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A Web of Distortion: How Internet Use is Related to Cognitive Distortion, Personality Traits, and Relationship Dissatisfaction

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A WEB OF DISTORTION: HOW INTERNET USE IS RELATED TO COGNITIVE

DISTORTION, PERSONALITY TRAITS, AND RELATIONSHIP DISSATISFACTION

By Alexandra Morris, M.A.

Submitted in Partial Fulfillment of the Requirements of the Degree of

Doctor of Psychology

March 2011

PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by _Alexandra Morris_

on the _29_ day of _3_____, 20_11_, in partial fulfillment of the

requirements for the degree of Doctor of Psychology, has been examined and is

acceptable in both scholarship and literary quality.

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Acknowledgements

I would like to extend my sincerest appreciation to my committee members who have gone above and beyond in helping me through, not only this dissertation process, but also my professional development in clinical psychology.

Dr. Brad Rosenfield's high expectations, ongoing support, and mentorship have challenged me to be better in research and in clinical practice. His help and guidance transformed my budding hypothesis into an incredible research project of which I am extremely proud. I will always be grateful to him for showing me the way.

Many thanks to Dr. Stephen Poteau, his insights and statistical prowess have proven to be invaluable. Without his help, I would have been lost.

I am thankful to Dr. Stephanie Felgoise for joining this project when I hit a snag in the road and helping to achieve my lofty dissertation goals. Without her statistical planning and guidance, I would have never completed on time**.**

Dr. Virginia Salzer**'**s early contributions to the project and ongoing support throughout the program gave me incredible momentum on my journey to completion. To say thank you is not nearly enough.

I would also like to thank Dr. Bruce Zahn for his mentorship, ongoing support in my professional development, and giving me the motivation I needed to complete this project expediently.

I would also like to extend my abundant gratitude to my parents for their eternal support and commitment to higher education. I am grateful to my mother, Felicia Zawatski Morris, for putting just enough cracks in the glass ceiling so that I was able to achieve my dreams. Your commitment to women, children, and the underserved is an example that I will follow all the

days of my life. If I can help half of the people you have, I will be a success. To my father, Dr.

Thomas J. Morris, you taught me not only what it means to be a champion, but also the

importance of infusing humor into therapy and life. You cultivated my love of psychopathology

and passion for healing. Both of you have taught me to have unbridled faith and determination

even against the most staggering odds, for that I will always be grateful.

Great appreciation and love is extended to Joseph Saba. Without his blind and

unwavering support in my abilities, this project, and more importantly, my doctorate, would have

never come to fruition. His friendship has been transformative and has helped me to become

exactly the person that I was meant to be. I have become a better person for knowing you. Thank

you is grossly inadequate.

Special thanks to Drs. Oliver John, Susan Hendrick, Carrie Yurica, and Robert

DiTomasso. Without their kindness and generosity, this project would have never gotten off the

ground. Their commitment to student research is what generates progress in the field, and helped

this lowly grad student fulfill her wildest ambitions.

From preschool to doctorate, I get by with a little help from my friends, Mark Paddock

and Gina Volpicelli, who know me fully and love me anyway. I would also like to thank my

brother, Thomas P. Morris, for his humor and uncanny ability to keep my humility in check.

Finally, this research is dedicated to the irreverent Zawatski women, who never had the

opportunity to get into the race, let alone, cross the finish line.

Abstract

Internet use is a growing trend among every segment of the population. There are many positive aspects of internet use, such as increased information sharing, communication, business opportunities, and education. However, excessive internet usage has been shown to have a number of deleterious effects on individuals, families, and relationships. Pathological internet use is a growing concern that can have numerous negative outcomes. This study has demonstrated the fact that specific types of internet use were associated with cognitive distortion, personality traits, and relationship satisfaction. Moreover, the number of hours of internet use by type was related to average, weekly, total number of hours of internet use. A difference was also found between users and nonusers of internet pornography. The findings from this study can be used to further develop screening instruments, inform clinical practice, and improve treatment guidelines so that individuals with pathological internet use can be identified and treated.

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I was taught that the way of progress is neither swift nor easy.

--Marie Curie

Chapter 1: Introduction

Statement of the Problem

Internet use has become an increasingly popular pastime since the inception of the World Wide Web in the late 1980's. Approximately 69.7% or over 250 million people in the United States now use the internet (Internet World Stats, 2009). In the past several years, the accessibility of high speed internet connections in US homes has allowed for a rapid increase in faster internet transmissions. This access has enabled many individuals to spend significant time on internet activities such as "Googling" or searching for information, chatting, social networking, blogging, and conducting various other online activities, in addition to becoming involved in potentially more problematic activities, such as, gaming, gambling, and viewing pornography.

Research over the past decade has shown that too much internet use of certain types such as viewing pornography, gambling, and gaming can be associated with marital discord, interpersonal dysfunction, reduced work productivity, reduced quality of life, academic failure, physical complaints, excessive debt and other negative outcomes (O'Reilly, 1996; Young, 1998; Simkova & Cubcera, 2004). Excessive, pathological internet use has resulted in significant dysfunction in the lives of many individuals.

For individuals with pathological internet use, Young (1998) found dysfunction in five different realms: academic, occupational, financial, social, and physical. However, there has been no investigation into the relationships between the type of internet use and cognitive distortion, personality traits, and relationship dissatisfaction. Despite the potential, serious and pervasive problems attendant on pathological internet use, it is rarely assessed in intake evaluation or diagnostic interviews (Liu & Potenza, 2007), such as times when the SCID-I (First,

Spitzer, Gibbon, & Williams, 1997), MMPI-II (Butcher, Dahlstrom, Graham, Tellegen, &

Kaemmer, 1989), and MCMI-III (Millon, Davis, Millon, & Grossman, 2009) are used.

Another issue is that there has been no consensus among the psychological community

about a time when internet use becomes pathological, what the threshold is, and a time when it

qualifies as a primary disorder or a comorbid disorder. There is also a great deal of disagreement

about whether or not pathological internet use results in a separate disorder, or if individuals with

psychopathology are more inclined to engage in unhealthy internet behaviors, symptomatic of a

current disorder. Hopefully the DSM-V, which is scheduled to be released in 2012, will contain

explicit criteria addressing pathological internet symptomatology.

Many pathological behaviors have been linked to cognitive distortions; however, there

has been limited investigation into the role that distortions play in pathological internet use. The

majority of the cognitive distortion literature has been conducted by Aaron Beck, the founder of

cognitive behavioral therapy and the first to identify errors in thinking and associated

dysfunction (Beck, 1963; 1964). The errors in thinking or the content of these maladaptive

thoughts that were observed by Beck became known as cognitive distortions (Yurica &

DiTomasso, 2005). Beck identified several cognitive distortions that can occur on a regular

basis; these include: magnification and minimization, dichotomous thinking, personalization,

arbitrary inference, selective abstraction, and overgeneralization (Beck, 1963, 1964, 1967; Beck,

Rush, Shaw, & Emery, 1979; Yurica & DiTomasso, 2005).

It has been shown that cognitive distortions correlate with emotional disorders (Beck,

1963, 1964, 1976, 1987, 1988; Freeman, Pretzer, Fleming, & Simon, 1990; DiTomasso, Martin,

& Kovnat, 2000; Freeman & Fusco, 2000; Rosenfield, 2004; Yurica & DiTomasso, 2005).

Much of the literature concerned with cognitive distortions is studied in the context of cognitive

behavioral therapy (CBT). The focus of CBT is to challenge distorted or maladaptive thoughts, schema, and core beliefs and to replace these with reality based cognitions (Rupke, Blecke, & Renfrow, 2006). The client is also encouraged to alter maladaptive behavior patterns by changing behaviors and developing coping skills (Rupke, Blecke, & Renfrow, 2006). Identifying and altering automatic thoughts, mood monitoring, behavior activation, and social support are recommended as essential components to the treatment (Rupke, Blecke, & Renfrow, 2006).

Distortions in thinking have been examined in depression (Beck, 1964), schizophrenia (Beck & Rector, 2005), personality disorders (Beck, Freeman, & Davis, 1990), anger (Beck, 1999), hostility (Beck, 1999), violence (Beck, 1999), eating disorders (McIntosh et. al., 2005), interpersonal difficulties (Beck, 1988), substance abuse (Beck, Wright, Newman, & Liese, 1993), somatic complaints and medical disorders (Beck, 1997), bipolar disorder (Lam, McCrone, Wright & Kerr, 2005), panic disorder (Beck, 1987), anxiety disorders and phobias (Beck, Emery, & Greenberg, 1985), and suicide (Beck, Resnik, & Lettieri, 1974), psychological disorders across diagnostic axes (Rosenfield, 2004), medical patients (Uhl, 2007), and the development of the Inventory of Cognitive Distortions (ICD) (Yurica, 2002). Research has not been conducted on the relationship between internet use, cognitive distortions, and associated personality traits.

Rosenfield (2004) investigated the relationship between cognitive distortions and psychological disorders across diagnostic axes, specifically personality disorders. However, there has been limited research conducted on the relationship between personality traits and pathological internet use but the findings have been contradictory, which allows this study to bridge the gap between those two areas and contribute to the body of literature. Costa & McCrae (1992) developed the five-factor model of personality traits which divides the traits into five

dimensions including, Extraversion, Agreeableness, Neuroticism, Conscientiousness, and

Openness to Experience. The structure of both normal and pathological personality traits is

illustrated by this dimensional approach (Costa & McCrae, 1992). Under each broad dimension

specific personality traits are classified, forming a hierarchical model (Costa & McCrae, 1992).

For example, specific personality traits such as hostility, anger, anxiety, self-consciousness,

impulsivity, and vulnerability would be subsumed by the broad trait dimension entitled

Neuroticism (Costa & McCrae, 1992). Extreme degrees of these personality traits can be seen as

personality disorders (Costa & Widiger, 1994). Moreover, research has demonstrated that

dimensions of personality traits are related to personality disorders (Costa & McCrae, 1990).

O'Connor & Dyce (2001) illustrated the distinction between individuals manifesting severe

versus less severe personality traits in a geometric representation presented Figure 1.

Figure 1. Illustration of Interpersonal Dimensions
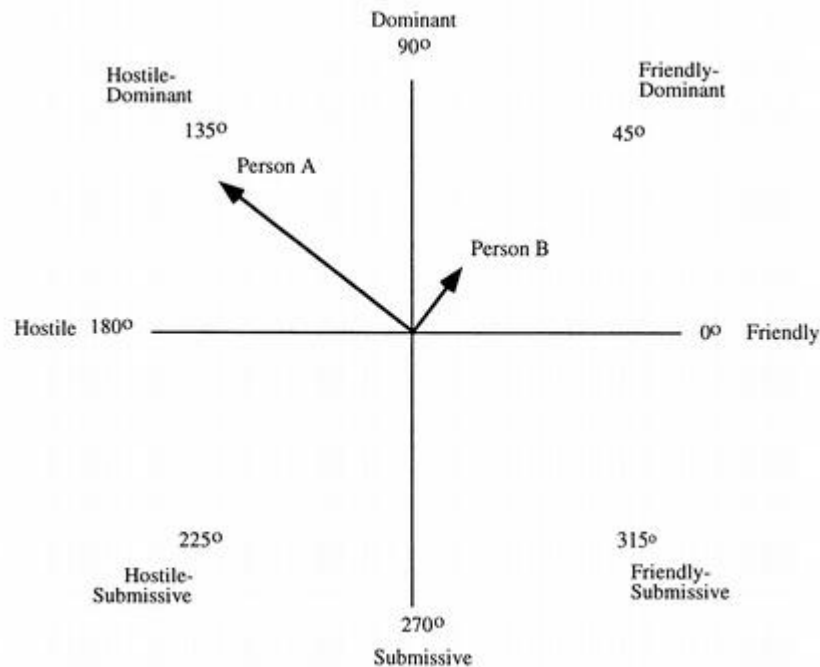
Note. The vector length for Person A is significantly greater than the vector length for Person B: this illustrates the fact that Person A is closer to severe personality traits than is Person B in the five factor model dimensional space. This representation reinforces the variability in degrees of severity in the manifestation of personality traits. Source: O'Connor, B. P, & Dyce, J. A. (2001). Rigid and extreme: A geometric representation of Personality Disorders in five-factor model space. *Journal of Personality and Social Psychology, 81,* 1119-1130.

Pathological behavior, such as pornography use, has been researched extensively and has been shown to result in adverse consequences such as trivialization of rape, increased callousness towards women, increased desire for more deviant types of pornography, devaluation of monogamous relationships, devaluation of marriage, decreased interest in having children, and decreased satisfaction with a partner's physical appearance, sexual performance, and level of affect (Zillman & Bryant, 1982, 1984, 1988a, 1988b).

Research investigating the effects of online pornography has shown increased social isolation, career losses, decreased job performances, financial difficulties, sexual difficulties, and negative relationship effects (Schneider, 2000). A literature review revealed limited investigation into a possible relationship between other aspects of internet use such as online gambling, social networking, gaming, blogging, searching, and chatting and relationship satisfaction. This study is needed to address those gaps in the literature.

Purpose of the Study

The purpose of the present study is to examine how various types of internet use are related to cognitive distortions, personality traits, and relationship dissatisfaction. It is proposed that as levels of internet use increase, cognitive distortions, severity of personality traits, and relationship dissatisfaction will also increase. It is also hypothesized that the type of internet use

will be related to the amount of cognitive distortion, severity and type of personality traits, and relationship dissatisfaction. Specifically, different types of internet use will be related to different levels of cognitive distortion, personality traits, and relationship dissatisfaction.

The findings from the present study may alert clinicians to underlying psychopathology or personality traits associated with overuse of certain internet modalities. This type of investigation can help to identify the existing threshold for excessive or pathological use. The relationship dissatisfaction associated with pathological internet use also will be highlighted in this research. Finally, this study can help to inform direct treatment planning if, in fact, pathological use is correlated with underlying or related psychopathology, such as cognitive distortions.

Alignment with Program Goals

The study aligns with the goals of the psychology program because it is addressing a gap in the literature on internet usage, cognitive distortions, personality traits, and relationship satisfaction. The study investigates an area in psychology that is not only a growing trend, but also a concern for society that will affect individuals throughout the "connected" world. Additionally, the study is based on Aaron Beck's proposed cognitive behavioral model which serves as the theoretical orientation of the program. The findings will have global implications for members of virtually all cultures and strata of society where access to the internet is available.

Chapter 2: Literature Review

In the United States nearly 69.7% of the population or approximately 250 million people use the internet **(**Internet World Stats, 2009)**.** The accessibility of broadband connection which allows for faster internet connection has increased in the last decade, allowing more users than ever before to be online. Since the early 1990's, there has been a substantial amount of research conducted on the effects of technologies on individuals, specifically, the implications of excessive use of the internet (Nichols & Nicki, 2004). Many in the field acknowledge that there is a substantial problem with internet addiction, but there is a great deal of disagreement among academics on an appropriate diagnostic label. Widyanto & Griffiths (2006) refer to an assortment of different appellations being used in attempts to describe the sample phenomena, such as "Pathological Internet Use," "Internet Addiction Disorder (IAD)", "Problematic Internet Use," "Excessive Internet Use," and "Compulsive Internet Use." The title varies greatly depending on the researcher, study, and article; therefore, for the purpose of this study and review of the literature, these labels will be used throughout and should be considered synonymously.

