of the study. The results included the purpose of the study, relevant data tables, and a brief explanation of the findings.

Undesirable Consequences

No undesirable consequences were anticipated for participants in this survey. MMORPG data were anonymously collected, with no identifiable information to trace participant surveys back to participants. Counselor data were also anonymous. In addition, the nature of the counselor data being collected was not such that any harm would result from its release.

Confidentiality

Internet protocol address information were collected from each participant in order to prevent duplicate responses. IP information is generally only traceable by to a specific Internet Service provider. Internet Service Providers keep their client IP

information confidential, barring legal violations. Furthermore, IP information can only

be traced back to individual computers, not users. This combination of factors made the

use of Internet Protocol address extremely confidential. Only through extraordinary

efforts could user confidentiality be breached. All IP address information was stored in

the database repository were deleted once duplicate entries were removed from the

MMORPG Player Survey.

<div align="center">Data Protection</div>

Data collected for this study were stored in a password protected MySQL

database. A backup copy of finalized data was downloaded and copied to two compact

discs and stored in separate locations. In addition, paper copies of all research data were

kept on file. The CDs containing the original electronic data, along with the paper copies,

will be stored for no less than seven years after the completion of the research project. At

the end of seven years, all data related to the project will be destroyed.

CHAPTER IV

MMORPG RESULTS

This chapter reviews findings from the MMORPG Player Survey and Counselor Survey. MMORPG Player Survey and Counselor Survey data is analyzed sequentially. The response rate for each survey is first reviewed followed by an analysis of the validity of the data. Demographic data are then reviewed and results for the following research questions are provided:

1. What is the incidence rate of Internet addiction among MMORPG players?

2. Which of the following social needs predict Internet addiction among MMORPG players: loneliness, support, validation, confidence, and liberation?

3. To what degree are players of MMORPGs seeking treatment for Internet addiction?

4. How are counselors diagnosing Internet addiction?

5. What theoretical approaches are counselors using to treat Internet addiction?

<u>MMORPG Survey Responses</u>

A total of 572 surveys were submitted over the two week period data were collected for this study. Of the surveys collected, 59 submissions were found to be invalid, leaving 513 valid surveys for analysis. Surveys were deemed to be invalid for the following reasons:

- Duplicate Internet Protocol Address (*n*=18)

- Failure to indicate any MMORPG gaming hours (*n*=13)

- Unrealistic values (>150 hours per week) for MMORPG and leisure Internet use (*n*=28)

At the conclusion of the data collection period, survey responses were downloaded and entered into SPSS for analysis. Preliminary results for the study were posted to the research web site so that research participants could see the general outcome of the study. The unanticipated advertising from the posting of preliminary findings resulted in an additional 1,091 submissions, of which 992 were valid. While the data from these additional submissions paralleled findings in the original data set in most regards, demographic differences and potentials for data contamination necessitated that the additional data be excluded from this study.

<div align="center">MMORPG Data Validation</div>

Several indicators support the validity of the 513 participating surveys. First, the average number of hours for MMORPG gaming in this survey matched values found in MMORPG industry and related research, with participants reporting approximately 24 hours per week of MMORPG gaming (Griffiths et al., 2003; Origin, 2003; Yee, 2001c). Second, the gender distribution for participants in this survey was predominantly male (83.4%, *n*=428), which is comparable to findings in other research on MMORPG gaming (Griffiths et al., 2003; Yee, 2001a, 2001c). Third, reported age differences between male and female MMORPG gamers were replicated among participants in this survey, with female participants reporting significantly higher mean ages than male participants

(Eppright et al., 1999; Kandell, 1998; Young, 1997). Finally, an analysis of the frequency distribution of cumulative DQ scores for participants in this survey indicated that survey responses paralleled general recommendations for the scoring of Internet addiction as recommended by the DQ scoring guidelines (Beard, 2001; Young, 1997). For example, the high risk category for Internet addiction matched the percentage of Internet addicts as defined by Beard, at approximately 10% of all participants (Beard, 2001). These indicators supported the premise that the MMORPG participants in this study were representative of participants in other studies of MMORPGs and, in the case of hours of use, are representative of MMORPG gamers as a collective whole.

<u>Demographics</u>

This section reviews demographic data collected from participants in the MMORPG Player Survey. Demographic data were reviewed for the survey as a whole. Demographics were also examined in terms of differences between male/female participants and adult/adolescent participants. An understanding of these differences helps to validate the research sample, and to define the populations participating in MMORPGs. This is particularly true in light of the demographic clustering (younger males and older females) noted in much of the literature on MMORPG game play and Internet addiction. For purposes of this study, adolescents were defined as individuals 12 to 17 years of age. Due to the low response rate among adolescent females (*n*=2), no analysis of this population was performed.

Gender

Survey participants were asked to indicate their gender. Of those surveyed, 512 responded. Participants in this survey were predominantly male (83.4%, *n*=428). This distribution strongly resembles findings in other MMORPG research. As was reported earlier, Griffiths et al. (2003) found that 85% (*n*=18,312) of MMORPG players were male.

Age

Survey participants were asked to indicate their age in years. Of the 509 individuals who reported an age, 84.3% were adults (*n*=439) and 13.7% were adolescents (*n*=70). Adults were defined as individuals 18 or older. Adolescents were defined as individuals 12 - 17 years of age. Of the 70 adolescent respondents, 68 were male.

Table 1. Gender and Age of Participants

Gender	Age Group	N	Minimum	Maximum	Mean	Std. Deviation
			Male Participants			
Male	Adolescent	68	12	17	15.75	1.3
	Adult	357	18	58	27.80	7.38
			Female Participants			
Female	Adolescent	2	14	17	15.5	2.12
	Adult	82	18	69	32.01	9.73

The average respondent for this survey was 26.81 years of age. However, when examining age by gender, and accounting for adolescents within the sample, the distribution changes. As is demonstrated in Table 1 above, the mean age for adolescent male participants was 15.75 (SD=1.3); whereas the mean age for adult males was 27.80 (SD=7.38). The mean age for adult females was 32 (SD=9.73). Adult females were found to be significantly older than adult males ($t_{(103.415)} = -3.683$, p>.001).

Yee (2001a) reported that 80% of MMORPG male players were under the age of 30, while 50% of the females were over the age of 30. These findings were generally supported in this study. Approximately 50% of females in this study were 29 or older, with 70% of males being younger than 30.

<div align="center">Internet Access and Use</div>

Survey participants were asked to indicate the number of years they have had Internet access, and the type of Internet access they currently used. The majority of male (94.7%, n=338) and female (92.7%, n=76) adult MMORPG players used the Internet for four or more years. In contrast only 84.5% (n=60) of adolescent males reported accessing the Internet four or more years. Five percent (n=4) of adolescent users accessed the Internet for three years and 7.4% (n=5) accessed the Internet for two years. Across gender and age groups, cable modem (60%, n=312) was the predominant mode of Internet access, followed by DSL (30%, n=171). Approximately 4% (n=23) of MMORPG players reported using dial-up Internet access.

Hours of MMORPG Play and Leisure

Survey participants were asked to indicate how many hours per week they spend playing MMORPGs. They were also asked how many hours per week they spent in non-work/school related leisure Internet use outside of MMORPGs. Participants reported spending 23.99 (*SD*=16.03) hours per week playing MMORPG games, and an additional 11.29 (*SD*=13.56) hours on other leisure-oriented Internet activities. No significant gender or age differences were found in the hours of MMORPG game play or in the number of hours of leisure-oriented Internet use. The number of hours of MMORPG game play reported in this study were consistent with data collected in other studies of MMORPGs (Griffiths et al., 2003; Yee, 2001a) as well as usage rates provided by producers of MMORPGs (Origin, 2003).

Education

Survey participants were asked to indicate the level of education they had obtained. Levels of education varied both by gender and age. Of adolescent male respondents, 98.5% (*n*=67) reported having a high school or junior high school education while 1.5% (*n*=1) did not respond to this item. These findings are consistent with developmental expectations for this group. Of adult male respondents, 40.6% (*n*=145) reported having a high school education, 24.9% (*n*=89) reporting having an associate's degree, 23.8% (*n*=23.8) reported having a bachelor's degree, and approximately 10% (*n*=34) reported having a master's or doctoral degree. Of adult female respondents, 24.4% (*n*=20) reported having a high school education, 30.5% (*n*=25) reported having an associate's degree, 32.9% (*n*=32.9) reported having a bachelor's degree, and 11% (*n*=9)

reported having a master's or doctoral degree. These educational differences are likely a reflection of age differences between males and females in this study.

Employment

Survey participants were asked to indicate the number of hours worked each week. Participants in this survey averaged 31.4 (SD=18.07) hours of work per week. Adolescent males averaged 15.6 hours of work per week. Adult males averaged 35.69 (SD=16.58) hours of work per week. Adult females averaged 27.94 (SD=17.71) hours of work per week. Mean differences between the number of hours worked for adult males and females were significant ($t_{(501)}$ = -8.560, p>.001).

Income

Survey participants were asked to indicate their yearly incomes. No significant gender differences were found in income for adult participants. Of the adults who responded to the survey, 32.7% (n=144) reported an income of <$25,000, 30% ($n$=132) reported an income of $25,000 - $39,999, 19.5% ($n$=86) reported an income of $40,000 - $59,999, and 13.9% ($n$=61) reported incomes of $60,000 or greater. Of the adolescent males who responded to the survey, 61.6% (n=45) reported incomes under $25,000 per year, while 32.9% (n=24) failed to respond to the item.

Relationship Status

Survey participants were asked to indicate their relational status and number of children. Of the 513 adults and adolescents who responded to these items, 48.5% reported being single, 31.4% reported being married, 14.4% reported being partnered, and 4.3% reported being divorced. However, examining this data by gender and age group revealed

significant differences in family status. The majority of adolescent males reported being

single (81.7%, *n*=58) or partnered (9.9%, *n*=7). In my opinion, it is possible that

adolescents interpreted the term partnered to refer to boyfriend/girlfriend relationships.

No adolescents reported being married or divorced. As indicated in Table 2 below, adult

women were more likely to be married, partnered, or divorced than their adult males.

Table 2. Relationship Status for Adults

Relationship Status	Frequency	Percent	Cumulative Percent
Male Participants			
Single	177	49.6	49.6
Married	119	33.3	82.9
Divorced	15	4.2	87.1
Partnered	46	12.9	100
Total	357	100	
Female Participants			
Single	12	14.6	14.6
Married	42	51.2	65.9
Divorced	7	8.5	74.4
Partnered	20	24.4	98.8
Total	82	100	

Living Environment

Survey participants were asked to indicate the type of city or town in which they lived. Responses to this question indicate that the majority of MMORPG players live in larger cities. Figure 1 below provides a percentage distribution for adult participants by city type in this survey.
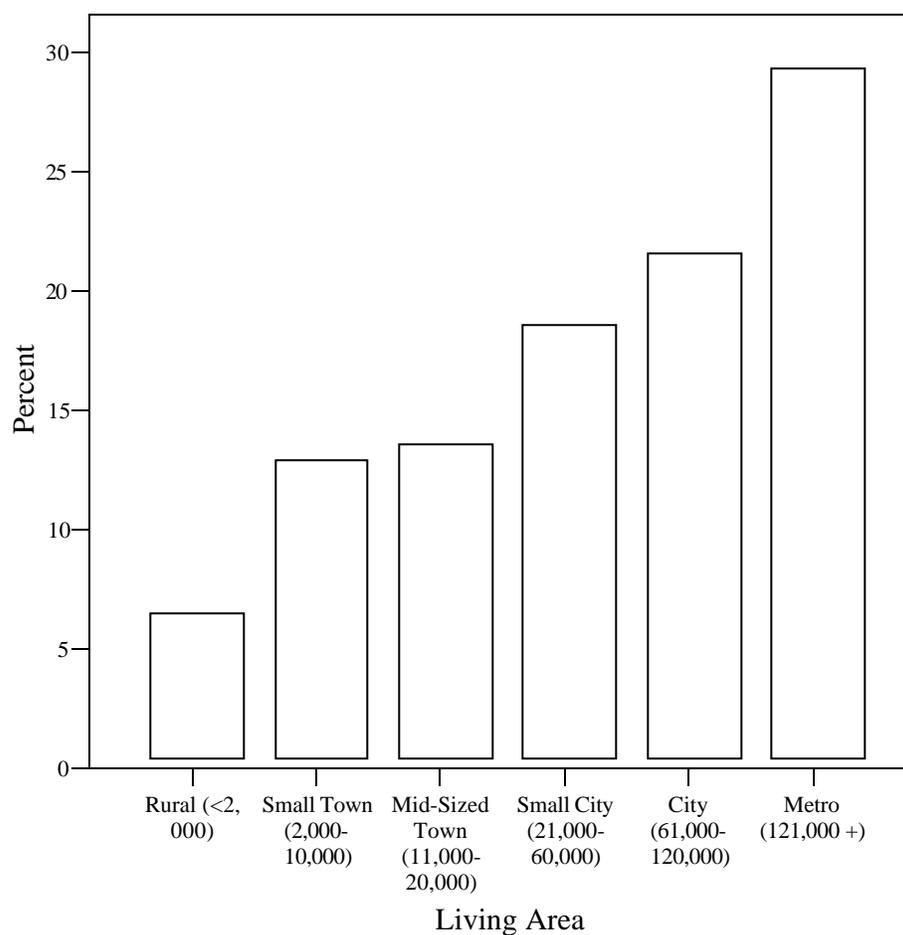
Figure 1. Distribution of Adult Living Areas