According to Shapira et al. (2003), the following criteria must be met to diagnose IAD:

1. Maladaptive preoccupation with internet use, as indicated by at least one of the following.

    A. Preoccupations with the use of the internet that are experienced as irresistible.

    B. Excessive use of the internet for periods of time longer than planned.

2. The use of the internet or the preoccupation with its use causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

3. The excessive internet use does not occur exclusively during periods of hypomania or mania and is not better accounted for by other Axis I disorders. (p. 213)

It appears that the most salient aspect of this proposed criterion is that the excessive internet use is not a symptom or a manifestation of a previously diagnosed disorder, but seemingly a separate condition (Shapira et al., 2003). This criteria was formulated from the criteria for impulse control disorders as identified in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revised (DSM-IV-TR) (American Psychiatric Association, 1994).

According to Greenfield (1999), criteria for internet addiction was met by 6% of a surveyed sample. A large portion of the research has uncovered behavioral and psychological correlates associated with problematic internet use. Specifically, depression, social isolation, low self-esteem, anxiety, shyness, and lack of social and emotional skills have been shown to be associated with excessive internet use (Young & Rogers, 1998; Morahan-Martin & Schumacher, 2000; Whang et al. 2003; Engelberg & Sjoberg, 2004; Caplan, 2005; Chou et al. 2005; Kim et al. 2006). Nevertheless, excessive internet use has been associated with positive correlates as well, such as enhanced well-being and self-esteem (Valkenburg, Peter, & Schouten, 2006), social networks, social support, self-confidence, social abilities, and relationships (Campbell et al., 2006).

Increased unstructured time, unlimited internet access, and schedule flexibility, attendant to college life are some factors that enable college students to be at high risk for internet addiction (Chak & Leung, 2004). Addiction to the internet in this population may also be fueled by social isolation and lack of social support (Young, 1996). Characteristics of problematic internet behavior include: not acknowledging problematic internet behavior, depression, anxiety, emptiness, and other negative feelings when not engaging in the behavior, and increased time and importance placed on internet related activities (Kandell, 1998). A decline in academic performance is another negative outcome associated with problematic internet use (Kubey et al.,

2001; Niemz et al., 2005; Young, 1998). However, internet addiction or pathological internet use was detected in only a small sample in a study conducted on college students in Spain (Munoz-Rivas et al., 2003), contradicting the bulk of the literature that displays how a college population can be more susceptible (Chak & Leung, 2004).

Although a diagnostic definition of Internet Addiction was first proposed by Young (1996a, 1996b, 1998), there is still much debate about whether or not internet addiction is a new and separate disorder or a manifestation or symptom of previously identified psychological disorders (Morahan-Martin, 2005). Many in the psychological community support the inclusion of a new diagnostic label (Shapira et al., 2003), and some labels have been proposed for inclusion in the new edition of the DSM, including "Pathological Computer Use," "Computer/Internet Addiction," and "Cyberspace Addiction" (Sandoz, 2004).

The rationale for the proposal of this new addiction label to be entered into the Addictions category of the DSM is that pathological internet use can be correlated with some of the same dysfunctions in daily functioning and interpersonal relationships as other types of addictions such as substance dependence (Brenner, 1997; Bai et al., 2001; Beard & Wolf, 2001; Hall & Parsons, 2001), pathological gambling (Young, 1999), and compulsive buying (McElroy et al., 1994). Griffiths (2000, 2005) alludes to the fact that addiction may be a separate entity as opposed to a manifestation of one of the already widely accepted disorders because there are a number of similar characteristics such as tolerance, withdrawal, mood fluctuations, relapse, and conflict that are displayed in a variety of newly recognized addictions, such as shopping and sex. These characteristics are also seen in other less controversial addictions such as substance dependence and gambling, which may provide evidence for a common origin.

It has been proposed by some authors that pathological internet use, because it does not involve an intoxicant, would more appropriately be classified in the DSM as an impulse control disorder, similar to pathological gambling (Young, 1998; Shapira et al., 2003; Kaltiala-Heino et al., 2004). The DSM criteria for pathological gambling were adapted to create diagnostic criteria for pathological internet use (Jenaro, Flores, Gomez-Vela, Gonzalez-Gil, & Caballo, 2007). Shapira et al. (2003) and Young (1998) have found pathological internet use to be similar to other impulse control disorders, which are equally disabling, distressing, and prevalent. The label of "Problematic Internet Use" has been used, as opposed to "Internet Addiction" (Young, 1998). Despite a hypothesized self-regulation deficit being implicated in internet addiction (LaRose et al., 2001, 2003), an association between diminished impulse control or sensation seeking has not yet been significantly established by the empirical research (Amstrong et al., 2000). A dispute continues about whether or not the internet is a medium for an addiction, for example, as a means to allow one's addiction to manifest or as a causal factor (Griffiths, 2000). Griffiths (2000) believes that all technological addictions are addictions in their own right, because they satisfy the six criteria for addiction: mood modification, salience, withdrawal, tolerance, conflict and relapse.

There is a growing interest in assessing new addictions in the field; this has been a catalyst for the development of valid and reliable self-report measures (Boca & Brown, 1996). The Internet Addiction Scale (IAS) has been used to assess problematic internet use (Engelberg & Sjoberg, 2004). Griffiths (1998) developed the IAS self-report measure, which has a high degree of reliability (alpha = 0.95) and focuses on seven substance dependence criteria and two other criteria. Widyanto & McMurran (2004) created the Internet Addiction Test, which consists of six factors such as excessive use, salience, neglecting work, neglecting social life, lack of

control, and anticipation. This instrument is reliable and valid. Young (1996), the forerunner in

the field of internet addiction, was the first to develop criteria and assessment instruments for

pathological internet use, adapting criteria from the DSM-IV for pathological gambling to create

a brief screening tool. Young (1998) states that five or more criteria need to be met for a

diagnosis without the presence of a manic episode:

1. Do you feel preoccupied with the Internet (think about previous on-line activity or

   anticipate next on-line session)?

2. Do you feel the need to use the Internet with increasing amounts of time in order to

   achieve satisfaction?

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

   use?

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

   stop Internet use?

5. Do you stay on-line longer than originally intended?

6. Have you jeopardized or risked the loss of significant relationship, job, educational or

   career opportunity because of the Internet?

7. Have you lied to family members, therapist, or others to conceal the extent of

   involvement with the Internet?

8. Do you use the Internet as a way of escaping from problems or of relieving a

   dysphoric mood (e.g. feelings of helplessness, guilt, anxiety, depression)? (p. 238)

However, since this criteria was proposed, it has been asserted that the criteria included

behaviors that may have other origins and may not be solely accounted for by addiction (Shapira

et al., 2003); since then modifications have been made to this proposed criteria (Beard & Wolf,

2001). Subsequent studies (Treuer et al., 2001; Shapira et al., 2000) have supported the use of

impulse control disorder criteria. Therefore, this is the criteria that will be used to define

pathological internet use operationally in the current study. Shapira et al. (2000) defines

problematic internet use criteria as:

1. uncontrollable

2. markedly distressing, time consuming or resulting in social, occupational or financial

    difficulties

3. non-solely present during hypomanic or manic symptoms (p. 267)

These refined criteria will also allow for greater ease in assessment of participants.

Negative Outcomes Associated with Pathological Internet Use

There has been a great deal of research conducted over the last several decades,

documenting significant negative outcomes, dysfunction, and problems associated with

pathological internet use; these indicate significant impacts on the lives of individuals, on

interpersonal relationships, families, and communities. There are severe negative consequences

of internet addiction such as cravings and withdrawal, social isolation, job termination, academic

failure, marital discord, and loss of control (O'Reilly, 1996).   The negative influence on daily

living is readily apparent in individuals diagnosed with IAD (Simkova & Cinera, 2004).

Decreased productivity, disrupted family life, and reduced educational performance are

additional negative outcomes that have been noted, as well as shifts in attitude towards the world

(Soule, Shell, & Kleen, 2003; Young, 1996).

Five categories or realms of dysfunction such as financial, social, physical, and academic

were researched by Young (1996).   In one study that examined approximately 600 respondents,

items related to internet-associated problems in daily life, for example, missed sleep, missed

meals, and failure to manage time were endorsed by 80% of participants (Brenner, 1997). In

addition, items seen more frequently as the result of other addictions such as social isolation and

trouble with employers were also endorsed by some of the participants, indicating a more serious

degree of dysfunction associated with internet use (Brenner, 1997).

In addition to occupational dysfunction, the effects of pathological internet use on

students, specifically college students, has been documented and shown to impair functioning in

college (Young, 1998). For students struggling with this issue, the internet takes precedence over

their studies, and instead of engaging in academic activities during their free time, they find it

easier to play online computer games, chat, email, engage in online forums, and view news and

popular culture webpages, and engage in a variety of other online activities (Young, 1998).

Both college students and nonstudents can become so immersed in their online worlds

that their interpersonal relationships in real life deteriorate and fall away, but they may not have

insight into this shift (Young, 1998). In addition, a lack of motivation may devolve into neglect

of their daily responsibilities and activities (Young, 1998). There is also the potential for it to

become a distraction at work, which can reduce productivity and increase procrastination.

Young (1996, 1998) uncovered the fact that many participants had financial difficulties because

they allocated more financial resources to internet-related purchases.

Internet use has affected academic work, professional performance, and social lives

according to 13% of college age participants, and an additional 2% reported that the internet has

had an overall negative effect on daily functioning (Scherer, 1997). Another study that has been

heavily cited in the literature as crucial to internet research demonstrated how excessive internet

use in a sample of both college students and nonstudents is associated with significant

dysfunction in aspects of family, occupation, and personal life, which parallels those experienced

by individuals with other types of addiction, such as substance abuse or gambling (Young, 1998, 1999).

For both student and nonstudent populations, symptoms such as physical complaints, time distortion, fatigue and disruption of sleep patterns was among the most noteworthy problems (Young, 1996, 1998). Fatigue, lack of sleep, poor eating and lack of exercise can be physical markers that can characterize IAD (Young, 1996, 1998). Another particularly salient aspect uncovered by Young (1998) is that excessive internet use in college students may result in severe academic problems, poor grades, which can culminate in probation, or in extreme cases, expulsion from college. The negative social implications seem to have the greatest consequences including isolation, withdrawal, and denial (Young, 1998). These findings are crucial because college populations are especially susceptible to falling into maladaptive patterns regarding internet use because of the lack of supervision, of unstructured time (Young, 1998), and of immature frontal cortex development until late adolescence (Yurgelun-Todd, 2007). In personal or family realms, financial difficulties, marital problems, and interpersonal problems with intimate partners, friends, co-workers, and family members have also been shown to be associated with excessive internet use (Young, 1998).

Not surprisingly, internet addicts reported more negative consequences in their daily lives and studies than did nonaddicts in a study in which Taiwan college students were examined using a self-assessment of their Internet use and daily functioning by Chou and Hsiao (2000). Surprisingly, internet addicts and nonaddicts showed no difference in how they viewed the impact of the internet on their interpersonal relationships with friends, family, and teachers, and these types of relationships were actually rated highly by both groups of students (Chou & Hsiao, 2000).

A similar study showed that the students reported that their social or peer relationships were enhanced by the internet; however, it had the opposite effect on their school performance and daily living (Lin & Tsai, 1999). Thus the social aspect of the internet such as providing opportunities for ongoing communication, the opportunities to meet new people, and the opportunities to share interests in a variety of topics is beneficial despite the downside of difficulty with appropriate time management (Chou & Hsias, 2000).

The aforementioned studies have demonstrated that excessive internet use can have a variety of significant negative effects that can disrupt daily functioning and impact interpersonal relationships. College students appear to be a group of particular concern because of the time disruption and neglect of academic studies. However, these findings should not discount the potential positive benefit, which is the social and communication aspect of the internet.

Negative Effects of Pornography

Over the last several decades, research has shown that online pornography is the most virulent form of internet use. According to Delmonico, Griffin, and Moriatry (2001), the internet is a powerful and distinct medium because it is inexpensive, isolating, and intoxicating. In the past, to obtain pornography one had to go to the local adult sex shop, which was an obstacle for children and adolescents and for adults, concerned about their reputations. This also enables internet pornography to be particularly toxic in comparison with other types of pornography, because it is also provides anonymity, affordability, and accessibility (Cooper, 1998). These characteristics may be the reasons why the use of pornography has increased exponentially in the last decade (Cooper, Boies, Maheu, & Greenfield, 1999). According to pornography statistics compiled by *Family Safe Media* (2010), the monthly average of new viewers to adult websites rose from 18.75 million in 2001 to 75.00 million in 2005. The internet has attracted, or more

appropriately, has seduced many individuals already experiencing pre-existing problems with

pornography in other mediums (Cooper, Boies, Maheu, & Greenfield, 1999). It has also

attracted many budding pornography viewers that may have not been able to gain exposure due

to societal expectations, laws, self-presentation, and concern about criticism, but because of the

accessibility and anonymity have been drawn in as regular viewers. This can be especially

characteristic of an adolescent population (Cooper, Boies, Maheu, & Greenfield, 1999).

With the advent of the internet and the proliferation of pornography therein, children,

adolescents, and adults no longer have to leave their homes to access these stimuli. This

anonymity removes the shame, embarrassment, and stigma attached to being seen at an

establishment associated with such societal approbation and what is viewed mainly, in polite

company, as perversity. Additionally, on the internet, there is the possibility of inadvertently

accessing pornographic material simply by clicking the wrong link or icon (Media Awareness

Network, 2010). Some websites have taken advantage of this and are using common

misspellings in search terms to reroute individuals to erotic websites (Media Awareness

Network, 2010).

The majority of the research over the last several decades has focused mainly on the

effect of pornography on males (Malamuth, 1996; Philaretou, Mahfouz, & Allen, 2005).

According to Allen, D'Alessio, & Brezgel (1995), there has been a lack of consensus within the

scientific community regarding the effects of pornography (Doring, 2009); however, the bulk of

the research and literature displays negative outcomes and correlates (Philaretou, Mahfouz, &

Allen, 2005). It should be noted that the bulk of the research in this area is correlational.

Two early researchers of the effects of pornography were Zillman and Bryant (1984,

1988). These authors determined that repeated exposure to even typical nonviolent pornography

was associated with a trivialization of rape as a criminal offense, callousness towards women, increased desire for deviant types of pornography (addiction and escalation), distorted perceptions about sexuality, decreased satisfaction with partner's sexual performance, appearance, and perceived level of affection, devaluation of monogamous relationships, devaluation of marriage, and decreased interest in having children (Zillman & Bryant, 1984, 1988).

There have been numerous subsequent meta-analyses that further lend support to these findings and illuminate the devastating effects that pornography can have on the individual and the implications for their relationships (Allen, Emmers, Gebhardt, & Giery, 1995; Oddone-Paolucci, Genuis, and Violato, 2000; Allen, D'Alessio, and Brezgel, 1995; Philaretou, Mahfouz, & Allen, 2005). This body of evidence was further supported by a review that focused on men's well-being, specifically in terms of depression, anxiety, and relational problems (Philaretou, Mahfouz, & Allen, 2005).