Survey results for adult participants indicated that adult MMORPG players tended to come from larger cities and towns. However, this trend toward larger cities did not apply to adolescents who participated in this survey. As Figure 2 below illustrates, adolescents showed a much smaller distribution in metropolitan areas, and a much higher distribution in small to mid-sized towns than did adult participants.
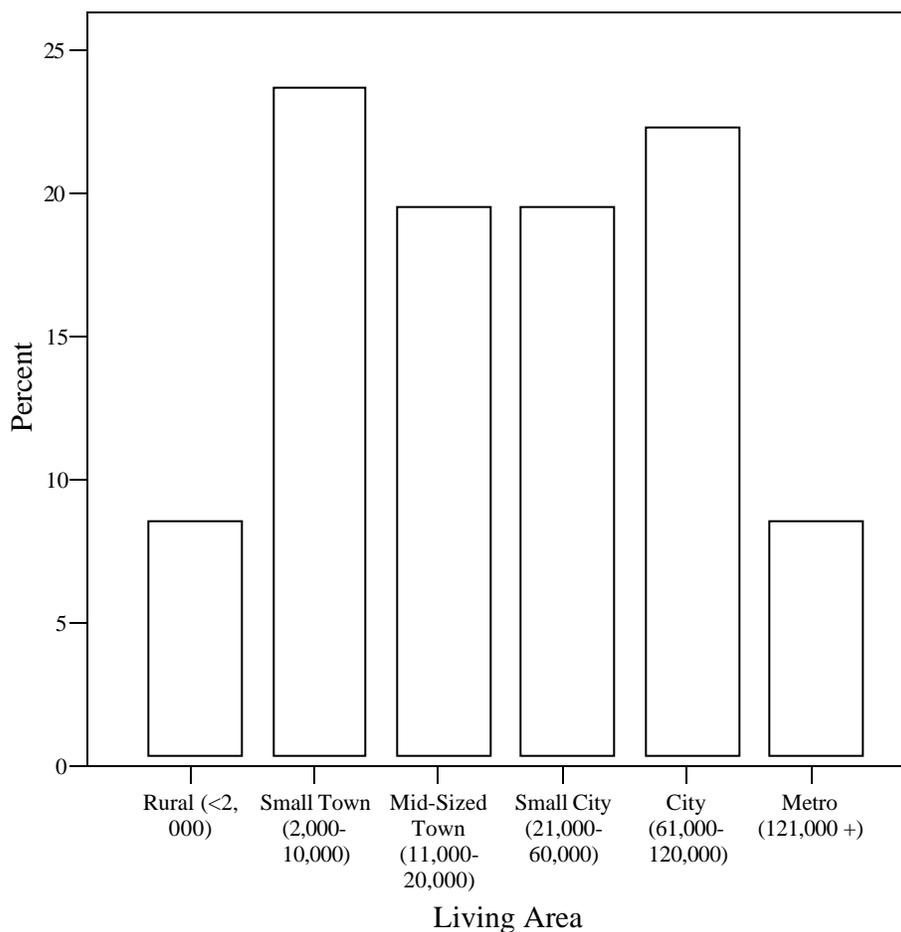
Figure 2. Distribution of Adolescent Living Areas

Country of Origin

Participants were asked to designate their country of origin. Participants in this survey were largely from the United States (82.5%, n=423), Canada (6.6%, n=34), and Great Britain (3.7%, n=20). Table 3 below provides of the full distribution of countries of origin. Other countries included Denmark (n=2), Finland (n=2), Malaysia (n=2), Netherlands (n=2), Poland (n=2), Singapore (n=2), Austria (n=1), France (n=1), Ireland (n=1), Poland (n=1), South Africa (n=1), and Spain (n=1).

Table 3. Country of Origin

Country	Frequency	Percent	Cumulative Percent
United States	423	82.46	82.46
Canada	34	6.63	89.08
Great Britain	20	3.9	92.98
Sweden	6	1.17	94.15
Australia	5	.97	95.13
Germany	4	.68	95.91
Belgium	3	.58	96.49
Other	16	3.51	100

Counselor Survey Responses

Of the 2,000 emails distributed to members of American Mental Health Counselors Association (AMHCA), a total of 80 counselors participated in the survey over the two week period data were collected for this study. An additional 12 counselors responded via email to state that they were no longer seeing clients due to retirement or administrative duties. Due to limitations of the technology being used, it was impossible to determine a specific response rate. This is largely due to the fact that no data is available on how many potential participants actually received the invitations sent. No invalid responses were collected. At the conclusion of the data collection period, survey responses were downloaded and entered into SPSS for analysis.

Counselor Data Validation

Given the limited number of responses to the broadcast email, it is difficult to determine the validity of this sample. An attempt was made to compare the characteristics of the response group to the general characteristics of the AMHCA membership. AMHCA only recently began collecting demographic data on their members and had very limited data available at time they were contacted. While unable to provide empirical membership data, the AMCHA member services department described their members through a personal email in the following manner: "most are in private practice, more are female, and the ages tend to be of the baby boomer era" (Morano, 2005). This description generally matches the demographic characteristics for counselor survey participants, providing some evidence that the survey participants are representative of members of the AMCHA as a whole.

Demographics

This section reviews the demographics of participants in the counselor survey. Counselor participants were predominately Caucasian (n=70). Other ethnicities represented in this study included African American (n=2), Hispanic (n=3), Native American (n=1), and Asian American (n=1). Two counselors did not specify an ethnic background. There were no significant differences in response rates of male (n=38) and female (n=42) counselors, nor were any significant age differences found between male and female counselors ($t_{(78)}$ = .780, p>.432). The mean age for counselor participants was 48 (*SD*=12.46).

Professional Background

This section reviews the professional backgrounds of participants in the counselor survey. Professional background areas include degree type, professional training, years of experience, clients per week, geographical area of practice, employment setting, client issues, and general theoretical orientation.

Degree Type

Counselor participants were asked to indicate their degree type. Mental health counseling was the predominant degree type (n=33), followed by counseling psychology (n=16), and counselor education (n=13). Of the counselor participants, 10% (n=8) indicated some "other" degree type, in areas such as pastoral counseling, clinical psychology, school counseling, etc.

Professional Training

Counselor participants were asked to indicate their level of professional training. Gender differences were noted between male and female counselors. Of male counselors participating in this study, 52.6% (n=20) had a master's degree and 42.1% (n=16) had a doctoral degree. In contrast, 85.7% (n=36) of female counselors had a master's degree. Only 9.5% (n=4) of female counselors indicated having a doctoral degree.

Years Experience

Counselor participants were asked to share their years of experience as a practitioner. Counselors averaged 15.80 (SD=11.39) years experience within their professions. No significant difference was found in the number of years experience between male and female counselors.

Clients per Week

Counselor participants were asked to share how many clients they saw each week. Counselors averaged 16.3 (SD=10.7) clients per week. No significant differences were found in the number of clients per week between female and male counselors.

Geographical Area of Practice

Counselors were asked to indicate the geographical area in which they practiced. As is illustrated in Table 4 below, counselors indicated a fairly even distribution across geographical areas of practice, with the exception of small rural towns (n=1). Geographic categories were arbitrarily created. However, participants were shown not only a geographic descriptor, but population ranges as well.

Table 4. Geographical Area of Practice

Geographic Area	Frequency	Percent	Cumulative Percent
Rural (<2,000)	1	1.3	1.3
Small Town (2,000-10,000)	16	20	21.3
Mid-sized Town (11,000-20,000)	9	11.3	32.5
Small City (21,000-60,000)	15	18.8	51.3
City (61,000-120,000)	21	26.3	77.5
Metro (120,000+)	18	22.5	100
Total	80	100	

Employment Setting

Counselor participants were asked where they were employed. Of the 78 counselors that responded to this question, 52% (n=42) worked in private practice and 22% (n=18) worked in some form of agency. Other employment settings included university counseling centers, churches, medical offices, etc. These findings are consistent with the description of membership provided by the AMCHA.

Client Issues

Counselors were asked to indicate the types of client issues they commonly treated. Selection of multiple issues was permitted. An "Other" field was provided where

counselors could add client issues not listed by default in the survey. Depression ($n=74$), anxiety ($n=68$), adjustment disorders ($n=56$), relationship difficulties ($n=51$), substance abuse ($n=40$), and grief/loss issues ($n=38$) were the prominent client issues reported by counselors in this survey. Some other issues included schizophrenia, trauma, domestic violence, eating disorders, sexual issues, and employee assistance programs. The full list of client issues is provided in Appendix H.

General Theoretical Orientation

Counselors were asked to indicate which general theoretical orientations they used in their practices. Multiple theory selection was permitted. Cognitive ($n=56$), person-centered ($n=31$), solution focused ($n=24$), family systems ($n=21$), and reality therapies ($n=19$) were the most prevalent treatment modalities among counselors surveyed. With the exception of person-centered therapy, the majority of theories espoused by these counselors were behaviorally or action oriented. Counselors had the option of indicating other theories they used in their work. Appendix I provides the full response set for counselor theoretical orientations. "Other" theoretical orientations were included in this table.

Research Questions

This section provides the results to the following research questions:

1. What is the incidence rate of Internet addiction among MMORPG players?

2. Which of the following social needs predict Internet addiction among MMORPG players: loneliness, support, validation, confidence, and liberation?

3. To what degree are players of MMORPGs seeking treatment for Internet addiction?

4. How are counselors diagnosing Internet addiction?

5. What theoretical approaches are counselors using to treat Internet addiction?

Research Question 1

"What is the incidence rate of Internet addiction among MMORPG players?"