Oddone-Paolucci, Genuis, and Violato (2000) conducted a meta-analysis of 46 separate studies including a combined total of 12,323 participants. Results indicated that exposure to pornography was associated with increased risk of sexually deviant behaviors defined as "nonnormative sexual behaviors such as early age of first intercourse, excessive or ritualistic masturbation," intimate relationship difficulties, increased sexual offenses, and accepting the rape myth (e.g. women cause rape) (Oddone-Paolucci, Genuis, and Violato, 2000). However, in a study of undergraduates, the personality trait, psychopathy, was found to be a more significant predictor of deviant sexual behavior than pornography consumption alone (Williams, Cooper, Howell, Yuille, & Paulhus, 2009).

Another meta-analysis of 2,040 female and male participants in 33 studies examined aggression and pornography consumption (Allen, D'Alessio, and Brezgel, 1995). The studies included various pornographic mediums such as pictures, videotape, film, and text (Allen, D'Alessio, and Brezgel, 1995). There was a small correlation found between pornography and behavioral aggression; the strongest correlation was associated with violent pornography (Allen, D'Alessio, and Brezgel, 1995).

In contrast, Malamuth, Addison, and Koss (2000) examined the relationship between pornography viewing and sexual aggression. They studied 2,972 males with a mean age of 21, as well as integrated findings from several meta-analyses that examined sexual aggression and exposure to pornography into their conclusions. A reliable association was found with sexually aggressive behavior and pornography consumption. This correlation was stronger when participants viewed violent pornography and especially when the viewer was a male and was already predisposed to sexual aggression (Malamuth, Addison, & Koss, 2000).

In addition, a meta-analysis of 24 studies with 4,268 participants was conducted examining the myth of rape acceptance (Allen, Emmers, Gebhardt, & Giery, 1995). The myth of rape acceptance is a belief that both men and women hold about rape, specifically that women who are raped deserve it or are at fault (Allen, Emmers, Gebhardt, & Giery, 1995). Both men and women holding this belief may be less likely to convict a rapist when serving on a jury (Allen, Emmers, Gebhardt, & Giery, 1995). Moreover, women who hold this belief may underreport rape or fail to support victims (Allen, Emmers, Gebhardt, & Giery, 1995). A consistent positive correlation was found between violent pornography and rape myth acceptance, as well as nonviolent pornography and rape myth acceptance (Allen, Emmers, Gebhardt, & Giery, 1995). Allen, Emmers, Gebhardt, & Giery (1995) argued that "experimental demand" may be one

explanation for the reason why experimental studies produced a larger effect than the nonexperimental studies.

Moreover, an association between acceptance of rape myths and pornography was demonstrated by three other meta-analyses (Kim & Hunter, 1993a, 1993b; Sheppard, Hartwick, & Warshaw, 1998), which lends additional support to the findings by the previous meta-analyses. Rape myth acceptance was greater for violent pornography, when compared with nonviolent pornography (Allen, Emmers, Gebhardt, & Giery, 1995). For the non-experimental studies in the meta-analysis that used self-report data, nearly no rape myth acceptance effect was shown; however, this study used self-report data, which can be unreliable and outcomes of actual behavior were not included (Allen, Emmers, Gebhardt, & Giery, 1995).

Therefore, extensive research over the last several decades in the area of pornography research has supported several robust and disturbing findings: A significant number of meta-analyses further support the conclusion that pornography has significant and damaging effects on individuals and their interpersonal functioning, specifically in the areas focused on sexual deviance, behavioral and sexual aggression, intimate relationship difficulties, sexual perpetration, and rape myth acceptance.

Effects of Pornography on Relationships

Over the last several decades, pornography has been shown to have virulent effects on individual viewers; however, during the last decade, research has focused on the effects of pornography on relationships, marriages, and families. Bridges, Bergner, & Hesson-McInnis (2003) studied 100 nonclinical adults with a partner who consumed internet pornography and found that internet pornography viewing has been perceived by some women as threats to their

relationships. Interestingly, women in non-marital relationships seem to be less affected, when

compared with married women (Bridges, Bergner, & Hesson-McInnis, 2003).

Bridges, Bergner, & Hesson-McInnis (2003) determined that as the perceived level of the

partner's internet pornography viewing increased so did the distress of the female partner. This

research illustrates how pornography does significantly affect, not only the individual, but also

the individual's partner, which can have deleterious effects on their relationship, such as sexual

dysfunction, lack of trust, lack of intimacy, feelings of betrayal, relationship dissatisfaction, and

problems with communication (Bridges, Bergner, & Hesson-McInnis, 2003).

In a qualitative study, Schneider (2000a) administered an online cybersex survey that she

had created, to 94 couples seeking therapy for a partner's internet addiction and determined that

cybersex addiction significantly affected the couples' relationships and was a main factor

contributing to divorce and separation. However, it is significant to note that of the 94 responses,

91 were given by women and 3 by men, and the average number of years married was 12.6

(Schneider, 2000a). The age range of the participants was 24 to 57 (Schneider, 2000a). In

60.6% of the cases, cybersex, defined as "any form of sexual expression that is accessed through

the computer" (Schneider, 2000b, p. 250), was the extent of the sexual activity reported aside

from sex with a partner; however, 31% of participants reported that cybersex was a continuation

of other compulsive sexual behaviors, such as sex with prostitutes, meeting new partners offline,

phone sex, voyeurism, and pornography (Schneider, 2000a). The participants that were included

in this study were recruited through 20 therapists treating sex addicts (Schneider, 2000a).

Nevertheless, there may be a distinction between a sex addict and an individual that views online

pornography (Schneider, 2000a). Sexual addiction and use of pornography may be separate

categories, but not mutually exclusive ones. In other words, sexual addiction includes

characteristics that may have contributed to the destruction of these marriages; that is not necessarily characteristic of all internet pornography viewers. This distinction was not included in this study, but is noteworthy.

Effects of Pornography on Sexual Satisfaction and Intimacy

Before the internet pornography boom, Zillman & Bryant (1988a) examined the impact of typical nonviolent pornography on 160 male and female participants. The study was conducted in weekly, one hour sessions over a six week period. The participants were placed in one of two groups; the first was exposed to pornography, and the other was exposed to innocuous nonpornographic content. Both groups then rated the relative importance of gratifying experiences, as well as personal happiness in regard to various domains of experience after the exposure (Zillman & Bryant, 1988a).

Self-assessment of sexual experience was shown to be negatively impacted by exposure to pornography; however, other aspects of life domains such as professional satisfaction were not (Zillman & Bryant, 1988a). The participants reported that they were less satisfied with their intimate partners' physical appearances, sexual performances, sexual curiosity, and levels of affection after viewing pornography (Zillman & Bryant, 1988a).

Moreover, the research showed that sexual relations without emotional involvement had increased importance for participants after exposure to pornography (Zillman & Bryant, 1988a). Surprisingly, both male and female participants experienced the same effects (Zillman & Bryant, 1988a). Zillman & Bryant (1988) were the first to demonstrate how pornography directly impacts sexual dissatisfaction. It should be noted that other forms of media that have also been shown to affect physical dissatisfaction; these include commercials, advertisements, and magazines (Lin & Reid, 2009)**.** Current research on internet pornography supports these findings.

Bergner & Bridges (2002) conducted a qualitative study that analyzed 100 letters posted on 4 online message boards by individuals (spouses, girlfriends, fiancées) affected by their partners' excessive internet pornography consumption; these indicated how satisfaction and sexual desire are affected by one partner's consumption of pornography. The study included only the female partner's perception of her male partner's pornography viewing (Bergner & Bridges, 2002). Female partners reported a decrease in sexual desire due to the male partner's use of pornography (Bergner & Bridges, 2002). Additionally, the majority of the women explained how they felt their partner had objectified them during sexual relations rather than having an intimate and meaningful relationship since becoming immersed in pornography (Bergner & Bridges, 2002).

In a study of participants who viewed pornography but did not meet criteria for a sexual addiction, Schneider (2000a) uncovered results similar to those in the study conducted by Zillman and Bryant (1988a) that revealed decreased sexual satisfaction. Ninety-four participants with cybersex addictions, as well as participants in various degrees of committed relationships were surveyed and adverse effects were uncovered in the sexual relationships of individuals who engage in compulsive cybersex (Schneider, 2000a). Sexual problems, such as decreased sexual intimacy, were experienced by 68% of the participants (Schneider, 2000a). The negative sexual relationship effects were found to coincide with the start of pornography consumption, so these findings would not be exclusive to cybersex addicts, but also could be generalized to all pornography consumers (Schneider, 2000a).

Moreover, Schneider (2000a) found decreased interest in sexual activities in both partners in 18% of relationships. It was also surprising that approximately one-third of the intimate partners *not* involved in consuming pornography lost interest in sex, as well as 52% of the

participants engaging in cybersexual activities (Schneider, 2000a). The lack of interest among partners not involved in viewing pornography may stem from repulsion to those who do.

Additionally, partners perceived themselves to be unable to compete with online pornography and the porn stars who engage in sexual behaviors in which average women were willing to participate. When comparing themselves with porn stars, the partners of cybersexual addicts feel inadequate, sexually rejected, angry, hurt, and unable to compete (Schneider, 2000a). Frequently, cybersex users made excuses to avoid sexual intimacy with their actual partner (Schneider, 2000a).

Additionally, there is decreased quality to the sexual interaction, such as the cybersex user being interested in only their pleasure, emotional distance, or objectification (Schneider, 2000a). In an attempt to decrease the cybersex use of their partners or to get their sexual needs met, female partners initiated the majority of the sexual activity (Schneider, 2000a). Partner repulsion and disinterest in sex was less of an issue for the cybersex users who had already replaced partner sexual intimacy with online sexual activities (Schneider, 2000a). The sexual relationship dysfunction is often blamed on the nonpornography consuming partners (Schneider, 2000a). Bergner & Bridges (2002) has shown how decreased sexual intimacy is a common symptom for female partners in a relationship with an individual who is a heavy consumer of pornography.

According to Cooper, Galbreath, & Becker (2004), two important subgroups of men with online sexual problems that were severe enough to impact a committed partner were uncovered; these included, "men who use the internet (a) to further their real-time sex lives and (b) as a substitute for their real-time sex lives" (p. 223). It was found that men who used the internet for educational purposes and to meet other partners in order to have offline sexual relationships

actually had an increase in sexual activity with their original partners (Cooper, Galbreath, & Becker, 2004). Men had significantly more problems in their interpersonal relationships and complaints from others when they used online sexual activity as a means to combat stress (Cooper, Galbreath, & Becker, 2004). Of the 384 male participants, 60% were in a committed relationship, the majority of which fell into the subgroup experiencing significant interpersonal dysfunction due to their internet sexual activity (Cooper, Galbreath, & Becker, 2004). Forty-three percent of the population studied used the internet to engage in sexual activities that they would not do in real life (Cooper, Galbreath, & Becker, 2004). This clearly demonstrates the differential effects of cyber pornography versus other online activities, including those culminating in actual sexual contact, albeit, outside of the committed relationship.

This finding is fairly alarming in the context of the research by Schneider (2000) and lends further support to the conclusion that women whose sexual partners engage in online pornography consumption feel pressured to engage in sexual behaviors that they find objectionable, and this conflict affects their relationships with their partners. Increased masturbation was noted in the subgroup of men that used the internet to combat stress, which illustrates how these men are turning away from their partners and using internet pornography as a maladaptive coping strategy (Cooper, Galbreath, & Becker, 2004). These studies have established how internet pornography can negatively impact intimate relationships.

Oddone-Paolucci, Genuis, and Violato (2000) found a plethora of significant negative outcomes associated with exposure to pornography, which is supported by a previous meta-analysis (Allen, D'Alessio, & Brezgel, 1995) and numerous single studies (Barak, Fisher, Belfry, Lashambe, 1999; Lam & Chan, 2007; Zillman, 2000). The studies occured from 1962 to 1995, most of which were conducted in the United States. The most significant negative outcomes for

pornography exposure that were identified included sexual perpetration, intimate relationships, rape myth, and sexual deviancy (Oddone-Paolucci, Genuis, and Violato, 2000).

Exposure to pornography may reinforce and condone aggression, sexual deviance or nonmainstream sexual behaviors, instant gratification, and objectification of women, which could then carry over into the viewer's interactions, behaviors, attitudes, and treatment of real women (Oddone-Paolucci, Genuis, and Violato, 2000). The line between fantasy and reality can become obscured for consumers of pornography; they may see pornographic depictions of sexual behaviors as the standard, norm or typical performance and then expect those behaviors from women in real sexual encounters (Oddone-Paolucci, Genuis, and Violato, 2000).

Moreover, according to Oddone-Paolucci, Genuis, and Violato (2000), it is as though pornography becomes their default schema that is activated during any potential sexual encounters or in scenarios that may typically lead to sexual encounters (Oddone-Paolucci, Genuis, and Violato, 2000). Pornography is no longer seen as fantasy, but as reality. Socially inacceptable or undesirable behaviors may result from individuals who follow these erroneous and misguided expectations (Oddone-Paolucci, Genuis, and Violato, 2000). Although there can be multiple facets that account for dysfunctional sexual behavior and attitudes, exposure to pornography is a significant and common factor which can contribute to the manifestation of this sexual dysfunction (Oddone-Paolucci, Genuis, and Violato, 2000).

An individual becomes increasingly at-risk for committing sexual offenses, for developing sexually deviant behaviors, accepting the rape myth, and for intimate relationship difficulties when exposed to pornography; this has been explicitly shown by decades of research (Oddone-Paolucci, Genuis, and Violato, 2000). It is imperative that the years of research and solid evidence displaying the virulent nature of pornography are acknowledged, and steps are

taken to ensure that individuals, especially adolescents, are not damaged by this material; this would have far reaching societal implications for interpersonal and intimate relationships (Oddone-Paolucci, Genuis, and Violato, 2000).

However, not all evidence supports these negative effects of pornography. For example, Barak, Fisher, Belfry, and Lashambe (1999) conducted two studies, utilizing self-reports to investigate whether or not exposure to pornography in a population of male college students affected their acceptance of the rape myth, attitudes towards women and likelihood of sexually harassing a woman. They found no effects of pornography on these variables (Barak, Fisher, Belfry, & Lashambe, 1999).

In addition, these same authors conducted another study using a separate sample of college males (Barak, Fisher, Belfry, & Lashambe, 1999). The second study investigated the effects of individual differences such as past experiences with sexually explicit material, hypermasculinity, erotophobia-erotophilia, and sensation seeking on internet pornography self-regulation when participants were allowed to view as much pornography as they wished (Barak, Fisher, Belfry, & Lashambe, 1999). It was found that individual differences were correlated to the amount of self-regulated exposure to pornography and misogynistic attitudes; however, the amount of exposure to internet pornography in general was not correlated to misogynistic attitudes (Barak, Fisher, Belfry, & Lashambe, 1999). Therefore, the findings suggest that individual differences are the most salient variable in the relationship to misogynistic attitudes and not the amount of exposure to pornography. The proposed study will further investigate if personality traits can account for individual differences in self-regulated exposure to pornography.