The Diagnostic Questionnaire (DQ) was used to assess Internet addiction among MMORPG players. DQ scores ranged from 0 to 8 points, with a mean of 2.42 and a standard deviation of 2.02. The DQ had a coefficient alpha of .77. As is demonstrated in Figure 3 below, the distribution of responses was positively skewed.
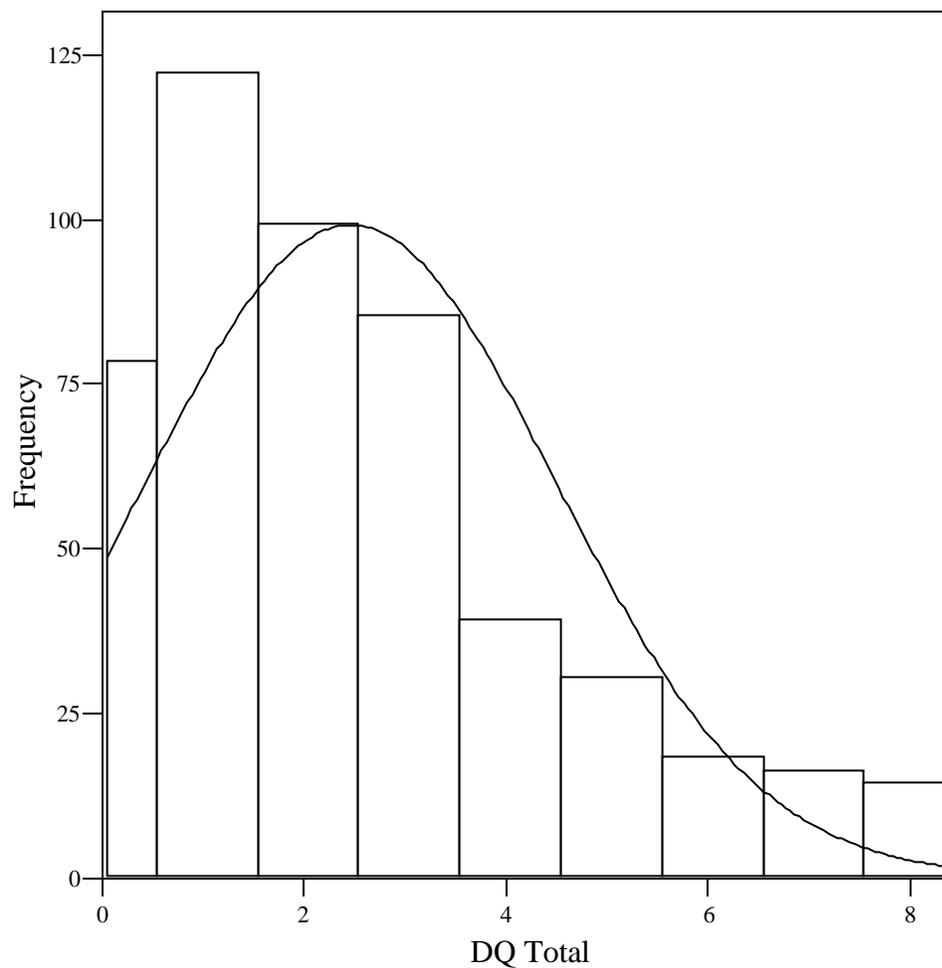
Figure 3. Diagnostic Questionnaire Distribution

Using the criteria set forth by Young (1997), 15.29% (*n*=78) of survey

participants meet the criteria for Internet addiction (responding affirmatively to 5 or more

of the 8 items on the DQ). Using Beard's (2001) suggested modifications to Young's

criteria, 9.58% (*n*=49) of survey participants meet the criteria for Internet addiction

(responding affirmatively to 6 or more of the 8 items on the DQ, including items 1-5).

For purposes of this study, DQ scores were categorized based on the frequency distribution of the DQ results. Responses were categorized as "No Risk," "Minimal Risk," "Moderate Risk," or "High Risk" for Internet addiction. No Risk individuals did not respond affirmatively to any items on the DQ, and constituted 17.5% (n=90) of those surveyed. Minimal Risk individuals responded affirmatively to 1-3 items on the DQ, and constituted 59.6% (n=306) of those surveyed. Moderate Risk individuals responded affirmatively to 4-5 items on the DQ and constituted 13.5% (n=69) of those surveyed. High Risk individuals responded affirmatively to 6 or more items on the DQ, and constituted 9.4% (n=48) of those sampled. Risk levels, with associated frequencies are provided in Table 5 below.

Table 5. Diagnostic Questionnaire Responses by Risk Level

Risk Level	Frequency	Percent	Cumulative Percent
No Risk	90	17.5	17.5
Minimal Risk	306	59.6	77.2
Moderate. Risk	69	13.5	90.6
High Risk	48	9.4	100
Total	513	100	

Risk levels for Internet addiction showed some variance in distribution when examined by age, but not gender. Adolescent means on the DQ were 3.14 (*SD*=2.02), whereas adult the adult mean was 2.3 (*SD*=2.00). Mean DQ scores were significantly higher for adolescents than adults ($t_{(499)}$ = 3.26, p>.001). No gender-related differences were found for means on DQ scores ($t_{(130.617)}$ = 1.29, p>.22).

Appendix J illustrates the distribution of risk factors among survey participants by both gender and age group. As noted earlier, the limited number of adolescent female participants in this study made statistical analysis of this group unviable.

<div align="center">Research Question 2</div>

"Which of the following social needs predict excessive MMORPG behavior: loneliness, support, validation, confidence, and liberation?"

Social needs were measured through the use of the Three Item Loneliness Scale, the Internet Behaviors and Attitudes Scale, and the Social Support Strength Index. These assessment tools were used to measure levels of loneliness, support, validation, confidence, and liberation.

Three Item Loneliness Scale

Of 513 survey participants, 512 completed the Three Item Loneliness Scale. The alpha coefficient for the Three Item Loneliness Scale was .86. The possible range of responses for this scale was 3 to 15 points. The mean for the scale was 6.76 (*SD*=3.01). No significant gender differences were found on the Three Item Loneliness Scale. However, loneliness was significantly higher for adolescents than adults ($t_{(510)}$ = -2.503, p>.01), with an adolescent mean of 7.58 (*SD*=2.9) and an adult mean of 6.62 (*SD*=3.01).

Higher scores on the Three-Item Loneliness Scale indicated greater amounts of loneliness.

Internet Behaviors and Attitudes Scale

Of the 513 survey participants, 504 completed the Internet Behaviors and Attitudes Scale, which assessed confidence and liberation. The alpha coefficient for Internet Behaviors and Attitudes Subscale was .86. The possible range of responses for the confidence portion of the scale was 7 to 35 points. The mean response on the confidence scale was 18.69 (*SD*=4.3). The possible range of responses for the liberation portion of the scale was 8 to 40 points. The mean response for the liberation subscale was 17.84 (*SD*=6.18).

Social Support Strength Index

Of 513 survey participants, 505 completed the Social Support Strength Index, which assessed support and validation. The alpha coefficient for the Internet Behaviors and Attitudes Subscale was .75. The possible range of responses for the validation portion of the scale was 7 to 35. The possible range of responses to the support subscale was 6 to 30. The mean response on the validation scale was 21.44 (*SD*=4.51). The mean response on the validation subscale was 17.42 (*SD*=4.38).

Multiple Regression Analysis

Stepwise multiple regression analysis was used to determine what social needs predicted Internet addiction among survey participants. An analysis of correlations between the DQ, loneliness, confidence, liberation, validation, and support found several general trends. First, the DQ, loneliness, confidence, and liberation demonstrated

moderate positive correlations to one another. Second, support and validation demonstrated positive correlations to one other. Finally, the DQ, loneliness, confidence, and liberation demonstrated negative correlations to support and validation. Correlational data are shown in Table 6 below.

Table 6. Correlations Between Social Needs and Addiction

	DQ	Loneliness	Confidence	Liberation	Validation	Support
			Male Participants			
DQ	1	.41	.51	.39	-.27	-.15
Loneliness	.41	1	.43	.42	-.5	-.34
Confidence	.51	.43	1	.68	-.31	-.14
Liberation	.34	.42	.68	1	-.27	-.2
Validation	-.27	-.5	-.31	-.27	1	.38
Support	-.15	-.34	-.14	-.2	.38	1
			Female Participants			
DQ	1	.56	.64	.61	-.36	-.12
Loneliness	.56	1	.44	.57	-.52	-.36
Confidence	.63	.44	1	.75	-.22	-.11
Liberation	.61	.57	.75	1	-.28	-.23
Validation	-.36	-.52	-.22	-.28	1	-.49
Support	-.12	-.36	-.11	-.23	.49	1

Internet addiction among MMORPG players was measured through the DQ. A significant model emerged ($F_{2,473}=115.921$, $p < .001$) with an adjusted R square of .326. Significant variables are shown in Table 7 below.

Table 7. Social Predictor Regression Coefficients

	Unstandardized Coefficients		Standard Coefficients	t	Significance
	B	Std. Error	Beta		
(Constant)	-2.43	.35		-7.05	.00
Confidence	.2	.02	.42	10.06	.00
Loneliness	.17	.03	.25	5.94	.00

An analysis of social needs by gender revealed no variation in what predictor variables contributed to Internet addiction. However, both loneliness and confidence, as predictor variables, accounted for a greater portion of the variance in DQ scores for women than men, as is illustrated in table 8 below. The regression model accounts for approximately 49% of the variance in female DQ scores, whereas the model accounts for 30% of the variance in male DQ scores. While no data were collected on alternative predictors of Internet addiction among MMORPG players, it is possible that achievement factors are a contributing factor in Internet addiction among male MMORPG players.

Table 8. Model Summary

Gender	R	R Square	Adjusted R Square	Std. Error of the Estimate
Male	.55	.30	.30	1.73
Female	.70	.50	.49	1.26

Significant variables, by gender are provided in Table 9 below.

Table 9. Regression Coefficients by Gender

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Male Participants					
(Constant)	-2.38	.39		-6.03	.00
Confidence	.204	.02	.41	8.89	.00
Loneliness	.15	.03	.23	4.94	.00
Female Participants					
(Constant)	-2.83	.65		-4.37	.00
Confidence	.2	.04	.49	5.34	.00
Loneliness	.2	.06	.35	3.78	.00

Research Question 3

"To what degree are players of MMORPGs seeking treatment for excessive

online gaming?"

The degree to which players of MMORPGs seek treatment for Internet addiction

was measured by the question: "Have you ever sought professional help to decrease the

amount of time you spend on the Internet?" Of the 513 individuals surveyed, .6%

indicated that they have sought professional help in the past (n=3), 98.6% indicated they

have not sought professional help (n=506), and .8% did not respond to the item (n=4).

Approximately 55% (n=44) of counselors surveyed indicated that they have seen

clients who met the criteria for Internet addiction. Counselors in this group saw an

average of 7 (SD=19.28) Internet addicted clients in the past year. However, there was

wide variation in the actual number of Internet addicted clients seen. When participants in

the counselor survey were asked to rate the frequency with which they encountered

varying types of Internet addiction (pornography, instant messaging, online gambling,

web browsing, and online gaming), counselors ranked online gaming as the second least

likely form of Internet addiction they have encountered.

While it is impossible to generalize findings from the response group of three

individuals who sought professional help for Internet addiction, these three individuals

share some common characteristics. All three individuals were male between the ages of

15 and 20. All three had high school educations. These individuals reported being single

with no children, incomes under $25,000 per year, and working part-time. These three

individuals reported spending 10, 40, and 70 hours online playing MMORPGs, with risk

levels on the Diagnostic Questionnaire (DQ) ranging from moderate to high. All three

met the criteria for Internet addiction as defined by the DQ.

<div align="center">Research Question 4</div>

"How are counselors diagnosing Internet addiction?"

Counselors were asked to indicate how they would diagnose Internet addiction

given the fact that there is no official diagnosis for this phenomenon. Of the 80

counselors who participated in the survey, 44 counselors reported treating an individual

who met the criteria for Internet addiction based on the criteria of the Pathological

Internet Use (PIU) model.

Table 10. Internet Addiction Diagnosis

Diagnosis	Frequency	Percent
Depression	18	40.9
Obsessive Compulsive Disorder	15	34.1
Impulse Control Disorder	14	31.8
Relational Problem NOS	9	20.5
Anxiety Disorder	7	15.9
Adjustment Disorder	3	6.8
Other	2	4.5

Results for this research question were limited to those individuals who have actually encountered clients with characteristics of Internet addiction. Counselors were provided six predefined diagnostic categories to choose from, as well as an "other" category. Multiple selections were allowed. As indicated in Table 10 above, counselors were most likely to diagnose Internet addiction as depression, obsessive compulsive disorder, or impulse control disorder.

Counselors were also asked to describe the frequency with which they have encountered different forms of Internet addiction, including pornography, web browsing, gambling, instant messaging, and online role-playing games. Frequency was measured on a five-item likert scale from "Very Often" to "Never." The mode for each Internet addiction type is provided in Table 11 below, as well as the actual number of responses to the item.

Table 11. Internet Addiction Content Types

Internet Addiction Content	Descriptor	Frequency
Instant Messaging	Very Often	20
Web Browsing	Very Often	15
Pornography	Often	17
Online Role-playing	Sometimes	22
Gambling	Sometimes	16

Research Question 5

"What theoretical approaches are counselors using to treat Internet addiction?"