Social Networking Websites

In recent years, there has been an emergence of a new web-based technology called

social networking websites that seem to have taken the internet by storm. In 2009,

approximately 17% of all time spent on the internet by users has been related to social

networking sites (Neilson, 2009). Because of the popularity of these sites, research has

significantly increased in this niche area of the internet. Social networking sites are virtual

spaces that can be accessed free of charge, merely by going to a website and registering. They

allow for communication, community building, expression of self, marketing, and exchanging

ideas. Most often, the online social interactions on these networking sites involve pre-

established, offline relationships, meaning that individuals first establish friendships offline and

then continue them in the online social networking realm (Pempek, Yermolayeva, & Calvert,

(2009). However, many individuals use these types of sites to meet new people. Given the fact

that a great deal of personal information has the potential to be broadcast into cyberspace,

individuals that frequent these sites have shown greater risk-taking attitudes, with men taking

more risks than women (Fogel & Nehamd, 2009).

The most popular of these social networking sites are MySpace and Facebook, although

others, such as Friendster, have made appearances over the last several years, but seemed to

fizzle under the dominance of Facebook and MySpace. Facebook has also been viewed as more

trustworthy than MySpace by users (Fogel & Neham, 2009). Originally made popular by

adolescents and college students, Facebook and MySpace have now grown to include all age

groups including adults and even geriatric populations. Subrahmanyam, Reich, Waechter, &

Espinoza (2008) demonstrated that adult use of these social networking sites can display

different patterns than their use by adolescents. Adult use focuses primarily on strengthening

offline relationships (Subrahmanyam, Reich, Waechter, & Espinoza, 2008). According to

DiMicco, Millen, Geyer, Dugan, Brownholtz, & Muller (2008), employers and employees use

this medium to facilitate communication among colleagues, enrich interpersonal relationships,

network, promote projects, and lobby for advancement.

As of January 2009, MySpace had approximately 810 million viewers and Facebook had

approximately 1.2 billion viewers per month (Social Media Optimization, 2009) with 50% of

those viewers logging on each day (Facebook, 2010). The main purpose of these sites is for

communication and connection, which happens via a multitude of online features. For example,

users of social networking sites have the ability to post information about themselves and any

other information they wish to be made known on their personal profile page, post pictures,

message others via a function that works similar to email, instant message, provide hyperlinks to

other information on the web, post messages to profiles and pictures of other users, and engage

in group forums. The vast array of different means of communication allows users great

flexibility in exchanging information and in communicating.

Despite the popularity of the sites, the bulk of the research is sparse when compared with

other aspects of the internet, especially the impact of these sites on the user, on interpersonal

relationships, families, and communities. One study by Valkenburg, Peter, & Schouten (2006) on

adolescents did assess the impact of Facebook and MySpace on wellbeing and self-esteem. This

study demonstrated an indirect relationship between adolescent self-esteem and well-being (e.g.,

satisfaction with life), and the amount of time an adolescent spent on the site (Valkenburg, Peter,

& Schouten, 2006). Specifically, increased time spent on the social networking site increased

the likelihood that the adolescent would receive positive feedback about his or her profile

information via wallposts and messages, which correlated to enhanced subjective report of well-

being and self-esteem. Conversely, the amount of negative feedback was correlated with

decreased self-esteem and wellbeing.

However, more research needs to be conducted on the impact that these sites have on the

user, on personality characteristics of the user, and on implications of behavior. One longitudinal

study conducted by Steinfield, Ellison, and Lampe (2008) demonstrates how individuals with

low self-esteem may reap greater benefits from social networking sites than individuals with

high self-esteem because it enables them to enhance their social networks and social capital. In

another study, personality traits were not significantly influential in Facebook use despite some

trends toward Extraversion and Openness to Experience according to the five-factor model

(Ross, Orr, Sisic, Arseneault, Simmering, & Orr, 2009; Kramer & Winter, 2008). However,

greater activity on social networking sites has been correlated with degrees of Narcissism in one

study of undergraduates conducted by Buffardi & Campbell (2008). The nature of the structure

and function of social networking sites may cultivate Narcissistic personality traits and also

provide the perfect medium through which they can manifest. In addition, the immediate

feedback that is available to the user and the positive reinforcement that a user receives in the

form of comments, tagged photos, messages, online gifts, and "Like" endorsements may

reinforce and proliferate this behavior.

Another type of social networking that is gaining popularity is online dating. Online

dating sites operate in ways similar to sites such as MySpace and Facebook, but are designed

specifically for dating and obtaining sexual partners (Lawson & Leck, 2006). A qualitative study

of 25 male and 25 female internet daters found that there were a multitude of reasons for

participation in the dating sites: romantic fantasy, comfort after a life crisis, control over their

environments and self-presentation, companionship, adventure, and freedom from stereotypic

roles or commitment (Lawson & Leck, 2006). There were both positive and negative outcomes

for the participants in the study (Lawson & Leck, 2006). Some found relationships and

marriage, but others suffered rejection and loss (Lawson & Leck, 2006). This form of dating

allows men to be more open and women to behave more assertively; however, traditional gender

roles seem to prevail. For example, the man will ask the woman out on a date. Despite the

novelty of this new dating medium, the same concerns that daters have surrounding themes of

trust, rejection, and self-presentation unfortunately abound. Nevertheless, many online daters

can be successful in finding romance, comfort, and companionship in their online dating

experiences (Lawson & Leck, 2006).

Intuitively, this contrasts with opinions in the field that there are certain types of people

that would be drawn to social networking sites. This discrepancy is the reason why more

research is needed in this area. Sheldon (2008) found individuals that engaged in good social

communication offline were more likely to engage in communication with others via Facebook

online. This finding provides evidence that contradicts the hypothesis implying that individuals

with poor communication skills would be more likely to engage in online relationships as a

means to dissipate their social anxieties. In addition, more general investigation needs to be

conducted on the reasons why these sites are so popular, on the need they are filling for the

individual, and how that will impact society at large. There is also a need to uncover the

personality characteristics of individuals drawn to these sites; how these sites impact their

ongoing offline interpersonal relationships, and the degree of cognitive distortion these

individuals possess.

Computer Mediated Communication

Since the advent of the personal computer and internet, computer mediated communication (CMC) has changed the way individuals communicate. CMC allows users to communicate instantaneously, simultaneously with multiple users, at relatively low costs, and potentially, around the world (Kiesler, Siegel, & McGuire, 1984). The multiple ways in which people communicate are included in this category; these involve emailing, chatting via chatrooms, instant messaging, webcam, teleconference, Skype, message boards, and posting on discussion forums and running discussion threads. New ways of communicating via the internet are constantly emerging. There is a great deal of contradictory literature about whether or not these forms of communication have positive effects (Shaw & Gant, 2002; Hamburger & Ben-Artzi, 2000; LaRose et al., 2001) on the lives and well-being of individuals and society at large or whether or not they have negative effects (Hu, 2009).

The early research is contradictory. One experimental study found that online chatting increased mood loneliness compared with face-to-face interactions, and exponentially increased loneliness in individuals that rated highly in trait loneliness (Hu, 2009); however, a similar study found that chatting to decreased loneliness, depression, and increased self-esteem and perceived social support (Shaw & Gant). Another study found that increased social support was associated with internet communication, especially with email (LaRose et al., 2001).

Another concern with this form of communication is whether or not emotion is able to be conveyed appropriately in contrast to face-to-face communication. In a review of the literature, Derks, Fischer, & Bos (2008) have concluded that emotion is not only similar in both mediums, but also that emotion is actually more explicitly demonstrated in CMC. One aspect of this issue

that researchers can agree on is that these means of communication, pervasive in global society, are here to stay.

Blogging

Blogs, much like traditional written journals or diaries, are personal accounts of an individual's life or these accounts can be focused on a specific topic. Blogs can be written by one individual or several. Most blogs have a feature that allows readers to post comments. Because blogging is a relatively new online activity, there is a dearth of literature on this specific topic. The research that is available demonstrates the positive and beneficial effects of blogging (Baker & Moore, 2008; Ko & Kuo, 2009). There is no evidence that points to any negative outcomes associated with blogging; this is unlike so many other types of internet use, such as gaming or pornography. However, bloggers frequently have personality traits high in neuroticism and openness to experience (Guadagno, Okdie, & Eno, 2008). This is especially true of female bloggers (Guadagno, Okdie, & Eno, 2008)

In one study that examined bloggers versus participants that did not blog, blogging was found to be associated with increased well-being (Baker & Moore, 2008). Specifically, blogging was shown to increase friendship satisfaction, social integration, and reliable alliance (Baker & Moore, 2008). This was further supported by a similar study conducted by Ko & Kuo (2009) that found blogging increased subjective well-being in participants because the self-discloser involved in the activity enhanced the participants' social capital, social integration, and bonding social capital, defined as resources accumulated through emotionally close relationships, such as family and close friends (Ko & Kuo, 2009).

Twitter

Another way of communicating online has gained popularity in the form of Twittering. Twitter is a form of microblogging, blogging conducted on a smaller scale and consisting of succinct statements, links, or small media files; it has become a cultural phenomenon since its inception in 2006. However, it has gained significant popularity only in the last year, most likely, because many celebrities became fans and frequent users of this new internet medium. Because of its novelty, there are no published studies in reputable peer-reviewed journals on its effects or on other variables associated with its users. The majority of the information on this new internet medium comes from popular media sources such as newspapers, magazines, and internet websites.

However, because of its popularity, there seems to be some mention of Twitter in conferences around the country such as the International Conference on Weblogs and Social Media and the 9th WebKDD and 1st SNA-KDD 2007 workshop on Web mining and social network analysis (Java, Song, Finin, & Tseng, 2007). Twitter allows users to post blocks of information in 140 characters or less on a website that can be accessed through the internet on either on computers or on mobile cellular devices. These messages or "Tweets," as they are called, can be any type of information the user wishes to convey to his or her "Friends," "Followers," or to an audience, which can be publicly viewed. The distinction between "Friends" versus "Followers" is that another user must be added to the individual's friend list to be deemed a "Friend"; however, a "Follower" is any individual that follows and views a user's "Tweets" that are made public via a privacy control option. Most often the tweets are mundane status updates on the user's daily activities. However, many users and corporations are establishing accounts and using Twitter as a marketing tool.

Java, Song, Finin, & Tseng (2007) found, in a study that was presented at the 9th WebKDD and 1st SNA-KDD 2007 workshop on Web mining and social network analysis, that the intentions of Twitter users generally fall into several categories which include: a conversation between users, approximately (21%), posting about daily activities, sharing information such as weblinks (13%), and reporting or commenting about the latest news. Unfortunately, Java, Song, Finin, & Tseng, (2007) did not generate percentages for all categories of Twitter intentions in their research.

In addition, the users themselves fall into different categories, such as a friend, information seeker, and information source (Java, Song, Finin, & Tseng, 2007). The friend category is encompassed by most interpersonal relationships, friendships, and acquaintances. An information seeker is an individual that uses Twitter more frequently as a means of gathering information than about posting their own information (Java, Song, Finin, & Tseng, 2007). An information source is a user with a large following of users who value the information they are producing; they are frequent posters (Java, Song, Finin, & Tseng, 2007). Huberman, Romero, & Wu (2008) uncovered the fact that the majority of Twitter users actually have a small network of actual friends, yet display a very large group of "Friends" and "Followers" on Twitter.

Online Shopping

Although the internet is a great communication tool, communication is certainly not its only purpose. Another is as a means of commerce. According to Joines, Scherer, & Scheufele (2003) online shopping has provided greater convenience, the ability to compare prices easily, and removed the hassle of the shopping experience with the click of the mouse. Younger people are more likely to shop online. The primary motivation for this type of shopping in contrast to in-person appears to be economic. Individuals are better able to compare a multitude of

products, gain information about products, and receive incentives offered by the website (Joines, Scherer, & Scheufele, 2003). Bridges & Florsheim (2008) found that website characteristics that allow the user to maneuver the website easily and enable them to get their "utilitarian" shopping goals met are conducive to increased purchasing.

Several factors have been shown to be associated with website purchasing, most significantly customer service, website security and privacy, and perceived product information (Seock & Norton, 2008) In another study of 403 college students, a passion for online shopping was associated with three personality characteristics: conscientiousness, openness to experience, and agreeableness (Wang & Yang, 2008). Unfortunately, the easy use of online shopping creates the perfect storm for compulsive buyers to amass large amounts of debt that often will create financial, emotional, and social problems for themselves and their families (Lyons & Henderson, 2000).

Internet Gambling

The purchase of goods is not the only way that internet users will find to spend money online. According to Griffiths (2003), technology and increased access to the internet has allowed gambling to flourish online. There is no longer the need for individuals to go to gambling environments such as casinos to gamble; instead they can engage in online gambling in the privacy of their own homes. This has allowed easier, in fact, instant access to gambling opportunities, less accountability, and increased associability. Stimuli associated with a computer, for example, become a conditioned trigger to initiate gambling behavior, in comparison with the typical triggers of a traditional gambling environment, such as a casino. Additionally, the electronic cash that is used in online gambling can be psychologically devalued

by the gambler when, compared with real money; this can result in the gambler's spending or wagering more than he or she would in a real-life situation (Griffiths, 2003).

There is also the possibility of engaging in this activity at work or in other situations, covertly, because of the portability and freedom of laptop and personal computers (Griffiths, 2003). This is especially true of college students. Petry & Weinstock (2007) found approximately 25% of these students have placed bets via the internet at least once, when a population of 1,300 college students was studied. This same study also uncovered the fact that males of a younger age were related to increased rates of online gambling (Petry & Weinstock, 2007).

Moreover, emotional distress, psychiatric problems, and financial difficulties are some of the negative implications of pathological gambling (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001; Cunningham-Williams, Cottler, & Compton, 1998). Pathological gambling increased the probability of psychiatric disorders in a survey of more than 43,000 respondents. This same study found that college students were approximately four times more likely to place bets on the internet.

Online Gaming

Although online gambling proves popular with adults, among adolescents, college students, and children, online gaming is exponentially increasing as a form of internet addiction (Young, 2009). The classic signs of addiction are readily apparent in this population (Grusser, Thalemann, and Griffiths, 2007). One of the most popular segments of the online gaming world is the Massive Multi-user Online Role-Playing Games or "MMORPGs" for short (Young, 2009). Individuals immersed in these games often use this medium as a means of psychological escape;

they display signs of withdrawal from family and friends, and lose interest in other activities (Leung, 2004).

Facilities have emerged that specialize in this type of addiction; there is also expansion of treatment facilities for other addictions in order to compensate for this new problem. Colleges are also addressing the problem by providing support groups for students (Young, 2009). Block (2008) identified excessive online gaming as a separate subtype of internet addiction. In the USA, 8.5% of young gamers (age 8 to 18) can be considered as "addicted" to video games; whereas, another 23% have felt "addicted" according to a Harris Poll (Harris Interactive, 2007).

There can be severe consequences for the gamer because of addiction to online games; these can impact interpersonal relationships, physical health, and other aspects of well being. To spend more time gaming, these individuals will often forgo sleeping, eating, and spending time with friends and family. Some addicts have been found to play upwards of 20 hours in one gaming session every day. Because the nature of the virtual world is constantly stimulating and evolving, gamers can easily lose track of time, and allowing a few extra minutes can turn into hours. This addiction can lead to problems for couples, including divorce, disruption of family life, and relationship loss (Young, 2009).