Counselors were asked to indicate what theoretical approach they have used to treat Internet addiction. Multiple selections were permitted. These results were compared with the same group's general theoretical preferences. Cognitive, reality, family systems, and solution focused approaches continued to be the preferred methods for working with clients with Internet addiction. However, person-centered approaches significantly declined when dealing with Internet addictions. There appeared to be a consistent shift away from awareness oriented therapeutic modes and toward behavioral or goal oriented counseling among counselors participating in this survey.

There appeared to be no overlap between counselor generated theoretical orientations in general practice and in treating Internet addiction. In other words, none of the "other" theoretical orientations indicated for general practice were applied to Internet addiction. Nor were any of the "other" theoretical orientations indicated for treatment of Internet addiction indicated for general practice. Counselors showed limited interest in using special modalities for treating internet addiction, such as group counseling (n=3) or online counseling (n=1). Table 12 below provides counselor preferences for theories in treating Internet addiction.

Table 12. Theoretical Orientations to Internet Addiction

Theory	IA Treatment		General Orientation	
	Frequency	Percent	Frequency	Percent
Cognitive	19	43.2	33	75
Reality	10	22.7	12	27.3
Family Systems	9	20.5	14	31.8
Solution Focused	8	18.2	15	34.1
Person-Centered	3	6.8	16	36.4
Group	3	6.8		
Gestalt	3	6.8	6	13.6
Psychoanalytic	2	4.5	5	11.4
Narrative	2	2.5		
Transactional Analysis	1	2.3		
Online Counseling	1	2.3		
Existential	1	2.3	6	13.6
Abstinence	1	2.3		
EMDR	1	2.3		
PsychoTheoSexual Addiction	1	2.3		
Counseling	1	2.3		
Adlerian			5	11.4

Table 12-Continued

Feminist	1	2.3
Biopsychosocial	1	2.3
Developmental	1	2.3
Eclectic	2	4.6
Empathic Attachment	1	2.3
Jungian	2	4.6
Object Relations	1	2.3

<u>Conclusion</u>

Three unique demographic groups were identified among participants of the MMORPG Player Survey: adolescent males, adult males, and adult females. These groups showed important differences in demographic characteristics, risk levels for addictive MMORPG game play, and social needs that predict excessive MMORPG game play.

Approximately 25% of those surveyed met the criteria for moderate or high risk for Internet addiction. A regression model found that loneliness and confidence while online reliably predicted DQ scores, with higher levels of loneliness and greater amounts of online social confidence indicating higher scores on the DQ. Responses from MMORPG players and from mental health professionals indicated that MMORPG players with characteristics of Internet addiction were not receiving treatment for this

issue to the degree that other forms of Internet addiction were being addressed. It is worth noting that while 25% of those surveyed indicated moderate levels of risk for Internet addiction, the remaining 75% of MMORPG player participants appear to be at little or no risk of Internet addiction.

Counselors indicated that they were most likely to diagnose Internet addiction as depression, obsessive-compulsive disorder, or impulse control disorder. Counselors showed little variation in treatment approaches to Internet addiction, with the exception of decreases in the use of person-centered approaches. Counselors reported that online role playing was the second least frequent form of Internet addiction they encountered, while issues with chat and instant messaging were the most frequent.

CHAPTER V

DISCUSSION

This chapter discusses the implications of this study in terms of demographics, research questions, and limitations.

Demographics

This section reviews the demographic properties of participants in the MMORPG Player Survey and the Counselor Survey. MMORPG player demographics are addressed first, followed by counselor demographics. Emphasis is placed on MMORPG player demographics.

MMORPG Player Demographics

Participants in the MMORPG Player Survey appeared to be representative of the general MMORPG player population. Demographics characteristics for the MMORPG player sample were consistent with other literature in terms of hours of Internet use, gender distribution, and gender-age differences. Rates of Internet addiction in this sample were lower than the rates reported in other MMORPG research (Yee, 2004), but remained elevated when compared to Internet addiction research on non-MMORPG populations (Anderson, 1999; Kubey et al., 2001; Morahan-Martin & Schumacher, 2000). Despite similarities between demographic characteristics in this sample and other research bodies, several important distinctions and differences arose. These included the minimal participation of adolescent MMORPG players, age differences between genders, differences in living environments for adult and adolescent participants, and educational and relational differences between male and female participants.

<u>Minimal Adolescent Participants</u>

Adolescents comprised only 13.7% of the total number of participants this study. This rate of participation was lower than other studies of MMORPGs. In a study of MMORPG players, Griffiths, Davies, and Chappell (2003) found that 26-40% of survey participants were under 18 or younger. Likewise, in a study of 2439 male MMORPG gamers, Yee (2001a) found that 20.4% of male survey participants were adolescents. Of the 404 female participants in Yee's study, only 4.4% were adolescents.

There are several possible explanations for the low adolescent response rate in this study. One possible explanation for this discrepancy lies in the fact that both Griffiths and Yee studied players from a specific MMORPG (Everquest), whereas this study examined MMORPG gamers across a range of available MMORPGs. It may be that Everquest players have a larger adolescent component than other competing games in the market.

Another possible explanation for the low percentage of adolescent participants in this study was that the nature of the study (i.e., topic, length, etc.) was uninteresting to younger gamers. While the MMORPG survey only required 5-10 minutes to complete, adolescent MMORPG players may have felt the survey time consuming, intimidating, or boring.

Finally, it is possible that the informed consent document, which required permission of a parent or guardian before participating in this study, discouraged adolescent participation in this study. These younger gamers may have felt uncomfortable

participating in an online survey, may have feared that the material was not truly

confidential, or may have been unwilling to get parental permission to participate.

Regardless of the reasons for demographic differences between this study and

other research, it is worth noting that the pattern of low female adolescent participation in

MMORPGs is consistent with other MMORPG research. In Yee's (2001a) study,

adolescent females comprised the smallest demographic group of MMORPG players.

Adolescent female participants comprised 2.7% of all adolescent participants, and less

than .5%, of the overall population. It is also worth noting that adolescents as a group

appear to comprise a minority among MMORPG players in both this and other studies of

MMORPGs.

Gender-related Age Differences

Age differences between male and female MMORPG players were another

noteworthy aspect of this study. As early as Young's (1996) first study of Internet

addiction, a gender difference has been noted between male and female Internet addicts.

Male addicts are traditionally found to be in their late teens through late twenties,

whereas female addicts tend to be middle aged. Similar age discrepancies are found in

demographic studies on MMORPG players. In a study of 2,843 MMORPG players, Yee

(2001a) found that approximately 80% of male players were under the age of 30, while

over 50% of female players were over the age of 30.

Results from this survey indicate that age differences between male and female

MMORPG gamers, while significant, may be exaggerated. The mean age for males in

this study was 25.87 (*SD*=8.09), whereas the mean age for females was 31.61 (*SD*=9.94).

However, when adolescents are factored out of this analysis, the gap between mean ages for adult males and females closes considerably, with values of 27.80 (*SD*=7.38) and 32.01 (*SD*=9.73) respectively. Exaggerated age differences between MMORPG gamers may be accounted for by recognizing the lack of proportionality between adolescent male and female MMORPG players. Male MMORPG players (*n*=68) accounted for 97.3% of adolescent participants in this study, dragging down the overall mean age for male participants.

Education and Relational Status

Adult females in this study were better educated and more likely to be involved in some form of long term relationship than their male counterparts. Adult females were also more likely to have children than their male counterparts. These differences exist even when factoring out adolescent male responses from the MMORPG survey. It is possible that these differences are less a function of gender than they are of age, with older female participants having greater life experience and greater opportunities for education and to build lasting relationships.

Socioeconomic Status

Of the adults MMORPG players in this survey, 67.3% reported incomes at or above $25,000 per year. This may indicate that economic factors are limiting access to MMORPGs for lower income individuals. However, 60% of adult Internet addicts (using the original criteria for the Diagnostic Questionnaire) had incomes below $25,000 per year. It is difficult to determine from the results of this study if lower income is a result of addictive tendencies or what the relationship between social predictors and economic

status might be. However, the issue of economic factors in Internet addiction warrants further investigation in future research.

Living Environment

No significant differences were noted between the living environments for adult males and females. However, adolescent males showed a significantly different distribution across living environments. Unlike adults, adolescents in this study were more likely to come from smaller towns and less likely to come from larger metropolitan areas. One potential explanation for this difference in living environments is that adolescents in smaller towns have limited social outlets and use MMORPGs to fill that need. Adolescents in larger cities may have greater social opportunities outside the home and therefore decreased reliance on online resources such as MMORPG games.

Counselor Survey Demographics

Counselors participating in this study averaged 48 years in age and were primarily Caucasian, with a slightly larger portion of female than male participants. These findings are consistent with the broad description of AMHCA members provided by the AMHCA member services organization (Morano, 2005). Employment type was also consistent with descriptions provided by AMHCA member services, with the majority of counselors working in private practice or an agency setting.

While the demographics of this sample may be representative of AMHCA members, they may not fully represent the range of mental health counselors in the field that are likely to encounter Internet addiction. School and college counselors generally work with populations that may meet the criteria for Internet addiction, yet both of these

groups are notably missing from this sample. Thus, this counselor sample, while representative of private practice counselor settings, may be missing a key demographic group. Future research may benefit from examining school and college counselor experiences with Internet addiction.

<div align="center">Research Questions</div>

This section discusses implications for the results of the research study questions. These questions include:

1. What is the incidence rate of Internet addiction among MMORPG players?

2. Which of the following social needs predict Internet addiction among MMORPG players: loneliness, support, validation, confidence, and liberation?

3. To what degree are players of MMORPGs seeking treatment for Internet addiction?

4. How are counselors diagnosing Internet addiction?

5. What theoretical approaches are counselors using to treat Internet addiction?

<div align="center">Research Question 1</div>

"What is the incidence rate of Internet addiction among MMORPG players?"

Using DQ criteria for Internet addiction, 15.29% of those surveyed in the MMORPG Player Survey qualified as Internet addicts. This rate is significantly higher than rates found in most other studies of Internet addiction, which generally fall in the 4-

10% range (Anderson, 1999; Armstrong et al., 2000; Chou, 2001; Weiser, 2001).

Evaluating Internet addiction in terms of risk, rather than status, and using the natural

distribution of DQ data to define risk categories, results in similarly high values, with

22.9% of all MMORPG survey participants indicating moderate to high risk for Internet

addiction.

Several factors may contribute to these elevated incidence rates. First, MMORPG

players have greater exposure to the Internet and access to faster Internet technologies

than other populations. Currently, 54% of U.S. households access the Internet using

broadband technologies (Krane, 2005). In contrast, 96% of MMORPG players reported

using broadband technologies. Ninety-three percent of MMORPG players reported

accessing the Internet for four or more years. In contrast, only 50% of individuals in the

U.S. have had Internet access for four or more years (*How americans are expanding their*

use of the internet, 2002). In a study of U.S. household Internet use, Stanford researchers

found that both length of access to Internet technologies and the speed of Internet

technologies were predictors of spending increasing time online (Nie & Erbring, 2000).

Thus, it is reasonable to anticipate that MMORPG players, in contrast to the general

populace, will use the Internet more regularly and thus increase the risk for addictive

behaviors.

A second factor that may contribute to elevated rates of Internet addiction among

MMORPG players is the amount of time spent by players online. Typical Internet users

spend approximately 4 hours per week online (NetRatings, 2004; Nie & Erbring, 2000).

College students and adolescents spend approximately 10 hours per week online

(Anderson, 1999). MMORPG players in this study reported spending 24 hours per week online in gaming activities, with an additional 11 hours per week online pursuing other activities. This places MMORPG player's level of Internet use at 3.5 times the rate found among college students, who are already elevated in comparison to the general populace. This level of use among MMORPG players is likely to impact academic, vocational, and relational aspects of player lives, limiting their ability to pursue other interests and leading to the kinds of distress indicated in the DQ.

Social factors may be a third factor that account for elevated incidence rates of Internet addiction among MMORPG players. If Internet addicts use the Internet primarily for purposes of synchronous online communication, and MMORPGs are designed for this function, it makes sense that Internet addiction would be more evident among MMORPG players. Despite the fact that counselors in this study reported MMORPG players as being the second least frequent population to seek treatment for Internet addiction, it is worthwhile to note that users of instant messaging and chat rooms were ranked as the most frequent population to receive treatment for Internet addiction. Chat rooms and instant messaging tools have similar characteristics to MMORPGs (social tools that provide control and anonymity), lending further credence to the possibility that MMORPGs facilitate Internet addiction.

Limitations to the DQ may be a fourth factor contributing to elevated incidence rates of Internet addiction in this study. Approximately 30% of adolescent males were at moderate or high risk for Internet addiction. In contrast, only 22.4% of adult males and 17.1% of adult females were at moderate or high risk for Internet addiction. While it

appears that adolescent males are at much higher risk for Internet addiction than other populations, these findings may be inflated by specific items within the DQ. Consider the final three items from the DQ:

- Have you jeopardized or risked the loss of a significant relationship, job, educational or career opportunity because of the net?

- Have you lied to family members or others to conceal your involvement with the net?

- Do you use the net as a way of escaping from problems or relieving moods (e.g. depression, anxiety, guilt)?

These three items are considered the strongest indicators of problematic or addictive Internet use for the DQ (Beard, 2001). Answering affirmatively to any of these items indicates that potentially serious problems have arisen due to "out of control" Internet use. However, there is an implied assumption that adults and adolescents are developmentally equivalent. Is it possible that an adolescent might indicate affirmatively to any or all of these items, not only for Internet use, but for other activities such as baseball, television viewing, or simply "hanging out" with friends? Common sense dictates that, given that nature of the questions posed, some caution should be taken when interpreting incidence rates of Internet addiction for adolescent populations.

Research Question 2

"Which of the following social needs predict Internet addiction among MMORPG players: loneliness, support, validation, confidence, and liberation?"

Loneliness and confidence were the strongest predictors of Internet addiction among MMORPG players. These findings were consistent for male and female participants. Moreover, loneliness and confidence appeared to have a more pronounced relationship to Internet addiction for female participants. These findings do not imply that support, validation, and liberation hold no predictive value in regards to Internet addiction. However, due to the parsimonious nature of step-wise regression analysis, these factors were not found to be significant enough to remain in the predictive model.

Loneliness implies a need for social companionship, while confidence in online relationships implies a need for empowerment. Together these factors describe an underlying dynamic in which Internet addicted individuals are seeking relationships which provide them a sense of efficacy and control. These findings are consistent with Kandell's (1998) hypothesis that those most susceptible to Internet addiction are individuals in developmental transitions involving social relations. Kandell further hypothesized that younger, male college students and older homemakers were both populations that fit this developmental stage of life; findings which are validated by this study.

If Internet "addiction" is a compensatory behavior designed to meet social needs that are not being met elsewhere, can it continue to maintain the status of an addiction? This point is well illustrated by an email that was received from one survey participant, who will be referred to as Mrs. Smith. Mrs. Smith was extremely apologetic for her participation in the MMORPG Player Survey, fearing that her results might skew the data. By her report, Mrs. Smith is 100% disabled, bedridden, and in a great deal of pain.

She has few if any visitors, and lacks the resources to travel outside her home. She spends a great deal of time online playing MMORPGs. She was concerned that her high levels of MMORPG use, as well as other responses on the survey, might inflate the overall results of the survey. She further shared that MMORPG game play allowed her to interact with others and maintain an active social life where none could exist otherwise.

Assuming that Mrs. Smith's perceptions of her responses were correct, it is likely that she would meet the criteria for Internet addiction. Her levels of validation and support would report as low, and based on her positive experiences online, her scores for loneliness, online confidence, and online liberation would be high. Despite her likely profile on the MMORPG Player Survey, it would be difficult to envision anyone characterizing Mrs. Smith as pathological. Rather Mrs. Smith was using an available tool to meet needs that could not otherwise be met.

Clearly not all individuals playing MMORPGs find themselves in as dramatic a situation as Mrs. Smith. However, many individuals, isolated and otherwise discouraged, may *feel* like Mrs. Smith in their relations with others. As Lin (2001) noted, Internet addicts report great social satisfaction from their online relationships. Other researchers have noted that Internet addicts commonly view online relationships as being as real as face-to-face relationships (Peris et al., 2002). Perhaps more importantly, some researchers have indicated that certain types of individuals view *themselves* as more real online (Fox, 2002). More often than not, it is the families of these "addicted" individuals that feel professional help is needed to assist addicted individuals; a phenomenon that is common

across many forms of addiction (Young, 1996). For the Internet addict, the world of online interactions is where their most important needs are met.

<center>Research Question 3</center>

"To what degree are players of MMORPGs seeking treatment for Internet addiction?"

Responses from the MMORPG Player Survey and the Counselor Survey indicated that Internet addicted MMORPG players were unlikely to seek treatment for their condition. Less than 1% of MMORPG players reported seeking treatment for Internet addiction. Moreover, online role play was the second least frequently encountered form of Internet addiction encountered by counselors in this study. This is puzzling, particularly in light of the elevated incidence rate of Internet addiction found among MMORPG players and the frequency with which Internet addiction cases were reported for instant messaging and chat room users (which have synchronous characteristics similar to the characteristics of MMORPGs).

One possible explanation for the frequency discrepancy between chat room/messaging users and MMORPG players (in terms of treatment) is that there are significantly more chat room and instant messaging users than there are MMORPG players. There are no specific statistics available on the number of chat room or instant messenger users. However, America Online (AOL) alone has over 100 million Instant Messenger users worldwide (Darrow, 2005). When factoring in the number of users of Microsoft Instant Messenger, ICQ, and other similar services (and the countless chat rooms provided through websites), it becomes clear that chat room users and instant

messaging users dwarf the estimated 3,000,000 or more MMORPG players (Woodcock, 2003) in the U.S. and Europe.

The limited treatment of MMORPG Internet addicts can also be viewed in terms of compensatory behaviors. If, as noted previously, MMORPG players are meeting fundamental needs such as companionship, and feel empowered in online relationships, they may not seek treatment regardless of other consequences to their behavior.

<div align="center">Research Question 4</div>

"How are counselors diagnosing Internet addiction?"

Counselors participating in this study indicated that depression was their most frequent diagnosis for Internet addiction, followed by obsessive compulsive disorder and impulse control disorder. Depression has often been linked to Internet use addiction. In a study of 253 individuals in 93 families Kraut et. Al. (1998) found that increased Internet use resulted in subsequently greater levels of depression, stress, and loneliness, with decreases in offline social activities. Similar results were noted among self-reported Internet addicts (n=205) in a study of 445 Internet users (Petrie & Gunn, 1998). However, findings in regards to depression and Internet use/addiction are not consistent. Other researchers have indicated that increased Internet use has no relationship to depression (Sanders et al., 2000).

While research on the relationship between Internet addiction and depression remains conflicted, it is clear that counselors frequently view Internet addiction in terms of a depressive process. The Counselor Survey did not provide the depth necessary to determine the specific reasons why counselors reported diagnosing Internet addiction as

depression. Such a diagnosis may the result of a need to bill third party payment organizations. Lacking a specific diagnostic category for Internet addiction, depression may be a "catchall" for such cases. Another possible explanation for the use of depression as a diagnostic category is that clients are exhibiting symptoms of depression in addition to their addictive behavior. A third possible explanation for the high frequency of depression as a diagnostic category is that counselors, not knowing how else to conceptualize repetitive use of the Internet, are reframing it into a familiar phenomenon.

There is some evidence to support frequent diagnoses of impulse control disorder for Internet addiction. In a study of 20 individuals with self-reported Internet addiction, Shapira et. al. (2000) found that all 20 individuals met the criteria for impulse control disorder, while 3 met criteria for obsessive compulsive disorder. Treuer, Fabian, and Furedi (2001) noted similarly high rates of impulse control disorder among 212 participants in an on-line study of Internet addiction. These findings have several limitations. Shapira's sample was small and lacked a control group. Moreover, participants for this study were obtained through advertising at a department of psychiatry.

Research Question 5

"What theoretical approaches are counselors using to treat Internet addiction?"

Counselors were asked to indicate what general theoretical approaches they used in working with clients. They were then asked to indicate what theoretical approaches they used in working individuals who meet the criteria for Internet addiction. Counselors

remained consistent in their use of cognitive, reality, family systems, and solution focused theories for both general issues and Internet addiction. However, they indicated a shift away from existential and person-centered approaches when dealing with this problem. No data was collected on why counselors favored action oriented over awareness oriented therapies.

<div align="center">Limitations</div>

This section reviews the limitations of this study. For the MMORPG Player Survey these limitations included perceptual limitations, self-selection, self-report, selection bias, evaluation apprehension, and low adolescent response rates. For the Counselor Survey, these limitations included technical limitations, self-selection, memory, sampling method, and evaluation apprehension.

<div align="center">MMORPG Player Survey Limitations</div>

This section reviews the challenges and limitations of the MMORPG Player Survey.

Perceptual Limitations

Technical implementation of the MMORPG Player Survey occurred without incident. However, initial community perceptions of the survey were, in some cases, unexpectedly reactive. During the course of the first week of the survey, 13 emails were received from individuals who demonstrated some form of dissatisfaction with the survey. Other players in the MMORPG community voiced their concerns by participating in the survey and providing repeated, and purposefully invalid, data. The most common examples of this form of response was entering "99,999" for the number of hours of

games played per week or using profanity in the "other" field for country of origin (the only field that allowed qualitative input).

While the format of the complaints varied, the substance of the complaints was fairly consistent. Some members of the MMORPG community were concerned that the survey was not accurately accounting for reasons why people play MMORPGs. With these concerns came accusations that the intent of the survey was to pathologize anyone who plays MMORPGs. Each complaint was responded to individually, and in most cases the concerns were eased or resolved through further explanation of the purpose of the survey. It appears that some members of the gaming community overgeneralized the purpose of the study, viewing it as a survey of the MMORPG experience at the broadest level, rather than as a study of Internet addiction within the context of MMORPGs.

It is likely that these participant concerns stemmed from a misunderstanding of the invitation to participate in the research. Evidence of this misunderstanding was manifest in a secondary manner after the intial research results were provided to the community. The preliminary results included a brief overview of the purposes of the study, as well as an explanation of the findings. Provision of these findings to the community resulted in an additional 1,092 responses to the survey. However, additional survey participation resulted in no additional emails with concerns about the study and only a marginal number of the additional surveys were invalidated due to purposefully inflated data.

It appears that the results distributed to the gaming community provided the additional information necessary to resolve community concerns that arose in the initial

distribution of the survey. Alternatively, it is possible that demographic differences in the second wave of survey submissions account for the reduction in community concerns over the survey. Many of the participants in this second wave of submissions were made aware of the MMORPG survey through Internet news and technology sites. Viewers of these sites may have different demographic characteristics than viewers of MMORPG forums and websites.

Did the community response to the MMORPG Player Survey impact the results of the survey? This is difficult to determine. Online communities can be highly reactive. It is impossible to determine how widespread player misperceptions were toward the MMORPG Player Survey. However, there are several indicators that the data collected are valid and useful. These indicators include data that are consistent demographically with other studies of MMORPG communities and Diagnostic Questionnaire outcomes that are consistent in distribution with the recommended scoring methods for this assessment.

While the data collected appears to be valid for the purposes of this study, community responses to the survey may have limited the quantity of responses. This is evidenced by the fact that survey participation increased, while complaints diminished, *after* the initial research results were provided publicly.

Steps could be taken to avoid future misunderstandings with MMORPG player communities. Focus groups could be used to get community feedback on how a survey is perceived and received. These focus groups would involve posting the survey to a limited subset of the gaming community (perhaps 1 or 2 MMORPG forums or websites). The

advertisement for the survey would outline the purpose of the survey and request feedback on the survey. Feedback might include the use of email, online forums, or a secondary survey to elicit specific feedback about the survey under consideration. This feedback would be used to adjust the survey and any related advertisements in order to minimize community misunderstandings.

Self-Selection

A second limitation of this study involved self- selection bias. Participants in the study were likely to be individuals who were interested in the topics of MMORPGs and Internet addiction, rather than a random sampling of MMORPG players. This may have elevated the percentage of Internet addicts found in this sample.

Self-Report

A third limitation of this study was the use of self-reported data. Participants in the study may have distorted their own experiences when responding to the survey. This can happen as a result of faulty memory, personal biases, or a desire to make a good impression with the researcher.