Gaming addicts often will lose sleep, neglect diet, withdraw from family or friends, skip opportunities to socialize, eliminate exercise, lose interest in hobbies, spend increasing amounts of time and money on gaming, require increased time spent in gaming to obtain pleasure, obsess about gaming while engaging in other activities, lie about time spent on gaming, feel guilt, regret, or loss of control concerning gaming, and experience decreased mood, increased anxiety, restlessness, and irritability when not gaming (Young, 2004). These individuals often do not get proper nutrition, adequate sleep, and let their health and well-being deteriorate because of the

time-consuming and emotionally taxing nature of online gaming. Some other health problems

include carpal tunnel, eye strain, back strain, and repetitive stress injury Addicts will also often

fail to maintain personal hygiene (Young, 2009).

   The social aspect of gaming is many times overlooked. It can be argued that individuals

with this type of problem can be using online gaming as a means to avoid direct social

interaction (Young, 2009). However, this is often times the opposite. According to Leung

(2007), in the multi-user role playing games there is a large social component in which the

games include features that allow for interaction such as chat rooms and virtual spaces to

communicate. A significant attraction to gaming addiction may be the social aspect. Individuals

who are ostracized in real life may find solace, companionship, a sense of community or

belonging and social interaction in gaming. This may be especially true of children, adolescents,

and young adults. Adolescents with gaming addictions who have been withheld from gaming

have become depressed, irritable, and anxious. They may also act out, with behaviors such as

aggression, violence, or irrationality that are attendant to what one could conceive as a

withdrawal syndrome from gaming (Leung, 2004).

Historical Development of Cognitive Behavioral Therapy

   As the title implies, cognitive behavioral therapy (CBT) is a type of therapy that

combines both cognitive and behavioral components (Knapp & Beck, 2008). Cognitive therapy

(CT) falls under the larger umbrella of CBT, although some use the terms interchangeably. CBT

are psychotherapies based on the cognitive model (Knapp & Beck, 2008). Many mental health

professionals may also use a cognitive behavioral approach or various CBT techniques, yet not

strictly adhering to the CBT model or label themselves as CBT in orientation (Beck, 2005).

There has been continued progress over the last 45 years in the evolution of cognitive theory and therapy since the importance of cognition in the maintenance of depression was first observed (Beck, 1963, 1964). A theoretical frame was developed by Aaron T. Beck, a psychoanalyst, who was known as the founder of cognitive therapy and who subsequently developed therapeutic intervention (Beck, 2005). Over the years, there has been significant progress in the investigation of the importance of cognition in the maintenance of psychopathology; this has lead to an abundance of empirical support and a better understanding of the cognitive model (Beck, 2005). Nevertheless, the influence of cognitive distortions and appraisals on behavior and emotion has continued to remain a prominent feature of the therapy despite refinements of the cognitive model over the years (Beck, 2005).

In individuals taking psychotropic medications and in those who are forgoing medication, research has shown that CBT is effective at reducing symptomatology and improving relapse rates in a variety of clinical disorders (Knapp & Beck, 2008). Depression (Beck, 1964), anxiety disorders and phobias (Beck, Emery, & Greenberg, 1985), suicide (Beck, Resnik, & Lettieri, 1974), panic disorders (Beck, 1987), personality disorders (Beck, Freeman, & Davis, 1990), and substance abuse (Beck, Wright, Newman, & Liese, 1993) were the first conditions that Beck treated using cognitive therapy principles and interventions. He also began applying his theories to anger, hostility, violence (Beck, 1999) and interpersonal difficulties (Beck, 1988). More recently, the efficacy of CBT has been demonstrated in augmenting treatment for schizophrenia (Beck & Rector, 2005), bipolar disorder (Lam, McCrone, Wright & Kerr, 2005), and other conditions with severe psychopathology.

In addition, modifications to the traditional CBT protocol have been used to treat various conditions such as anorexia (McIntosh et. al., 2005), chronic pain, medical disorders (Beck,

1997) and childhood somatic disorders (Reigada, Fisher, Cutler, & Warner, 2008). It has also been shown through neuroimaging that CBT is able to produce physiological changes in different brain regions (Linden, 2006). Finally, research continues to contribute to the body of evidence that supports CBT interventions for a multitude of disorders.

Historical Background

The cognitive revolution began in the early 1960s as a result of the many limitations to the traditional behavioral and psychoanalytic approaches. There were several early psychologists who contributed to the movement including: Albert Ellis (1962), Aaron Beck (1963, 1964, 1967, 1970), Donald Meichenbaum (1973), George Kelly (1955), Michael Mahoney (1974), and Joseph Cautela (1967). In addition, the work of Bandura on social learning theory paved the way for the cognitive behavioral therapy revolution (Wilson, 1978). It was demonstrated by the social learning theory that the regulation and acquisition of behavior is influenced heavily by cognitive processes (Wilson, 1978). For example, his research on modeling illustrated how learning could occur through observation without direct reinforcement (Wilson, 1978). Moreover, it shows how behavior change can be self-directed (Wilson, 1978).

The phenomenological-humanistic approach to therapy was also an early theoretical framework used in the creation of CBT (Knapp & Beck, 2008). It emphasized the importance of conscious subjective experience, which was initially displayed in the works of early philosophers, such as Heidegger, Husserl, and Kant (Knapp & Beck, 2008). The concept that individuals are disturbed, not by actual facts, but by their interpretation of the facts or the significance or meaning they assign to the facts originated from the work of the early Greek stoic philosophers and has become an essential component of cognitive therapy (Knapp & Beck, 2008).

Shortly thereafter, a large number of therapists began practicing cognitive behavioral approaches to therapy and were self-identifying as "cognitive" in orientation (Knapp & Beck, 2008). Different interventions have been emphasized in CBT as it has evolved over the last 40 years. Problem-solving therapies, coping skills therapies, and cognitive restructuring psychotherapies have been identified as the most prominent permutations. It should be noted that Aaron Beck coined the term cognitive therapy and was the first to apply it to a specifically mental disorder, Major Depressive Disorder, despite Albert Ellis writing about the effects of cognitions.

Rational emotive behavior therapy (REBT) was one of the first cognitive therapies. It was created by Albert Ellis, a classically trained psychoanalyst, in the 1950s, and it remains one of the most popular therapies to date that combines both cognitive and behavioral components. It centers on the ABC model that he also developed, which illustrates how activating events (A) can lead to individual beliefs (B), which then lead to consequences (C) (Ellis, 1962). The consequences can be behavioral, emotional, or physiological (Ellis, 1962). The goal of the therapeutic process is to modify irrational beliefs by challenging, disputing, and empirically questioning them (Ellis, 1962).

Ellis believed that at the core of emotional disturbance are 12 fundamental irrational beliefs, which are unrealistic and absolutistic (Ellis, 1962, 1997). According to Ellis (1997), first, it is essential that adults are loved for everything they do by significant others. Second, people who perform acts that are terrible should be punished (Ellis, 1997). Third, it is horrible if things do not go my way (Ellis, 1997). Fourth, outside events and people will force misery on us (Ellis, 1997). Fifth, we should be upset by things that are dangerous or fearsome (Ellis, 1997). Sixth, the belief that difficult things in life should be easily avoided (Ellis, 1997). Seventh, we are not

able to rely only on ourselves (Ellis, 1997). Eighth, we need to be competent in many different

aspects of our lives (Ellis, 1997). Ninth, if something has affected us, it will continue to do so in

the future (Ellis, 1997). Tenth, we must have control over our circumstances (Ellis, 1997).

Eleventh, happiness is achieved by being idle (Ellis, 1997). Twelfth, we cannot help what we are

disturbed by and do not have the ability to control our emotions (Ellis, 1997). In addition,

cognitive restructuring therapies are concerned with altering maladaptive thoughts and

eliminating cognitive distortions or errors in thinking in order to allow the client to better

reframe the situation and alleviate distress and improve mood (Beck, Rush, Shaw, & Emery,

1979).

Problem-solving therapy, another treatment paradigm, which became popular during the

1970s, was popularized by D'Zurilla and Goldfried and follows a similar model. Problem-

solving therapy emphasizes helping clients develop better problem-solving strategies and skills

so that clients are better equipped to cope with a variety of interpersonal difficulties and

problems, which then promotes a change in behavior (D'Zurilla and Goldfried, 1971). Another

version of CBT, developed by Donald Meichenbaum in the 1970s, was self-instructional training

(SIT), which proposed a relationship between self-instruction and behavior (Meichenbaum,

1977). It also focuses on the importance for the clients to develop covert self-instructions so that

they will be better able to guide their own behavior adaptively and handle a variety of situations

(Meichenbaum, 1977). This approach possesses components of behavior therapy, such as graded

tasks and self-reinforcement, as well as cognitive modeling and meditational training (Wilson,

1978).

Another approach developed by Meichenbaum is stress inoculation training which

focuses on inoculating the clients to stress by increasing their coping skills, so that they are better

equipped to handle stressful situations (Meichenbaum, 1985). These techniques have been used with depression, stress, and anger management. These approaches are significant developments in the evolution of CBT and are a dramatic shift from the previous eras of behaviorism and psychoanalytic theory (Wilson, 1978).

New cognitive behavioral approaches that have become popular in the last decade, however, may not have been possible without the original cognitive model. Two therapies that are gaining momentum and currently being used with populations with severe axis I psychopathology and personality disorders are schema therapy developed by Jeffery Young and dialectic behavior therapy (DBT) developed by Marsha Linehan. Schema therapy focuses on identifying and challenging maladaptive schema that developed from early childhood experiences (Young, Rygh, Weinberger, & Beck, 2008). Dialectic behavior therapy, originally developed for clients with Borderline Personality Disorder, utilizes a CBT approach, but also incorporates acceptance and interventions to target dysfunction in interpersonal relationships, emotional regulation, and coping (Linehan & Dexter-Mazza, 2008). DBT incorporates elements from traditional meditative practices (Linehan & Dexter-Mazza, 2008).

The Pioneering Efforts of Aaron T. Beck

In the 1960's, Aaron Beck conducted research on dreams, which uncovered the fact that the dreams of the depressed clients were focused on failure, loss, and defeat, which was vastly different from the self-directed hostility and anger that Beck had originally postulated by psychoanalytic theory (Beck, 1961). Beck suspected that dreams may simply be a reflection of the depressed clients' thoughts, which would indicate the content of their thoughts while awake. These waking cognitions also reflected themes of failure and loss (Beck, 1961). He also conducted several studies investigating the psychological processes associated with depression in

an attempt to lend support to the Freudian theory that depression is anger repressed and is

directed inward (Beck, 1963, 1964). This research provided the foundation for and led to the

development of the cognitive model, because he uncovered errors in thinking (Beck, 1963,

1964). This was vastly different from the psychoanalytic perspective that depression is anger

directed inward (Knapp & Beck, 2008).

For a significant period, Beck treated clients with psychoanalysis which heavily relied on

free association techniques (Beck, 1997). He observed that clients often experienced thoughts

that affected their mood states while engaging in free association exercises; however, the patients

rarely reported those thoughts. Initially, Beck believed the thoughts were typical transference,

but as he probed further, he realized they were vastly different from his initial impressions.

Furthermore, these thoughts were also not being treated through the traditional psychoanalytic

methods he was using. He also discovered that these thoughts were directly tied to the client's

mood state (Beck, 1997).

Moreover, Beck (1997) noticed that clients were often prone to errors in thinking,

especially those clients who were depressed. When the situation or erroneous thought was able

to be reframed more realistically, then an improvement in mood was noted as well as a positive

change in behavior. It is the interpretation of an experience that dictates mood. This concept

later became known as biased processing or cognitive primacy. Initially, Beck explained biased

processing through a psychoanalytic lens (Beck, 1997). However, after he developed the

cognitive model, he failed to find support for the role of defense mechanisms; rather, he

illustrated the importance of the cognitive process in mental health and psychopathology (Beck,

1997).

These initial observations were crucial in the development of the cognitive model (Beck, 1997). Beck realized the inadequacies of the psychodynamic model; specifically, that it failed to address underlying cognitions that affected mood and behavior. Not long after, a paradigm shift in the field of psychology took place (Beck, 1997).   Based on his clinical and research observations, Beck (2005) proposed the "cognitive triad" which illustrates how depressed individuals would view themselves, their world, and their future through a negative lens. He used this model to explain these depressive symptoms in a cognitive framework.

Furthermore, Beck scrutinized the psychoanalytic model and therapeutic process, which was a significant portion of his training (Beck, 1997). His research and investigation supported his concept that cognitive processes were a significant factor in depression and other disorders, whereas the psychoanalytic model focused primarily on unconscious processes and did not take the cognitive processes into account (Beck, 1963). Beck distanced himself from the psychoanalytic approach by focusing on presenting problems and accessible thoughts during therapy versus attempting to uncover hidden trauma, unconscious processes, and sexual drive (Beck, 1976).

Despite dissatisfaction with psychoanalysis, Beck's experience and training with this form of therapy gave him insight about how to better develop new therapeutic strategies and concepts that would be more effective for clients. From the psychodynamic model, he concluded that symptoms can develop from pathogenic thoughts. He self-identified as a neo-analyst throughout his professional career and believed it is necessary to understand not only the meaning that clients assign to their experiences, but also the conscious experiences themselves (Knapp & Beck, 2008).

According to Knapp & Beck (2005), unconditional acceptance of the client and the therapeutic style of questioning inherent in CBT are derived from the work of Carl Rogers and client-oriented therapy. CBT also stresses the importance of a strong therapeutic alliance with clients. Collaborative empiricism, the process by which a therapist and client work together to test assumptions and beliefs objectively, is also an integral component of the therapeutic process. The development of cognitive conceptualization, which is frequently relied on as a source of therapeutic direction in CBT, was an outgrowth of attachment theory (Knapp & Beck, 2008).

Furthermore, the foundation of cognitive therapy is heavily rooted in cognitive psychology (Knapp & Beck, 2008). Beck believed CBT is reminiscent of the information-processing model, because cognitive errors that result in psychopathology are hypothesized to be the result of biased processing of internal stimuli or external events. Beck reported the personal construct theory developed by George Kelly in the 1950s significantly contributed to his development of CBT (Beck, 2005). Personal construct theory illustrates how past experience results in schemas, that is organizational patterns of information that provide a framework for new experiences, attitudes, and cognitions (Kelly, 1955).

Additionally, the work of Richard Lazarus, which focused on the cognitive theory of emotions and the model of self-management proposed by Donald Meichenbaum were contributing factors to the development of CBT and cognitive theory. Beck acknowledged that the rational-emotive-behavior therapy (REBT), which was developed by Albert Ellis during the same period in the 1950s and which also focused on problem-solving, has significantly affected his work with cognitive theory and therapy (Knapp & Beck, 2008).

According to Wilson (1978), cognitive therapy displays origins from both behavior and psychoanalytic therapy, specifically in utilizing intrapyschic processes. Many of the therapeutic

interventions frequently used in CBT, such as behavior activation, are lifted from behaviorism

principles (Wilson, 1978). Components of behavior therapy, such as hypothesis testing, greater

therapist involvement, measureable treatment goals, defining variables and outcomes, agenda

setting, session structure, client feedback, social skills training, homework and exposure

assignments between sessions, and problem-solving techniques were taken and incorporated into

the therapeutic techniques and procedures of CBT. However, the seemingly mechanistic nature

of behavior therapy was purposely not incorporated (Knapp & Beck, 2008).