Selection Bias

Selection bias is a fourth limitation of this study, as a result of using MMORPG forums and websites for data collection. While it is likely that most viewers of MMORPG websites and forums were MMORPG gamers, it is less clear what percentage of gamers participate in MMORPG forums and websites. Put another way, it is possible that truly Internet addicted individuals may spend all of their time in the game, devoting

less time to fan sites, forums, or surveys. This may have resulted in a lower percentage of Internet addicts participating in the study

Evaluation Apprehension

A fifth limitation of this study may have been evaluation apprehension on the part of potential participants. The thought of an online survey may have intimidated some individuals, causing them to avoid participation. It is also possible that highly addicted individuals were too busy to participate in a research study. As noted, this apprehension may be one way to account for the reduced number of adolescent participants in this study.

Adolescent Participants

A sixth limitation of this study was the low response rate by adolescent participants. This reduced response rate makes it difficult to generalize findings from this study to adolescents in general. Future research on MMORPGs may need to focus on in-game data collection in order to minimize potential effects of online surveys or traditional surveys on response rates for this population. In addition, caution should be taken when interpreting the elevated Diagnostic Questionnaire scores for this group. Elevated scores on the DQ for this group may be more indicative of development stage than of some form of addiction.

<div align="center">Counselor Survey</div>

This section outlines the limitations of the Counselor Survey, some of which parallel issues with the MMORPG survey.

Technical Limitations

Unlike the MMORPG Player Survey, the Counselor Survey did not suffer from any noticeable miscommunications with the counseling community. However, technical limitations hampered the return rate for this survey. These technical limitations included invalid email addresses, spam blocking technology, and the unanticipated release of a second email to potential participants by the marketing company managing the distribution the day after the initial post. This combination of factors limited the response rate to the Counselor Survey significantly. In addition, these same factors, combined with the relatively small pool of AMHCA members with email addresses (n=4,000), made a second email distribution at a later date unviable.

Given the difficulties of using a marketing company to distribute invitations for counselor participation in research, what alternatives are available? Some alternative methods of inviting counselors to participate in research might include:

- Counselor electronic mailing lists (i.e., listservs)

- Direct mailing

- Counselor forums

In each of the cases provided above, electronic data collection is still a viable option. Links to research websites can be provided via the postal service or any of the electronic services noted above, while avoiding the problems associated with using an established marketing company. Some organizations, such as the AMHCA, may be excluded from such research, as working through a marketing company is the only option provided by that organization.

Self-Selection

Self-selection bias may have led counselors with an interest in Internet addiction and MMORPGs to respond, whereas counselors with little experience or understanding of such issues may simply have chosen not to respond.

Memory

Second, counselors in the study provided survey data from memory. This may have resulted in over or under reporting of experiences with clients.

Sampling Method

Fourth, selection bias may have manifest itself in the manner in which counselors were invited to participate in the study. While the list of potential participants gathered from the AMHCA records was random, it was random within the population of counselors who hold an active membership in the AMHCA and who have email addresses. While most professionals use email today, a subset of counselors might have been excluded by using email as a primary contact tool.

Evaluation Apprehension

Fifth, counselors may have experienced a form of evaluation apprehension. Unlike MMORPG players who are comfortable in online settings, counselors may have been distrustful of participating in an online survey.

<div align="center">Recommendations for Future Research</div>

This study opens several possible venues for future research. Despite the moderate predictive value of loneliness and confidence for Internet addiction, significant gender differences were noted. The regression model was less powerful for males than

females. If Internet addiction is a compensatory means for individuals to meet needs, what other needs are males pursuing through MMORPGs that were not included in this study? Are these unaccounted for needs social in nature or are there other factors that may help explain Internet addiction, such as a need for achievement? A study expanding on the conceptualization of needs, perhaps using choice theory as a foundation, may highlight yet unexplored aspects of the Internet addiction experience.

A second area that warrants further exploration is the qualitative aspect to Internet addiction. Quantitative analysis of Internet addiction can provide a general picture of incidence rates and point to potential motivators for the addictive behavior. However, it cannot provide the depth and context of a qualitative assessment. Such a study would allow for greater perspective taking in the addictive process, and bring greater meaning to counselors seeking to understand this phenomenon.

Finally, further research needs to be done exploring the construct of addiction in reference to Internet use. If Internet "addiction" is meeting a fundamentally social need, are there better ways of conceptualizing the process? If not, how do we differentiate other forms of meeting social needs from an addictive process?

Conclusion

The purpose of this study was to examine Internet addiction in the context of MMORPGs. MMORPG players were deemed an appropriate population for this study due to the synchronous nature of MMORPGs and the body of literature indicating that Internet addicts commonly use online resources to build and maintain social networks (Kubey et al., 2001). MMORPG players were surveyed to determine incidence rates of

Internet addiction among MMORPG players, to determine if specific social needs

predicted Internet addiction, and to determine the degree to which MMORPG players

seek treatment for Internet addiction. Counselors were also surveyed, in order to provide

context to the findings from the MMORPG player survey. Specific areas of interest

among counselors included the ways in which counselors diagnose and treat Internet

addiction.

MMORPG players in this study were demographically similar to participants in

other MMORPG research. The majority of participants were younger males, while

approximately 16% of participants were older females. There was a mean age difference

of four years between adult male and female participants. Adolescents comprised only

14% of survey participants, and only two participants were adolescent females.

MMORPG players reported spending an average of 24 hours per week playing

MMORPGs, with an additional 11 hours per week in leisure, non-MMORPG online

activities. Counselor participants in this study were generally middle aged, Caucasian

mental health counselors working in private practice.

This study determined that Internet addiction does affect a significant number of

MMORPG players. Using Young's (1996) Diagnostic Questionnaire (DQ) criteria for

Internet addiction, 15.29% of survey participants met the criteria for Internet addiction.

An examination of the natural breaks in data distribution of the DQ indicated four logical

groupings for survey participants, including No Risk, Low Risk, Moderate Risk, and

High Risk for Internet addiction. Twenty-two percent of those surveyed met the criteria

for moderate or high risks of Internet addiction. Loneliness and online confidence were

found to be the two strongest predictors of Internet addiction for MMORPG players. Survey participants indicated a very low rate of treatment seeking behavior. Counselors confirmed the low incidence rate of treatment for MMORPG playing Internet addicts, noting that this group was the second least likely to receive treatment of all of the groups of Internet addicted clients defined by Young (2000).

Counselors were most likely to diagnose Internet addiction as depression, impulse control disorder, or obsessive compulsive disorder. Counselors tended to use the same theoretical approaches to treat Internet addiction as they used in general practice, with the exception of person centered therapy.

The findings from this study indicate that Internet addiction has a strong social foundation for MMORPG players. Internet addictive behaviors appear to be compensatory, meeting needs for companionship and empowerment in relationships. Attempts at meeting social needs through MMORPG appear to come at a cost. With the average MMORPG player spending 35 hours per week in leisure online activities, other aspects of life, such as school, work, and family, are likely to be affected in ways that may limit the long term development of MMORPG players. Moreover, Internet addicted MMORPG players appear less likely than other groups of Internet addicts to receive treatment for their condition. Further research should be done to provide clarity on the ranges of needs met through MMORPG game play and the extent to which such game play impacts individual lives. Finally, Internet addiction, as a construct, may require further consideration and potential revision to account for the compensatory nature of the phenomenon.

APPENDIX A

CONTACT SITES

Site	URL
SWG	
Allakhazam.com	http://swg.allakhazam.com/
Allakhazam.com Forum	http://swg.allakhazam.com/forum.html?forum=4
Hyperdrive	http://www.hyperdriveradio.com/
Hyperdrive Forum	http://www.hyperdriveradio.com/boards/
Starwars MMORPG	http://www.mmorpg.net/
Starwars MMORPG Forum	http://forums.mmorpg.net/index.php?c=9
SWG Center	http://www.swgcenter.com/
SWG Warcry	http://swg.warcry.com/
SWG Warcry Forum	http://forums2.warcry.com/forum.phtml?f=16
SWG Craft Forum	http://www.swgcraft.com/forum/index.php
Starwars Galaxies.net	http://swgalaxies.net
Star Wars Lore	http://www.starwarslore.com/
Star Wars Lore Forum	http://www.starwarslore.com/
Star Wars Galaxies Realm	http://swg.crgaming.com/
Star Wars Galaxies Stratics	http://swg.stratics.com/
Star Wars Galaxies Vault	http://swvault.ign.com
Star Wars Galaxies Vault Forum	http://vnboards.ign.com/SWG_General_Discussion/b5184/
Star Wars Galaxies Stratics Forum	http://boards.stratics.com/php-bin/swg/ubbthreads.php?Cat=2
UO	
UO Stratics	http://uo.stratics.com/
UO Stratics Forum	http://boards.stratics.com/php-bin/uo/ubbthreads.php?Cat=1
UO Ianstorm	http://www.ianstorm.com/Ultima/
UO Ianstorm Forum	http://www.ianstorm.com/ultima/forums/default.aspx?do=frm&id=2
Markee Dragon	http://www.markeedragon.com/uo.php
EQ	
Allakhazam.com	http://everquest.allakhazam.com/
Casters Realm	http://eq.crgaming.com/
EQInterface Forum	http://www.eqinterface.com/forums/index.php?
EQGaming Forum	http://www.eqgaming.com/modules.php?
EQ Stratics	http://eq.stratics.com/
EQ Stratics Forums	http://boards.stratics.com/php-bin/eq/ubbthreads.php?Cat=2
EQ Trader Forums	http://mboards.eqtraders.com/eq/
EQ Vault Forum	http://vnboards.ign.com/EverQuest_General/b5001/
Everlore	http://www.everlore.com
Planet EQ	http://www.planeteq.com/
Planet EQ Forum	http://www.forumplanet.com/planeteq/
Illia's EQ Bestiary	http://eqbeastiary.allakhazam.com/
DAOC	

DAOC Allakhazam	http://camelot.allakhazam.com/
DAOC Allakhazam Forum	http://camelot.allakhazam.com/forum.html?forum=13
DAOC Warcry	http://daoc.warcry.com/
DOAC Warcry Forum	http://forums2.warcry.com/forum.phtml?f=103
DAOC Vault	http://camelotvault.ign.com
DAOC Vault Forum	http://vnboards.ign.com/board.asp?brd=22179

Final Fantasy XI

FFXI Stratics	http://ffxi.stratics.com/
FFXI Stratics XI	http://boards.stratics.com/php-bin/ffxi/postlist.php?Cat=&Board=ffxigeneral
FFXI Vault	http://ffvault.ign.com/
FFXI Vault Forum	http://vnboards.ign.com/board.asp?brd=22412
FFO Warcry	http://ffo.warcry.com/
FFO Warcry Forum	http://forums2.warcry.com/forum.phtml?f=3
FFXI Allakhazam	http://ffxi.allakhazam.com/
FFXI Allakhazam Forum	http://ffxi.allakhazam.com/forum.html?cat=19&nosub=1

APPENDIX B

THREE-ITEM LONELINESS SCALE

1. How often do you feel you lack companionship?

2. How often do you feel left out?

3. How often do you feel isolated from others?

In its original form, the Three-Item Loneliness Scale rated responses to each item on a 1 to 3 point scale ("Hardly Ever"=1, "Some of the Time"=2,"Often"=3). The sum of each response was summed to provide an index ranging from 3 to 9 points, with higher scores indicating greater loneliness (Hughes et al., 2003).

APPENDIX C

INTERNET BEHAVIOR AND ATTITUDES SCALE

Confidence

1. Going online has made it easier for me to make friends

2. I am friendlier online than in real life

3. I sometimes go online to escape pressures

4. I open up more to people online than I do in other forms of communication

5. I have a network of friends made online

6. When I am online I feel totally absorbed

7. The anonymity of being online is liberating

Liberation

8. I have more fun with people I know online than elsewhere

9. I have pretended to be someone of the opposite sex while online

10. I am more myself online than in real life

11. Most of my friends I know from online

12. I have shared intimate secrets online

13. Sometimes I pretend to be someone I am not while online

14. I prefer communicating online to face-to-face communication

15. My online friends understand me better than other people

In its original form, the Internet Behaviors and Attitudes Scale rated responses to each item on a 1 to 4 point scale ("Strongly Agree"=4, "Agree"=3, "Disagree"=2, "Strongly Disagree"=1). The sum of each response was summed to provide an index ranging from 7 to 28 points for confidence and 8 to 32 points for liberation respectively. Higher scores indicated greater confidence and liberation in online settings (Morahan-Martin & Schumacher, 2000).

APPENDIX D

SOCIAL SUPPORT INDEX

Validation

1. I don't feel that I belong to anything I'd call a community

2. My behavior has some impact on other people in my community

3. I feel like I'm an important part of my community

4. Recently, how close do you think you have been to members of your family?

5. How often do you discuss personal problems with other family members?

6. How often do you ask advice from other family members?

Support

7. How often do you ask advice from your friends?

8. How often do other family members ask for advice from you?

9. How often do you discuss your personal problems with others you work with or go to school with?

10. How often do you ask advice from others you work with or go to school with?

11. How often do others you work with or go to school with ask advice from you?

12. In general, how many hours do you spend with your friends each week?

13. In general, how many hours do you spend with other you work with or go to school with OUTSIDE of school or work?

In its original form, the Social Support Index rated responses to items 1 through 11 on a 1 to 5 point scale ("Almost Always"=5 to "Never"=1). The sum of each response was summed to provide an index ranging from 6 to 30 points for validation and 5 to 25 points for support respectively. Items 12 and 13 were left as open-ended items that were added to the support total. Higher total scores indicated greater validation and support (Weiser, 2001).

APPENDIX E

DIAGNOSTIC QUESTIONNAIRE

1. Do you feel preoccupied with the internet?

2. Do you feel the need to use the net with increasing amounts of time to achieve satisfaction?

3. Have you repeatedly made unsuccessful efforts to control, cut back or stop net use?

4. Do you feel restless, moody, depressed or irritable when attempting to cut down or stop net use?

5. Do you stay on line longer than intended?

6. Have you jeopardized or risked the loss of a significant relationship job, educational or career opportunity because of the net?

7. Have you lied to family members or others to conceal your involvement with the net?

8. Do you use the net as a way of escaping from problems or of relieving moods (e.g. depression, anxiety guilt etc.)?

APPENDIX F

MMORPG SURVEY

Informed Consent Document

Project Title: **An Examination of Massively Multiplayer Online Role Playing Games as Facilitators of Internet Addiction**

Research Team:

Jeffrey Parsons, MS
Julie Andsager, PHD
Nicholas Colangelo, PHD
Amy Milsom, DEd
John Wadsworth, PHD

- If you are the parent/guardian of a child under 18 years old who is being invited to be in this study, the word "you" in this document refers to your child.
- If you are a teenager reading this document because you are being invited to be in this study, the word "you" in this document refers to you

WHAT IS THE PURPOSE OF THIS STUDY?

This is a research study. We are inviting you to participate in this research study because of your interest in online role playing games. In recent years, MMORPGs have become increasingly popular. With this increasing popularity have come reports of excessive MMORPG gaming.

The purpose of this survey is to determine what social needs lead to excessive MMORPG gaming. I ask that you read this document and ask any questions you may have before agreeing to participate in this study. Questions may be directed to jeffrey-parsons@uiowa.edu. Persons under 18 years of age should get their parents' permission before agreeing to participate in the study.

HOW MANY PEOPLE WILL PARTICIPATE?

We anticipate approximately 500 individuals participating in this study.

HOW LONG WILL I BE IN THIS STUDY?

If you agree to take part in this study, your involvement will last for approximately 5-10 minutes. The survey is 53 items in length.

WHAT WILL HAPPEN DURING THIS STUDY?

If you agree to participate in this research study, you will complete the online questionnaire found at the conclusion of this consent form. The questionnaire will take approximately 5-10 minutes to complete. The MMORPG Player Survey asks questions about your MMORPG playing interests, social interests and needs, potential excessive Internet use, and general demographic information such as your age, gender, hours of work, level of education, income, marital status, number of children, and the nature of the place where you live. As you complete the survey, you will hit the "Continue to Next Section" button at the bottom of each page. You may back up to a previous section of the survey by hitting the "Back to Previous Section" button. You may also skip any questions that make you do not wish to answer, and may exit the survey at any time. Survey data is not collected until you hit the "Submit" button at the end of the survey. At the completion of the survey you will receive confirmation that your survey has been received, and information on when and where to find the overall results of this survey.

The survey will collect the IP address of the computer where you completed the survey.

WHAT ARE THE RISKS OF THIS STUDY?

There may be some risks from being in this study. This inventory will require you to carefully consider your social needs and MMORPG use. This may cause personal discomfort as a result of introspection. You may skip any questions you do not wish to answer and may discontinue the survey by closing your browser at any time. While the results of the study are anonymous, researchers and others involved in the project will read your responses.

WHAT ARE THE BENEFITS OF THIS STUDY?

We don't know if you benefit from being in this study. However, we hope that in the future society may benefit from this study by gaining a greater understanding of the relationship between social needs and MMORPG use.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY?

You will not have any costs for being in this study.

WILL I BE PAID FOR PARTICIPATING?

You will not be paid for being in this research study.

WHO IS FUNDING THIS STUDY?

The University of Iowa and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research.

WHAT ABOUT CONFIDENTIALITY?

We will keep your participation in this research study confidential to the extent permitted by law. No personally identifiable information will be requested of you for participating in this study (such as your name or email address). However, the survey will automatically collect your Internet protocol address. The IP address will be used to ensure there is no duplication of data in the survey, and will not be distributed for any purpose outside of this study. We will not use the IP address to try to identify you. However, it is possible that other people may view your survey submission. For example, federal government regulatory agencies and the University of Iowa Institutional Review Board (a committee that reviews and approves research studies) may inspect and copy records pertaining to this research.

To help protect your confidentiality, we will limit access of all research records to those on the research team, to government agencies, and to the University of Iowa Institutional Review Board. All individual survey data pertaining to this study will be destroyed after seven years.

If we write a report or article about this study or share the study data set with others, we will do so in such a way that you cannot be directly identified.

IS BEING IN THIS STUDY VOLUNTARY?

Taking part in this research study is completely voluntary. You may choose not to take part at all. If you decide to be in this study, you may stop participating at any time up until the point you hit the submit button at the end of the survey. Due to the anonymous nature of this study, it will be impossible to tie survey to specific individuals.

WHAT IF I HAVE QUESTIONS?

We encourage you to ask questions. If you have any questions about the research study itself, please contact: We encourage you to ask questions. If you have questions about the research study itself, please contact:

Jeffrey Parsons
210 Lindsey Wilson Street
Columbia, Kentucky 42728
jeffrey-parsons@uiowa.edu

This study is being conducted under the supervision of Dr. Nicholas Colangelo, who may be contacted at the Belin and Blank Center, The University of Iowa, Iowa City, IA

52242 or nick-colangelo@uiowa.edu.

If you have questions about the rights of research subjects or research related injury, please contact the Human Subjects Office, 300 College of Medicine Administration Building, The University of Iowa, Iowa City, Iowa, 52242, (319) 335-6564, or e-mail irb@uiowa.edu. General information about being a research subject can be found by clicking "Info for Public" on the Human Subjects Office web site, http://research.uiowa.edu/hso.

STATEMENT OF CONSENT

I have read the above information. I may print out this document for my records. By submitting this online survey I am consenting the researcher to use this information for research purposes as described above.

For persons under 18 years old: I have discussed my participation with my parents and they have agreed to my participation in this research study.

MMORPG Use

1. How many hours per week do you play online role playing games?

_____

2. How many hours per week do you spend on the Internet in activities that are

NOT related to work, school, or online role playing games?

_____

3. How long have you had Internet access?

- Unsure
- One Year or less
- Two Years
- Three Years
- Four years or More

4. What type of Internet access do you have?

- Unsure
- Dial Up
- DSL
- Cable Modem
- Satellite

Social Needs

Please answer the following questions in regards to your relationships outside of

online role playing games.

5. How often do you feel you lack companionship?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

6. How often do you feel left out?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

7. How often do you feel isolated from others?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

8. How often do you discuss personal problems with other family members?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

9. How often do you ask advice from other family members?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

10. How often do other family members ask for advice from you?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

11. How often do you ask advice from your friends?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

12. How often do you discuss personal problems with others you work with or go

to school with?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

13. How often do you ask advice from others you work with or go to school with?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

14. How often do others you work with or go to school with ask advice from you?

- Almost Always
- Often
- Sometimes
- Not Very Often
- Practically Never

15. Recently, how close (interpersonally, not geographically) do you think you

have been to members of your family?

- Very Close
- Close
- Neither Close nor Not Close
- Not Close
- Not Close at All

16. In general, how many hours do you spend with your friends each week?

_____

17. In general how many hours do you spend with others you work with or go to school with OUTSIDE of school and work?

_____

Please respond to the followings statements as they relate to your community outside of online role playing games.

18. I don't feel that I belong to anything I would call a community

- Completely Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Completely Disagree

19. My behavior has some impact on other people in my community

- Completely Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Completely Disagree

20. I feel like I'm an important part of my community

- Completely Agree
- Agree

- Neither Agree nor Disagree
- Disagree
- Completely Disagree

Please respond to the followings statements as they relate to your relationships

within online role playing games.

21. Going online has made it easier for me to make friends

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

22. I am friendlier online than in real life

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

23. I sometimes go online to escape pressures

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

24. I open up more to people online than I do in other forms of communication

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree

- Strongly Disagree

25. I have a network of friends made online

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

26. When I am online, I am totally absorbed

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

27. The anonymity of being online is liberating

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

28. I have more fun with people I know online than elsewhere

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

29. I have pretended to be someone of the opposite sex while online

- Strongly Agree

- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

30. I am more myself online than in real life

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

31. Most of my friends I know from online

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

32. I have shared intimate secrets online

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

33. Sometimes I pretend to be someone I am not while online

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

34. I prefer communicating online to face-to-face communication

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

35. My online friends understand me better than other people

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

Internet Dependence

Please answer the following questions in regards to your Internet use.

36. Do you feel preoccupied with the Internet?

- Yes
- No

37. Do you feel the need to use the net with increasing amounts of time to achieve

satisfaction?

- Yes
- No

38. Have you repeatedly made unsuccessful efforts to control, cut back, or stop

net use?

- Yes
- No

39. Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop net use?

- Yes
- No

40. Do you stay online longer than intended?

- Yes
- No

41. Have you jeopardized or risked the loss of a significant relationship, job, educational or career opportunity because of the net?

- Yes
- No

42. Have you lied to family members or others to conceal your involvement with the net?

- Yes
- No

43. Do you use the net as a way of escaping from problems or relieving moods (eg depression, anxiety, guilt)?

- Yes
- No

44. Have you ever sought professional help to decrease the amount of time you spend on the Internet?

- Yes

- No

Demographic Information

Please indicate your demographic status.

45. Gender

- Male
- Female

46. Age

_____

47. Hours of work per week

_____

48. Education

- Junior High School
- High School
- Associates Degree
- Bachelors Degree
- Masters Degree
- Doctoral Degree

49. Income

- <25,000
- 25,000-39,999
- 40,000-59,999
- 60,000+

50. Relational Status

- Single
- Married
- Divorced
- Partnered

51. Children

- None
- 1
- 2
- 3
- 4
- 5
- 6+

52. Which of the following best describes the area in which you live?

- Rural (<2000)
- Rural (2000-10,000)
- Small Town (11,000-20,000)
- Mid-size Town (21,000-60,000)
- City (61,000-120,000)
- Metropolis (120,000+)

53. Please indicate your country of origin.

- Australia
- Canada
- China
- France
- Germany
- Great Britain
- Korea
- Spain
- Taiwan
- United States
- Other

54. If Other, please Indicate:_____

APPENDIX G

COUNSELOR SURVEY

INFORMED CONSENT DOCUMENT

Project Title: **An Examination of Massively Multiplayer Online Role Playing**

Games as Facilitators of Internet Addiction

Research Team: Jeffrey Parsons, MS

                      Julie Andsager, PHD

                      Nicholas Colangelo, PHD

                      Amy Milsom, DEd

                      John Wadsworth, PHD

WHAT IS THE PURPOSE OF THIS STUDY?