In contrast, CBT emphasizes the therapeutic relationship and alliance, collaborative

empiricism, and guided discovery. Its focus is on evaluating thoughts, feelings, and behavior,

specifically to challenge maladaptive thoughts, schema, and core beliefs, and to replace them

with reality based cognitions (Rupke, Blecke, & Renfrow, 2006; Knapp & Beck, 2008).

Behaviorism discounted mental events, and the focus was on only operant behaviors, whereas

CBT emphasizes a humanistic quality (Knapp & Beck, 2008). Identifying and altering automatic

thoughts, mood monitoring, behavior activation activities, and social support have been

recommended as essential components to the treatment (Rupke, Blecke, & Renfrow, 2006).

Types of Distortions

The errors in thinking or the content of these maladaptive thoughts that were observed by

Beck became known as cognitive distortions. He was able to identify several cognitive

distortions that can occur on a regular basis: magnification and minimization, dichotomous

thinking, personalization, arbitrary inference, selective abstraction, and overgeneralization

(Beck, 1963, 1964, 1967; Beck, Rush, Shaw, & Emery, 1979; Yurica & DiTomasso, 2005). It

has been shown that these cognitive distortions are a factor in maintaining emotional disorders;

thus, the restructuring of these thoughts is an essential component of CBT and is necessary for

recovery (Beck, 1963, 1964, 1967; Beck, Rush, Shaw, & Emery, 1979; Yurica & DiTomasso, 2005).

The distortions were revised and made more accessible by Burns (1990, 1999); these include: overgeneralization, discounting the positives, jumping to conclusions by minding-reading, fortune-telling, or predicting a negative outcome, all-or-nothing thinking, mental filtering, labeling, personalization and blame, "should and must statements," emotional reasoning, and magnification and minimization.

According to Freeman & DeWolf (1992) and Freeman & Oster (1999), other cognitive distortions include: comparison, externalization of self worth, and perfectionism, with several new distortions added by Gilson & Freeman (1999) including: attachment, control, worrying, fairness, change, ignoring, being right, and heaven's reward.

In addition, schemas are deeply engrained beliefs or perceived truths about oneself and one's environment that typically develop from early childhood experiences (Beck, 1970, 1976). The crux of cognitive therapy is then to identify and erode dysfunctional early schemas (Beck, 1970, 1976). These schemas can be self-perpetuating and resistant to change. Assumptions and rules about one's self worth develop as a justification and provide additional support for these core schemas that developed early on in one's life experiences (Yurica & DiTomasso, 2005). These ingrained ways of thinking are often emotionally laden and closely linked with appraisal of self-worth (Beck, Rush, Shaw, & Emery, 1979). Cognitive distortions manifest when assumptions and core beliefs are supported by perpetual maladaptive thinking patterns that distort, generalize, and omit information from one's environment and internal experience (Yurica & DiTomasso, 2005). Therefore, psychopathological disorders, such as depression, are developed and maintained by cognitive distortions (Yurica & DiTomasso, 2005).

Information Processing Models

The cognitive processing of information can be explained and conceptualized using several models that have been supported by the literature. One cognitive theory explains the manifestation of cognitive distortions to be the result of overactive schemas which enable processing of information obtained from one's environment (Kendell, 1985). The overactivation of these schemas and the interpretation of information in a biased way results in cognitive distortions, maladaptive thoughts and behaviors, and psychopathology (Kendell, 1985). Furthermore, the development of cognitive distortions can be explained by a specific cognitive taxonomy model developed by Kendall (1992) that focuses on specific aspects of cognitions. Cognitive content, cognitive structures, cognitive products, and cognitive processes have been identified as features of Kendall's taxonomy. Certain cognitive processes, which contain the cognitive distortions, are filtered through these facets that encompass the general cognitive framework (Yurica & DiTomasso, 2005).

Moreover, deficits in processing and distortions of processing have been differentiated by Kendall in the cognitive processes domain (Yurica & DiTomasso, 2005). Cognitive deficits should be differentiated from cognitive distortions (Yurica & DiTomasso, 2005). Cognitive deficits result from a lack of cognitive activity with an unintended negative consequence and constitute a deficient processing (Yurica & DiTomasso, 2005). In contrast, a faulty reasoning process distorts active thinking which then results in an unintended consequence, constituting distorted processing (Yurica & DiTomasso, 2005). The distinction is that the latter is characterized by a distortion in thinking, whereas, the former results from a lack of thinking (Kendall, 1992; Yurica & DiTomasso, 2005).

Good mental health or behavioral adjustment is not necessarily obtained by accurate perceptions of the world (Kendall, 1992). It is possible for an individual to become more functional by having inappropriately positive cognitive distortions; however an extreme form of this is narcissism or mania, which is not characteristic of good mental health (Yurica & DiTomasso, 2005). In contrast, Alloy et al. (1999) have demonstrated how depressed college students versus college students without depression were better able to gauge reality. Additionally, attributional (Sehgman, Kaslow, Alloy, Peterson, Tanenbaum, & Abramson, 1984) and cognitive styles (Haeffel et al., 2005; Alloy et al., 1999) have also been shown to act as filters for ways in which some individuals view and interpret their world; this also illustrates a cognitive vulnerability (Ingram, 2003). The formation of cognitive distortions has also been explained by several untitled theories of information processing (Daleiden & Vasey, 1997; Crick & Dodge, 1994; Berry & Broadbent, 1984; Schneider & Shiffrin, 1977). Moreover, according to developmental theories set forth by Piaget (1952) and Erikson (1963), schema developed early in life may be the root of distorted cognitive processes. Gilbert (1998), an evolutionary psychologist, has hypothesized that an evolutionary mechanism causes information processing to be "sensitive to threat" and explain that the phenomena of distortion, such as "better safe than sorry" is a frequently used adaptive heuristic. From this perspective, cognitive distortions serve an adaptive function and are part of evolutionary functioning of the brain as opposed to illogical and negative thinking or cognitive errors (Gilbert, 1998).

Cognitive Distortions in Axis I & II Disorders

Cognitive distortions have been identified in most psychological disorders (Rosenfield, 2004; DiTomasso, Martin, & Kovnat, 2000; Freeman, Pretzer, Fleming, & Simon, 1990, 2004; Freeman & Fusco, 2000) since Beck (1976) originally studied distortions in individuals with

depression. There is also a great deal of literature that supports the function of cognitive

distortions in sex offender behavior (McGrath, Cann, & Konopasky, 1998; Howitt & Sheldon,

2007), antisocial behavior (Barriga, Hawkins, Camelia, 2008) eating disorders (Shafran,

Teachman, Kerry, & Rachman, 1999; Mountford, Haase, Waller, 2006), Obsessive-Compulsive

Disorder (McLean, Whittal, Sochting, Koch, & Paterson, 2001), sexual dysfunction (Leiblum &

Rosen, 2000; Walen, 1980), gambling (Fisher, Beech, & Browne, 1999; Delfabbro & Winefield,

2000; Xian, Shah, Phillips, Scherrer, Volberg, & Eisen, 2008), and test anxiety (Wong, 2008).

Cognitive distortions have also been shown to contribute to the psychopathology of clients with

medical issues (Uhl, 2007)

Furthermore, it has been shown that individuals with personality disorders have a higher

frequency of cognitive distortion (Rosenfield, 2004). In clients with Dependent Personality

Disorder, Freeman et al. (1990) identified the primary distortion as dichotomous thinking. It has

also been shown that dichotomous thinking, jumping to conclusions, and emotional reasoning are

distortions characteristic of Histrionic Personality Disorder (Beck, Freeman, et al., 1990; Beck,

Freeman, Davis, et al., 2004). Narcissistic Personality disorder is characterized by distortions

such as magnification of self, minimization, and selective abstraction (Beck, Freeman, et al.,

1990; Beck, Freeman, Davis, et al., 2004). Finally, magnification, perfectionism, dichotomous

thinking, and "should and must" statements have been seen in clients with Obsessive

Compulsive Personality Disorder (Beck, Freeman, et al., 1990; Beck, Freeman, Davis, et al.,

2004). With a clear relationship between cognitive distortions and a myriad of psychological

dysfunction, it is logical to hypothesize the role of these maladaptive thought patterns in more

contemporary varieties of maladaptive behavior, specifically, pathological internet use.

Cognitive Distortions and Pathological Internet Use

A literature review of cognitive distortions and pathological internet use reveals no

studies examining the role that cognitive distortions play in pathological internet use. However,

Davis (2001) proposed a cognitive-behavioral framework to explain the underlying cognitive

distortions and behaviors that play a role in pathological internet use. Although this model has

not been empirically supported, it can provide a cognitive foundation for the current study.

Davis (2001) distinguished between two types of pathological internet use: general and specific.

The general type encompasses excessive internet use of multiple types; whereas, specific

pathological internet use focuses on one type, such as pornography (Davis, 2001). Underlying

psychopathology is identified as a critical component of pathological internet use and part of the

etiology (Davis, 2001). Nevertheless, the psychopathological component does not directly result

in symptoms, but rather, causes a vulnerability that leaves an individual susceptible to

pathological use or becomes a catalyst for the internet dysfunction (Davis, 2001).

Operant conditioning principles play an integral role in the behavioral development of

pathological internet symptomatology (Davis, 2001). For instance, the positive reinforcement an

individual experiences from using certain internet features, such as online gaming reinforces the

behavior (Davis, 2001). This reinforcement can include a number of experiences, such as

anxiety reduction, feelings of interpersonal connection, excitement, happiness, or sexual arousal.

These positive feelings or emotional states reinforce the behavior (Davis, 2001). The individual

will then use the internet more frequently to achieve these positive feelings and even seek out

and try new internet activities and technologies to achieve the same positive experiences (Davis,

2001). Other secondary reinforcers surrounding internet use can then become reinforcing

because they are related to the primary positive internet experiences (Davis, 2001), such as the

sound of typing, connecting to the internet, or the infamous "You've got mail" automated response produced by AOL and made popular by the media. These reinforcers can become the discriminative stimuli that serve as cues to initiate and maintain pathological internet behaviors (Davis, 2001).

Moreover, Davis (2001) illustrates how cognitive distortions and maladaptive cognitions are integral to pathological internet use, specifically thoughts about self and the world. For example, rumination about one's pathological internet use can also negatively impact the severity of the symptoms. Self-doubt, low self-efficacy, and negative self-appraisal have been identified as distortions relating to self. An individual with this form of pathology will use the internet as a non-threatening way to achieve positive responses from others when the individual has a negative self-concept (Davis, 2001). Davis (2001) proposed examples of distortions that this population may experience, such as "I am worthless offline, but online I am someone"; "I am a failure when I am online," and "I am only good one the internet." In terms of cognitive distortions about the world, an individual may feel that "The internet is the only place that I am respected;" "The internet is my only friend"; "Nobody loves me offline," and "People treat me badly offline" (p. 191). Dependence on the internet is then exacerbated by this variety of "all-or-nothing" thinking.

According to Davis (2001), the development and maintenance of generalized pathological internet use can by impacted by procrastination. Many individuals manifesting cognitive distortions that are focused on internet use, most likely have prior cognitive distortions and underlying psychopathology and this medium has allowed their dysfunctions to flourish. Despite this underlying etiology, most often the pathological internet becomes a disorder unto itself and not merely a symptom of a more severe axis I disorder (Griffiths, 1998, 2000a, 2000b,

2001; Shapira et al., 2000, 2003; Young, 1998, 1999, 2004, 2007). CBT has been shown to be effective in treating pathological internet use (Young, 2007). Young (2007) found symptoms reduction by the 8th session in a study of 114 internet addicts. Of greater importance, these treatment gains were maintained when a six month follow-up was conducted. Nevertheless, this controversy continues to be debated within the field and proposes serious questions about how this disorder will be conceptualized and treated in the future. It is suspected that the DSM-V, which is expected to be released in 2013, will be a catalyst for this change.

Five-Factor Model of Personality

Since the beginning of the 20th Century**,** the study of personality has shifted from a taxonomic representation to a dimensional approach based on five-factors**.** In the late 1880's, Sir Francis Galton proposed the lexical hypothesis, which would span the world's languages, and which would illustrate how personality can be explained by single terms derived from the human experience (Goldberg, 1993). Galton initially examined the dictionary in an attempt to compile all of the personality-related terms in the English language. The list was modified over the next several decades by Allport and Odbert (1936) and then Norman (1967). These researchers provided the foundation for the conceptualization of personality in terms of descriptors. Thurstone (1934) conducted factor analysis on sixty adjectives used frequently to describe people and uncovered five core personality clusters, which accounted for the coefficients. These clusters of traits would later become known as the five factors, and would include: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. This work was crucial in the subsequent development, not only in the five factor model, but also in the research of future investigators into the structure of personality.

Thurstone (1953) developed the Thurstone Temperament Schedule focusing on seven

factors, which were derived from his manipulation of the 13 scales developed by Guilford; these

include: Social Introversion, Thinking Introversion, Depression, Cycloid, Rhathymia, General

Activity, Ascendance, Masculinity, Inferiority Feelings, Nervousness, Lack of Objectivity, Lack

of Agreeableness, and Lack of Cooperativeness (Thurstone, 1951). The 4,500 trait terms

originally complied by Allport and Odbert (1936) were once again used in the research by

Raymond Cattell (1943). This list was further distilled to 35 variables used in several subsequent

studies, which were conducted to correlate and uncover oblique factors (Cattell 1943, 1947).

Five of these factors, proven to be significant, were further supported by additional research

(Digman & Takemoto-Chock, 1981; Fiske, 1949; Norman, 1963; Tupes & Christal, 1961).

Donald Fiske (1949) developed his own factors after he analyzed 22 of the variables developed

by Cattell, which are somewhat similar to the Big-Five factors. These factors include: Factor I,

Confident Self-Expression; Factor II, Social Adaptability; Factor III, Conformity; Factor IV,

Emotional Control; and Factor V, Inquiring Intellect.

In the 1950s and 60s, several studies conducted on the U.S. Air Force, investigated factor

structures; these were more specifically, the long-term predictive validity of peer ratings on

personality variables (Tupes & Christal, 1992**)**. In their factor analyses, Tupes & Christal (1958,

1961) found five factors, such as Surgency, Agreeableness, Dependability, Emotional Stability,

and Culture, which emerged as prominent personality factors. This research, which further

investigated the variables originally studied by Cattell, provided greater support for the five

factor model of personality, which is the focus of the proposed study.

Eysenck developed a three factor theory, which included factors such as Neuroticism,

Extraversion, and Psychoticism (Eysenck, 1991, 1992). His work also contributed to the

development of the five-factor model; however, despite this recognition of their work in the

development of this model, Cattell and Eysenck do not support the five factor theory (Goldberg,

1993). This research paved the way for McCrae & Costa (1985a, 1987), whose instruments will

be used in the present study.

The current five factors of personality (Big-Five) include: Extraversion, Agreeableness,

Conscientiousness, Neuroticism, and Openness to Experience (McCrae & Cost, 1987). There

was some dispute in the 1980s regarding the fifth dimension; i.e., whether or not it should

encompass Culture (Tupes & Christal, 1961) or Intellect (Peabody & Goldberg, 1989) instead of

Openness to Experience; however that has since been resolved (Goldberg, 1993). These traits

have been researched and developed in order to provide a framework for the structure of

personality that can be scientifically validated and is empirically sound. Although personality is

a varied and individualized concept, these traits seem to encompass those of the majority of the

population. There have been several reviews of this model (Briggs, 1992; Digman, 1990; John &

Srivastava, 1999; McCrae & John, 1992; Widiger & Trull, 1997).