This is a research study. We are inviting you to participate in this research study because of your status as a mental health counselor. In recent years, research has indicated a significant level of problematic Internet use or Internet addiction. This survey examines counselor experiences (or lack of experience) with Internet addicted clients. I ask that you read this document and ask any questions you may have before agreeing to participate in this study. Questions may be forwarded to parsonsj@lindsey.edu.

HOW MANY PEOPLE WILL PARTICIPATE?

We anticipate approximately 200 counselors participating in this study.

HOW LONG WILL I BE IN THIS STUDY?

If you agree to take part in this study, your involvement will last for approximately 5 minutes. The survey is 23 items in length.

WHAT WILL HAPPEN IN THIS STUDY?

If you agree to participate in this research study, you will be asked complete the online questionnaire found at the conclusion of this consent form. The questionnaire will take

approximately 5 minutes to complete. The Counselor Survey asks questions about your professional background and your experiences treating clients with problematic levels of Internet use. As you complete the survey, you will hit the "Next Section" button at the bottom of each page. You may skip any questions that you do not wish to answer. At the bottom of the final section (demographics) you will hit the "Submit" button to submit your survey. At the completion of the survey you will recieve confirmation that your survey has been recieved, and detailed information on when and where to find follow up information on the research results from this study. The survey will collect the IP address of the computer where you completed the survey.

WHAT ARE THE RISKS OF THIS STUDY?

There are no anticipated risks from being in this study. This inventory will require you to recall your experiences as a counselor. This may cause personal discomfort as a result of introspection. You may skip any questions you do not wish to answer for any reason. While the results of the study are anonymous, researchers and others involved in the project will read your responses.

WHAT ARE THE BENEFITS OF THIS STUDY?

There will be no personal benefit for participating in this study. However, it is hoped that in the future society may benefit from this study by gaining a greater understanding of the phenomena of Internet addiction.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY?

You will not have any costs for being in this study.

WILL I BE PAID FOR PARTICIPATING?

You will not be paid for participating in this study.

WHO IS FUNDING THIS STUDY?

The University of Iowa and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research.

WHAT ABOUT CONFIDENTIALITY?

We will keep your participation in this research study confidential to the extent permitted by law. No personally identifiable information will be requested of you for participating in this study (such as your name or email address). However, the survey will automatically collect your Internet protocol address. The IP address will be used to ensure there is no duplication of data in the survey, will not be distributed for any purpose outside of research. We will not use the IP address to try to identify you. However, it is possible that other people may become aware of your participation in this study. For example, federal government regulatory agencies and the University of Iowa Institutional Review Board (a committee that reviews and approves research studies) may inspect and copy records pertaining to this research.

To help protect your confidentiality, we will limit access of all research records to those on the research team, to government agencies, and to the University of Iowa Institutional Review Board. All individual survey data pertaining to this study will be destroyed after seven years.

If we write a report or article about this study or share the study data set with others, we will do so in such a way that you cannot be directly identified.

IS BEING IN THIS STUDY VOLUNTARY?

Taking part in this research study is completely voluntary. You may choose not to take part at all. If you decide to be in this study, you may stop participating at any time up until the point you hit the submit button at the end of the survey. Due to the anonymous nature of this study, it will be impossible to tie survey to specific individuals.

WHAT IF I HAVE QUESTIONS?

We encourage you to ask questions. If you have any questions about the research study itself, please contact: We encourage you to ask questions. If you have questions about the research study itself, please contact:

Jeffrey Parsons
210 Lindsey Wilson Street
Columbia, Kentucky 42728
parsonsj@lindsey.edu

This study is being conducted under the supervision of Dr. Nicholas Colangelo, who may be contacted at the Belin and Blank Center, The University of Iowa, Iowa City, IA 52242 or nick-colangelo@uiowa.edu.

If you have questions about the rights of research subjects or research related injury, please contact the Human Subjects Office, 300 College of Medicine Administration Building, The University of Iowa, Iowa City, Iowa, 52242, (319) 335-6564, or e-mail irb@uiowa.edu. General information about being a research subject can be found by clicking "Info for Public" on the Human Subjects Office web site, http://research.uiowa.edu/hso.

STATEMENT OF CONSENT

I have read the above information. I may print out this document for my records. By submitting this online survey I am consenting the researcher to use this information for research purposes as described above.

Demographic Information

1. What is your age?

    _____

2. What is your gender?

   • Male
   • Female
   • Choose Not to Respond

3. What is your ethnicity?

   • Caucasian
   • African American
   • Asian American
   • Native American
   • Hispanic/Latino
   • Other
   • Choose Not to Respond

Professional Background

4. On average, how many clients do you see each week?

    _____

5. How many years of experience do you have working with clients?

    _____

6. Which of the following best describes the area in which you practice?

   • Rural (<2000)
   • Rural (2,000-10,000)
   • Small Town (11,000-20,000)
   • Mid-size Town (21,000-60,000)
   • City (61,000-120,000)
   • Metropolis (120,000+)

7. Which of the following best describes your employment setting?

- Private Practice
- Agency
- K-12 School Counseling
- Community College Counseling
- College/University Counseling
- Psychiatric Treatment Center
- Other _____

8. What is your highest level of professional training?

- None
- Associate Degree
- Bachelor Degree
- Masters Degree
- Doctoral Degree

9. Which of the following best describes your degree type?

- Counselor Education
- Counseling Psychology
- Marriage and Family
- School Counseling
- Rehabilitation Counseling
- Mental Health Counseling
- Masters in Social Work
- Other _____

10. What is your primary theoretical orientation? (Select all that apply)

- ? Unsure
- ? Psychoanalytic
- ? Gestalt
- ? Existential
- ? Person Centered
- ? Adlerian
- ? Reality
- ? Solution Focused
- ? Family Systems

? Cognitive/Behavioral
? Feminist
? Narrative
? Other _____

11. Which of the following best describe the issues you generally face when

treating clients? (Select all that apply)

? Depression
? Anxiety
? Adjustment Disorders
? Relational Difficulties
? Marriage/Couples
? Phobias
? Substance Abuse/Dependence
? Grief/Loss
? Rehabilitation
? Career Guidance
? Academic Advising
? Personality Disorders
? Other _____

Clinical Experiences

Please read the following criteria for Internet addiction.

An individual is considered addicted to the Internet if they meet five of the following eight criteria:

- Preoccupation with the Internet
- Needs increasing amounts of time on the Internet to achieve satisfaction
- Has made repeated unsuccessful efforts to control, cut back or stop net use
- Feels restless, moody, depressed or irritable when attempting to cut down or stop Internet use
- Stays online longer than intended
- Has jeopardized or risked the loss of a significant relationship job, educational or career opportunity because of the net?
- Has lied to family members or others to conceal your involvement with the net
- Uses the Internet as a way of escaping from problems or of relieving moods (e.g. depression, anxiety guilt etc…)

Using the criteria provided above as a working definition of Internet addiction, please respond to the following statements about your experiences with clients.

12. In the past year, how many clients have you sent that meet the criteria for Internet addiction?

_____

13. I have seen an increase in the number of clients I have seen who are Internet addicts (when comparing this year to last year)

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

How often do you see clients engaging in the following activities related to excessive or addictive Internet use?

14. Online role playing games, MUDs, online gaming

- Very Often
- Often
- Sometimes
- Rarely
- Never

15. Pornography, virtual sex, online affairs

- Very Often
- Often
- Sometimes
- Rarely
- Never

16. Instant messaging, chat rooms, email

- Very Often
- Often
- Sometimes
- Rarely
- Never

17. Online gambling, shopping, stock trading

- Very Often
- Often
- Sometimes
- Rarely
- Never

18. Web browsing, information searching

- Very Often
- Often
- Sometimes
- Rarely

- Never

Please respond to the following items, specifically as they relate to clients you have seen who engaged in <u>excessive amounts of online role play gaming</u>. Examples of online role play gaming include Everquest, Ultima Online, Star Wars Galaxies, and other virtual gaming worlds.

19. Of the clients you have seen in the past year who met the criteria for Internet addiction, how many manifest excessive behaviors with online role playing games?

20. There is no formally recognized DSM-IV category for Internet addiction or excessive online role play gaming. Please select from the following diagnostic categories those diagnoses that you have used for describing excessive online role playing game behavior, based on your own clinical experience with the phenomena. Check all that apply.

- ? Anxiety Disorder
- ? Impulse Control Disorder
- ? Obsessive-Compulsive Disorder
- ? Adjustment Disorder
- ? Relational Problem NOS
- ? Depression
- ? Other _____
- ? Not Applicable

21. Select the therapeutic approach(es) you have found to be most successful when working with excessive online role play gaming (Select al that apply):

- ? Unsure
- ? Psychoanalytic
- ? Gestalt
- ? Existential
- ? Person Centered
- ? Adlerian
- ? Reality Therapy
- ? Solution Focused
- ? Family Systems
- ? Transactional Analysis

? Cognitive/Behavioral
? Feminist
? Narrative
? Group Therapy
? Online Counseling
? Other _____
? Not Applicable

22. In general, the Internet addicts I have treated for excessive online role play

gaming were self-referrals

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

23. In general, clients I have seen for excessive online role play gaming recovered

with treatment

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

24. In general, clients I have seen had to completely discontinue online role

playing games in order to recover from excessive online role playing games

- Strongly Agree
- Agree
- Neither Agree Nor Disagree
- Disagree
- Strongly Disagree

APPENDIX H

COMMON CLIENT ISSUES

Table H1. Common Client Issues

Orientation	Frequency	Percent
Depression	74	91.4
Anxiety	68	84
Adjustment Disorders	56	69.1
Relationship Difficulties	51	63
Substance Abuse	40	49.4
Grief/Loss	38	46.9
Marriage/Couples	18	22.2
Phobias	18	22.2
Career	7	8.6
Rehabilitation	7	8.6
Academic Advising	2	2.5
Compulsive Gambling	2	2.5
Eating Disorders	2	2.5
Schizophrenia	2	2.5
Trauma	2	2.5
ADHD	1	1.3
Adoption	1	1.3
Behavioral Disorders	1	1.3

Table H1 -Continued

Child Abuse	1	1.3
Children's Behavioral Health	1	1.3
Domestic Violence	1	1.3
EAP	1	1.3
Family Abuse	1	1.3
Family Coping Strategies	1	1.3
Learning Issues	1	1.3
Parenting Issues	1	1.3
PTSD	1	1.3
Sexual Problems	1	1.3
Stress Management	1	1.3

APPENDIX I

GENERAL THEORETICAL ORIENTATION

Table I1. General Theoretical Orientation

Orientation	Frequency	Percent
Cognitive	56	69.1
Person Centered	31	38.3
Solution Focused	24	29.6
Family Systems	21	25.9
Reality	19	23.5
Gestalt	8	9.9
Existential	7	8.6
Adlerian	7	8.6
Psychoanalytic	6	7.4
Jungian	3	3.8
Feminist	2	2.5
Eclectic	2	2.5
Narrative	2	2.5
Biopsychosocial	1	1.3
Developmental	1	1.3
Empathic Attachment	1	1.3
Object Relations	1	1.3
Psychodynamic	1	1.3

APPENDIX J

INTERNET ADDICTION RISK FACTORS

Table J1. Internet Addiction Risk Factors

Adult Status	Risk Level	Frequency	Percent	Cumulative Percent
Male Participants				
Adolescent	No Risk	7	9.9	9.9
	Low Risk	43	60.6	70.4
	Moderate Risk	10	14.1	84.5
	High Risk	11	15.5	100
	Total	71	100	
Adult	No Risk	67	18.8	18.8
	Low Risk	210	58.8	77.6
	Moderate Risk	46	12.9	90.5
	High Risk	34	9.5	100
	Total	357	100	
Female Participants				
Adolescent	Low Risk	1	50	50
	Moderate Risk	1	50	100
	Total	2	100	
Adult	No Risk	16	19.5	19.5
	Low Risk	52	63.4	82.9
	Moderate Risk	11	13.4	96.3

Table J1-Continued

		Count	Percent	
	High Risk	3	3.7	100
	Total	82	100	

<div align="center">Gender Not Specified</div>

Adult	No Risk	1	100	100
	Total	1	100	

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