According to Goldberg (1993), these five factors are made up of several personality

characteristics that manifest on a spectrum, as well as six facets or subordinate traits which are

used to measure each factor. Refer to Table 1 for an illustration of the five factors and

subordinate facets.

Table 1

Five-Factor Model of Personality and Subordinate Factors

Five Factors of Personality	Facets of Five Factors
1. Extroversion	1. Warmth
	2. Gregariousness
	3. Assertiveness
	4. Activity
	5. Excitement Seeking

	6. Positive Emotion
2. Agreeableness	1. Trust
	2. Straightforwardness
	3. Altruism
	4. Compliance
	5. Modesty
	6. Tendermindedness
3. Conscientiousness	1. Competence
	2. Order
	3. Dutifulness
	4. Achievement
	5. Striving
	6. Self-Discipline
	7. Deliberation
4. Neuroticism	1. Anxiety
	2. Hostility
	3. Depression
	4. Self-Consciousness
	5. Impulsiveness
	6. Vulnerability to Stress
5. Openness to experience	1. Fantasy
	2. Aesthetics
	3. Feelings
	4. Actions
	5. Ideas
	6. Values

Since the 1980's, McCrae and Costa have been the biggest proponents of the five- factor model and have been prolific in their research. Despite the enthusiasm for this model by a large portion of the researchers interested in personality, some still disagree with this model (Block, 1995; Cattell, 1943, 1947; Eysenck, 1991, 1992) McCrae and Costa have developed several personality inventories, which are derived from the five-factor model including, the NEO-PI and NEO-FFI. There have been various measures that have been integrated into the NEO-PI scales including the Myers-Briggs Type Indicator (McCrae & Costa, 1989a), Eysenck Personality Inventory (EPI) and Eysenck Personality Questionnaire, including scales measuring Neuroticism, Extraversion, Psychoticism, and Lie (McCrae & Costa, 1985b), Spielberger (Costa

& McCrae, 1987), Wiggins (McCrae & Costa, 1989b), and Jackson (Costa & McCrae, 1988a).

In addition, the five factor traits seem to be applicable across cultures (Heine & Buchtel, 2009).

Another measure that is comparable to the NEO-FFI is the Big Five Inventory (BFI) (Rammstedt

& John, 2007; Benet-Martinez & John, 1998). The BFI also measures the five factors of

personality and has been used across different age groups and cultures (Rammstedt & John,

2007; Benet-Martinez & John, 1998). When compared with the NEO-FFI, the BFI is somewhat

shorter, which provides an advantage for internet research.

Personality Traits Associated with Internet Use

Since internet use has become a daily staple in the lives of many people, there has been a

burgeoning interest in research related to internet-related behavior. More specifically, the

investigation into how personality traits are associated with different types of internet use has

emerged in the last decade (Hamburger & Ben-Artzi, 2000; Leung, 2002; Scealy, Phillips, &

Stevenson, 2002). In the growing body of literature on the subject, cyberloafing (Hartke, 2009),

college lectures online (Bassili, 2006), and internet ethics (Karim, Zamzuri, & Nor, 2009) are

just a few of many facets of the internet that have been significantly correlated with personality

traits according to the five-factor model. The population of individuals that use the internet is not

a homogenous group, but rather is composed of heterogeneous types of individuals that gravitate

to different types of use according to their own discretion and preferences (Amichai-Hamburger,

Wainapel, & Fox, 2002).

There are two predominant theories presented in the literature to conceptualize personality

traits and internet use (Amichai-Hamburger, 2005). The first is that individuals with high

degrees of introverted and neurotic personality traits use the internet as a medium to become

more social and to get their needs met in ways that they are not capable of offline (Amichai-

Hamburger, 2005; Maldonado, Mora, Garcia, & Edipo, 2001; Hamburger & Ben-Artzi, 2000;

McKenna, Green, & Gleason, 2002). An opposing view is that extraverted individuals will use

the internet to further their already flourishing social networks and offline experiences (Krau et

al, 2002). However, no real consensus has been reached in the literature because results are

contradictory.

When this dichotomy was assessed in a study of nostalgic websites (i.e. sites that allow

one to reconnect with classmates and friends), it was found that extroverted members of

nostalgic websites used the services more frequently than did introverted members; however,

introverted nonmembers of nostalgic websites, in general, were found to use online social

services more frequently than extroverted nonmembers (Amichai-Hamburger, Kaplan, &

Dorpatcheon, 2008). Therefore, the results indicate that introverts as well as extroverts benefit

from socializing online (Amichai-Hamburger, Kaplan, & Dorpatcheon, 2008). Despite these

results, Engelberg & Sjoberg (2004) did not find a correlation between the Big-Five personality

dimensions and internet usage in a population of 41 college students.

Neuroticism and extraversion have been found to be associated with different types of

Internet usage and this varies between men and women according to a study of 117

undergraduates, which correlated different types of internet use (i.e. communication, leisure, and

academic) to personality traits according to the Big-Five model (Hamburger & Ben-Artzi, 2000).

The results of this study seem counterintuitive. Extraversion was negatively correlated with

online social activities, such as participating in discussion groups and chat rooms, and

information-seeking, but was positively correlated with leisure activities of a thrill-seeking

quality, such as searching sex websites for partners (Hamburger & Ben-Artzi, 2000). In contrast,

for women, neuroticism was positively correlated with social activities and negatively correlated

with extraversion (Hamburger & Ben-Artzi, 2000), which supports the idea that introverts use the internet to fulfill their social needs.

This gender difference was also apparent in a study of Wikipedia members (Amichai-Hamburger, Lamdan, Madiel, & Hayat, 2008) and bloggers (Guadagno, Okdie, & Endo, 2008). Wikipedia members overall have been found to be less open and agreeable, and female members, specifically, have been shown to be less extraverted, which points to the interplay between gender and personality traits in terms of internet use (Amichai-Hamburger, Lamdan, Madiel, & Hayat, 2008). In contrast, bloggers, especially women, have a tendency to be higher in openness and neurotic traits (Guadagno, Okdie, & Endo, 2008).

In a study of adolescents, Doll (2001) found a similar pattern for individuals with neurotic and extraverted personality traits. In this study, the motive to use the internet for entertainment and socialization was correlated with neurotic personality traits; however, individuals with traits of extraversion used the internet for socialization only (Doll, 2001). Compulsive internet use was also found to be correlated with overall lower levels of agreeableness, conscientiousness, openness, and extraversion in adolescents (Aa, Overbeek, Engels, Scholte, Meerkerk, & Eijnden, 2009), which aligns with the school of thought that individuals who do not possess high levels of socially desirable personality traits spend significantly more time on the internet to get their needs met. This same pattern was also observed in adults with personal websites (Marcus, Machilek, & Schutz, 2006). Nevertheless, adolescents in personality studies may not have the same stability of personality traits as adult populations. Therefore, the ability to generalize the findings to an adult population may be somewhat limited.

A subsequent study uncovered a similar finding that individuals with neurotic and introverted personality traits use the internet to be themselves or the "real me," which has been

defined as the degree of ease with which the participants were able to "open up" to their friends, according to the "Real-me" questionnaire; however, extroverted individuals and those who do not have neurotic traits are most able to be themselves or locate the "real me" using offline social interaction (Amichai-Hamburger, Wainapel, & Fox, 2002; Amichai-Hamburger, Lamdan, Madiel, & Hayat, 2008). However, Tuten & Bosnjak (2001) uncovered an opposing finding which indicates individuals with high levels of neuroticism reported less internet usage, which dispels the idea that the internet is a medium that enables neurotic individuals to flourish.

The research on personality traits and associated internet usage continues to yield contradictory findings; however, there are several studies that have revealed the fact that specific personality traits, such as extraversion, introversion, narcissism, and neuroticism are correlated with different types of use. The most frequently researched facets of the internet correlated with personality traits have focused on online social networking, socializing, twittering, and blogging.

Summary and Critique

Over the last decade, there has been a substantial body of research and of literature in the area of pathological internet use and its implications. However, there has been no research specifically investigating the relationship between internet use, cognitive distortions, personality traits, and relationship dissatisfaction. This study will bridge those gaps in the literature and provide foundational knowledge that can provide the basis for the development of assessment instruments so that individuals engaging in pathological internet use can be readily identified by mental health professionals and triaged into the appropriate intervention and treatment services. Cognitive distortions and personality traits need to be identified in internet users because of what is known about the negative outcomes associated with pathological internet users and because of

the few studies that have demonstrated the relationship between certain personality traits and types of internet use.

Moreover, it is suspected that these personality trait differences would be related to different types of internet use. It is important to identify which personality traits are associated with different types of internet use so that a better understanding of those types of personalities that are drawn to different aspects of the internet, specifically in terms of pathological internet use. If clinical psychologists are able to establish relationships between certain traits, then screening instruments can be developed to assess and identify individuals at risk for certain types of pathological internet use. The results from the proposed study can inform treatment planning for pathological internet users; the findings will help to clarify the contradictory findings in the literature related to pathological internet use.

Chapter 3: Research Hypotheses

There were eight research hypotheses included in this study.

Hypothesis 1 (Type of Use and Cognitive Distortions): The amount of internet use by type of internet use (i.e. pornography, gambling, gaming, social networking sites, blogging, searching/Googling, shopping, twittering, online dating, online media viewing, online courses, and computer mediated communication like chatting, emailing, posting to discussion forums, and instant messaging) will be related to the frequency of cognitive distortion. Specifically, different types of reported internet use will be related to varying degrees of cognitive distortion.

Rationale for Hypothesis 1: There has been a great deal of research that demonstrates how cognitive distortions play a significant role in the initiation and maintenance of psychopathology and maladaptive behavior, and are manifested at a higher frequency in Axis I and Axis II disorders (Rosenfield, 2004; DiTomasso, Martin, & Kovnat, 2000; Freeman, Pretzer, Fleming, & Simon, 1990, 2004; Freeman & Fusco, 2000; Beck, 1976). However, there has been no investigation into cognitive distortions and their relationship to internet use. This study is designed to fill those gaps in the literature.

Hypothesis 2 (Type of Use and Personality Traits): Amount of internet use by type of internet use (i.e. pornography, gambling, gaming, social networking sites, blogging, searching/Googling, shopping, twittering, online dating, online media viewing, online courses, and computer mediated communication like chatting, emailing, posting to discussion forums, and instant messaging) will be related to personality traits (i.e. extraversion, conscientiousness, openness to experience, and neuroticism) according to the five-factor model of personality by Costa & McCrae. Specifically, it is hypothesized that each of the different types of internet use will be related to different personality traits, as well as to the severity of personality traits.

Rationale for Hypothesis 2: There has been some investigation in the last decade into personality factors that are associated with internet use (Amichai-Hamburger, 2005; Amichai-Hamburger, Wainapel, & Fox, 2002; Hamburger & Ben-Artzi, 2000). There was one study by Landers & Lounsbury (2006) that closely resembles the proposed study. Landers & Lounsbury correlated different types of internet use with the Big-Five personality factors and found certain personality traits correlated differentially to different types of internet use; however, this study used the Adolescent Personal Style Inventory (APSI) and investigated only a few types of internet use such as email, chat, music, role-playing, shopping, research, and course participation on-line. The proposed study will expand the scope of investigation into other types of internet use and also use the BFI, which is an instrument developed by John, Donahue, & Kentle (1991) and is more applicable to a population of adults.

Hypothesis 3 (Type of Use and Relationship Dissatisfaction): Amount of internet use by type of internet use (i.e. pornography, gambling, gaming, social networking sites, blogging, searching/Googling, shopping, twittering, online dating, online media viewing, online courses, and computer mediated communication like chatting, emailing, posting to discussion forums, and instant messaging) will be related to level of relationship dissatisfaction. Specifically, different types of internet use will relate to varying levels of relationship dissatisfaction.

Rationale for Hypothesis 3: It has been well-documented that pathological internet use can result in dysfunction in multiple facets of an individual's life (i.e. family, interpersonal relationships, occupational, intimate relationships, leisure activities) (Zillman & Bryant, 1984, 1988; Oddone-Paolucci, Genuis, & Violato, 2000; Bridges, Bergner, & Hesson-McInnis, 2003). The negative outcomes associated with pornography have been especially virulent to intimate relationships (Manning, 2006). The dysfunction associated with offline pornography

consumption (Zillman & Bryant, 1984, 1988) can easily be generalized to online pornography

consumption (Oddone-Paolucci, Genuis, & Violato, 2000). Several studies have documented

these findings (Bergner & Bridges, 2002; Schneider, 2000). However, there seems to be a gap in

the literature in terms of the perceived relationship satisfaction of the pathological internet user.

Most research in the last two decades has researched the impact of pathological internet use on

the user's partner and family (Bergner & Bridges, 2002; Manning, 2006). These findings have

the potential to be very different from the internet user's perspective. This does not seem to be

addressed in the literature. Therefore, this study will be instrumental in bridging these gaps.

Hypothesis 4 (Type of Use and Total Usage Time Characteristics): Amount of internet

use by type of internet use (i.e. pornography, gambling, gaming, social networking sites,

blogging, searching/Googling, shopping, twittering, online dating, online media viewing, online

courses, and computer mediated communication such as chatting, emailing, posting to discussion

forums, and instant messaging) will be related to total amount of time of internet use.

Rationale for Hypothesis 4: Previous research has shown that certain types of internet

use have been associated with pathological and excessive use, specifically, online pornography,

gambling, and gaming (Young, 1996, 1998, 2009; Shapira et al., 2003; Griffiths, 2000, 2001,

2003; Grusser, Thalemann, & Griffiths, 2007) . However, there has been no investigation into

the newer types of internet use such as blogging, twittering, and social networking sites and the

potential for abuse of these internet mediums. The bulk of the literature does allude to the

potential for these newer types of use also to become pathological and result in the negative

outcomes associated with other types of use.

Hypothesis 5 (Type of Use and Gender): Amount of internet use by type of internet use

(i.e. pornography, gambling, gaming, social networking sites, blogging, searching/Googling,

shopping, twittering, online dating, online media viewing, online courses, and computer

mediated communication such as chatting, emailing, posting to discussion forums, and instant

messaging) will be related to gender.

Rationale for Hypothesis 5: Research has shown that specific types of internet use are

more frequently associated with men; these include types such as online pornography (Peterson

& Hyde, 2010; Philaretou, Mahfouz, & Allen, 2005; Malamuth, Addison, & Koss, 2000),

gambling (Burger, Terry, Dahlgren, MacDonald, 2006; Ladd & Petry, 2002), and gaming (Ko,

Yen, Chen, Chen, & Yen, 2005; Chiu, Lee, & Huang, 2004). In addition, one study

demonstrated that internet addiction was most prevalent among middle-aged Caucasian males

with a 4-year academic degree (Young, 2007). Other types have been associated with women,

such as online shopping (Joines, Scherer, & Scheufele) and blogging (Guadagno, Okdie, & Eno,

2008). However, many types of use have not been shown to be associated with either gender;

therefore, the present study will investigate that missing area of research and also further lend

support to other studies that have demonstrated relationships to gender.

Hypothesis 6 (Amount of Use and Unemployment): Amount of internet use will be

related to duration of unemployment.

Rationale for Hypothesis 6: Individuals that are unemployed would have more free time

available to them to use the internet. It has also been demonstrated that different types of internet

use can become highly addictive, specifically, pornography, gaming, gambling, shopping, social

networking, and twittering (Young, 2009, 2007, 2004; Griffiths, 2001, 2000; Young, 1999, 1998,

1996b). A greater amount of unstructured time allows for pathological internet habits to develop

(Young, 1998).

Hypothesis 7 (Users versus Nonusers of Internet Pornography): There will be a distinct difference between users versus nonusers of internet pornography, specifically in relation to frequency of cognitive distortion, severity of personality traits, and degree of relationship dissatisfaction.

Rationale for Hypothesis 7: Historically, there has been a dearth of research on the relationship between internet pornography, cognitive distortions, personality traits, and relationships dissatisfaction. However, according to Eysenck's model of personality, psychopathy was found to be a personality factor in deviant sexual behavior, as well as in pornography consumption (Williams, Cooper, Howell, Yuille, & Paulhus, 2009). Specific personality traits that distinguish internet pornography users from nonusers have not been addressed in the current body of literature. Cognitive distortions have also been well documented in the sexual offender population (McGrath, Cann, & Konopasky, 1998; Howitt & Sheldon, 2007), for whom cyber pornography consumption is a prominent activity.

In addition, a large segment of the research has highlighted the relationship between pornography consumption and interpersonal and intimate relationship dysfunction (Schneider, 2000a; Schneider, 2000b; Bergner & Bridges, 2002; Cooper, Galbreath, & Becker, 2004); however, the bulk of this research investigates diminished relationship quality from the intimate partner's perspective (Bridges, Bergner, & Hesson-McInnis, 2003). Sufficient research has not been conducted on the pornography user's perceived relationship quality or satisfaction.

Hypothesis 8 (Users versus Nonusers of Internet Gambling): There will be a distinct difference between users versus nonusers of internet gambling, specifically in relation to frequency of cognitive distortion, severity of personality traits, and degree of relationship dissatisfaction.

Rationale for Hypothesis 8: Research has shown that cognitive distortions affect individuals with pathological gambling (Fisher, Beech, & Browne, 1999; Delfabbro & Winefield, 2000; Xian, Shah, Phillips, Scherrer, Volberg, & Eisen, 2008); however, there has been no investigation into this phenomenon in internet gamblers. Additionally, there has been significant investigation into the negative outcomes associated with pathological gambling, specifically, relationship and family dysfunction (Lorenz & Yaffee, 1988). Although, similar to the relationship research on pornography, literature that supports a decrease in relationship quality was assessed via the self-report of the partner (Lorenz & Yaffee, 1988). There has been limited investigation into the relationship satisfaction of the gambling consumer. Finally, there has been investigation into the personality traits associated with high-risk behaviors (Hamburger & Ben-Artzi, 2000) and offline gambling (Martinotti, Andreoli, Giametta, Poli, Bria & Janiri, 2006); however, there has been insufficient research conducted on the personality traits associated with internet gamblers. A summary of the hypotheses, rationale for individual hypotheses, analyses, and measures is provided in Table 2.

Table 2

Hypothesis Summary

Hypothesis	Rationale	Analyses and Measures
H1 (Type of Use and Cognitive Distortions): Amount of internet use by type of internet use will be related to the frequency of cognitive distortion. Specifically, different types of reported internet use will be related to varying degrees of cognitive distortion.	▪ Some types of internet use have been shown to be more pathological than others. ▪ Cognitive distortions have been associated with pathology. ▪ Different types and amounts of internet use will be related to different frequencies of cognitive distortion amongst participants.	Regression analysis will assess the relationship between the amount of internet use by type of internet use and frequency of cognitive distortion via the Inventory of Cognitive Distortion (ICD), Brief Internet Use Questionnaire (BIUQ), and Demographics Questionnaire (DQ).
H2 (Type of Use and Personality Traits): Amount of internet use by type of internet use will be related to personality traits. Specifically, it is hypothesized that each of the different types of internet use will be related to different personality traits and severity of traits.	▪ Some types of internet use have been associated with specific personality traits. ▪ Increased amounts of certain types of internet use known to be associated with specific personality traits could indicate a greater severity of these traits.	Regression analysis will assess the relationship between the amount of internet use by type of internet use and the difference and severity of personality traits via the Big Five Inventory (BFI), Brief Internet Use Questionnaire (BIUQ), and Demographics Questionnaire (DQ).
H3 (Type of Use and Relationship Dissatisfaction): Amount of internet use by type of internet use will be related to level of relationship dissatisfaction. Specifically, different types of internet use will relate to varying levels of relationship dissatisfaction.	▪ Certain types of internet use have been associated with relationship dysfunction. ▪ Increased amounts of these types of use could increase relationship dissatisfaction.	Regression analysis will assess the relationship between the amount of internet use by type of internet use and the degree of relationship dissatisfaction via the Relationship Assessment Scale (RAS), Brief Internet Use Questionnaire (BIUQ), and Demographics Questionnaire (DQ).
H4 (Type of Use and Total	▪ Specific types of	Regression analysis will assess the

Usage Time Characteristics): Amount of internet use by type of internet use will be related to total amount of time of internet use.	internet use have been associated with pathological use, such as pornography, gambling, and gaming. ▪ These forms of use should display greater total use.	relationship between the amount of internet use by type of internet use and the total amount of time of internet use via the Brief Internet Use Questionnaire (BIUQ) and Demographics Questionnaire (DQ).
H5 (Type of Use and Gender): Amount of internet use by type of internet use will be related to gender.	▪ Certain types of internet use have been shown to be used differentially by males and females.	MANOVA will assess the relationship between the amount of internet use by type of internet use and gender via the Brief Internet Use Questionnaire (BIUQ) and Demographics Questionnaire (DQ).
H6 (Amount of Use and Unemployment): Amount of internet use will be related to duration of unemployment.	▪ Unstructured time has been shown to be a risk factor in addiction. ▪ Research has shown the internet to be an addictive medium. ▪ Unemployed individuals have greater amounts of unstructured time.	A correlation will be conducted to assess the relationship between amount of internet use and duration of unemployment via the Brief Internet Use Questionnaire (BIUQ) and Demographics Questionnaire (DQ).
H7 (Users versus Nonusers of Internet Pornography): There will be a distinct difference between users versus nonusers of internet pornography, specifically in relation to frequency of cognitive distortion, severity of personality traits, and degree of relationship dissatisfaction.	▪ Research has demonstrated consumption of pornography to be pathological. ▪ Pathology has been associated with cognitive distortion, personality traits, and relationship dysfunction. ▪ Individuals who choose to engage in pathological behavior are likely to be different from individuals who do not engage in pathological	MANOVA will be conducted to assess the difference between users versus nonusers of internet pornography, specifically in relation to frequency of cognitive distortion, severity of personality traits, and degree of relationship dissatisfaction via a comparison of scores on the ICD, BFI, RAS, DQ and BIUQ.

	behavior.	
H8 (Users versus Nonusers of Internet Gambling): There will be a distinct difference between users versus nonusers of internet gambling, specifically in relation to frequency of cognitive distortion, severity of personality traits, and degree of relationship dissatisfaction.	▪ Research has demonstrated gambling to be pathological. ▪ Pathology has been associated with cognitive distortion, personality traits, and relationship dysfunction. ▪ Individuals who choose to engage in pathological behavior are likely to be different from individuals who do not engage in pathological behavior.	MANOVA will be conducted to assess the difference between users versus nonusers of internet gambling, specifically in relation to frequency of cognitive distortion, severity of personality traits, and degree of relationship dissatisfaction via a comparison of scores on the ICD, BFI, RAS, DQ and BIUQ.

Chapter 4: Methods

Overview

This survey study was designed to examine how various amounts and varieties of internet use (i.e. pornography, gambling, gaming, social networking sites, blogging, searching/Googling, shopping, twittering, online dating, online media viewing, online courses, and computer mediated communication such as chatting, emailing, posting to discussion forums, and instant messaging) are related to degree of cognitive distortion, relationship satisfaction, and personality traits. The measures used in this study include the following: The Inventory of Cognitive Distortions (ICD) (Yurica, 2002), The Relationship Assessment Scale (Hendrick, 1988), and the Big Five Inventory (BFI) (John, Donahue, & Kentle, 1991). Internet use was assessed by self-report via questions on a Brief Internet Use Questionnaire (BIUQ) and Demographics Questionnaire (DQ) developed by the examiner.

Design and Design Justification

This was an online survey study using a non-experimental design and focusing on the relationship between internet use and cognitive distortions, personality traits, and relationship dissatisfaction. Several statistical analyses were used to assess the relationship between variables including: regression analysis, correlation, and MANOVA. Information was obtained from participants via self-report on the ICD, BFI, RAS, DQ, and BIUQ. Research in this area is still preliminary and variables needed to be identified before they could be manipulated in an experimental environment in future studies.

Participants

A total of 525 participants were recruited in the current study. Participants in the study were internet users. They remained anonymous throughout the study and reserved the right to

withdraw at any time and for any reason. The study recruited participants that represented the

population, both in ethnicity, and in culture. Participants from a variety of socioeconomic

circumstances, and from both genders were sampled.

Inclusion Criteria

This study included participants who were between 18 and 85 years of age who engaged

in internet use. Additionally their self-reports must have indicated that they had completed at

least sixth grade and had the ability to read English at that level.

Exclusion Criteria

Individuals under the age of 18 or over 85, or those who do not use the internet were

excluded from this study. In addition, individuals that were not able to read at a 6th grade level in

order to complete the surveys or were impaired due to mental health issues, substance use, or

cognitive or memory deficits were excluded. These criteria were determined by the participants'

own judgment and self-report. According to the participants' own self-report and judgment, they

must not have had any memory impairment, cognitive impairment, intoxication, or active

psychosis.

Screening Procedures

The inclusion criteria for the study as outlined above was clearly delineated on the first

page of the online survey that appeared when the online hyperlink was clicked. If participants

met the criteria, they self-selected and proceeded with participation in the study. In the first page

of the online survey, participants self-reported that they met the 18 year-old age requirement to

proceed with the study. Additionally, if a participant reported information on the BIUQ that was

not consistent with the inclusionary criteria for the study, their information was then excluded

from the study.

Recruitment

Participants who matched the inclusion criteria listed above were recruited via the snow balling technique. Specifically, participants who were already enrolled in the study forwarded the hyperlink to others so that they had the opportunity to participate as well. Moreover, the initial participants were recruited from Facebook, a social networking site, as well as by email and phone, online forums, discussion boards, blogs, online groups, and chat rooms that included individuals who engaged in the types of internet use that was examined in this study. This process continued until enough participants enrolled in the study.

Informed Consent Procedures

When participants clicked on the hyperlink for the study, they were shown a page containing the purpose of the study, the risks, the inclusionary and exclusionary criteria of the study. If they wished to proceed with the study, they agreed to participate electronically via checking a box and clicking the submit button. This indication was acknowledged as consent to participate. A consent form was not used, because no identifying information was collected by the examiner and the form would have been the only information that could have linked the identity of the participant to the study. They were made away prior to the start of the study that they had the ability to withdraw from the study at any time.

Measures

Inventory of Cognitive Distortion (ICD). The Inventory of Cognitive Distortions (ICD) is a five-point Likert scale self-report inventory, which contains 69 items. The score range for the ICD is from 69 to 345. The items are brief sentences which contain 11 cognitive distortions that have been factor analyzed. The higher scores display a greater degree of cognitive distortion.

The initial validation study, which compared clinical outpatients with a nonclinical control group, displayed good test-retest reliability, .998 (n = 28, p < .001) (Yurica, 2002). The criterion validity was also excellent in the initial study, which compared clinical outpatients from a nonclinical control group (F = 15.2, df = 169, p < .0001) (Yurica, 2002). The utility, validity, and reliability have been further supported by Rosenfield (2004) when assessing individuals with Axis I and Axis II disorders, and again by Uhl (2007) when examining cognitive distortion amongst a medical population.

Relationship Assessment Scale (RAS). The Relationship Assessment Scale is a seven-item, five-point Likert-scale measure designed by Hendrick (1988) to assess relationship satisfaction. Scores greater than or equal to 4.0 indicate greater relationship satisfaction, whereas scores of 3.5 or lower indicate greater dissatisfaction. According to Hendrick, Dicke, and Hendrick (1998), "The RAS assesses general satisfaction, how well the partner meets one's needs, how well the relationship compares to others, regrets about the relationship, how well one's expectations have been met, love for partner and problems in the relationship" (p. 138). Although initially designed for married partners, it has been revised since its inception and maintains high internal consistency (Hendrick, Dicke, & Hendrick, 1998).

For its revision, two additional items were added for a total of seven items and there was also a revision of some of the terms used in the items. For example, the word "marriage" was changed to "relationship," and "mate" was changed to "partner" (Hendrick, Dicke, & Hendrick, 1998). These changes made this measure applicable to any couple in an intimate relationship, such as dating, married, ,cohabiting or engaged (Hendrick, Dicke, & Hendrick, 1998). The test-retest reliability for the RAS was .85 (Hendrick, Dicke, & Hendrick, 1998). The inter-item correlation of the RAS is .49 with an alpha of .86 (Hendrick, Dicke, & Hendrick, 1998). The

measure has also been studied for use in multicultural couples (Hendrick, Dicke, & Hendrick, 1998).

It is also highly correlated (.80 in one study and .88 in another) with the Dyadic Adjustment Scale (DAS), which is another measure of relationship satisfaction (Vaughn & Baier, 1999; Hendrick, Dicke, & Clyde, 1998). A primary reason for its inclusion in this study is its brevity, degree of ease with which it can be administered, which is significantly greater than the other measures of relationship satisfaction available (Vaughn & Baier, 1999, Hendrick, Dicke, & Hendrick, 1998).

Big Five Inventory (BFI). The Big Five Inventory (BFI) is a 44 item self-report inventory designed to measure the five domains of personality, based on the five factor model (John, Naumann, & Soto, 2008; John, Donahue, & Kentle, 1991). The traits assessed by the BFI include: Neuroticism, Extraversion, Agreeableness, Openness to Experience, and Conscientiousness. Each dimension is assessed using 7 to 10 short phrase items, which are rated on a five point Likert scale. The validity of the BFI is convergent with other measures assessing the five factor model (John & Srivastava, 1999). It has been shown to be a valid and reliable measure of the five factors of personality (Rammstedt & John, 2007; Benet-Martinez & John, 1998). In a study of personality and blogging, Guadagno, Okdie, & Eno (2008) further showed the reliability of the five traits: neuroticism ($\alpha = .79$), openness to experience ($\alpha = .78$), agreeableness ($\alpha = .85$), extraversion ($\alpha = .86$), and conscientiousness ($\alpha = .71$). In other studies of internet and personality, the personality traits on the BFI have demonstrated a high internal consistency (α ranging from 0.69 to .85) (Amichai-Hamburger, Lamdan, Madiel, & Hayat, 2008; Bassili, 2006).

Brief Internet Use Questionnaire (BIUQ). The Brief Internet Use Questionnaire was developed by the examiner and included questions about types of internet use, average number of hours of each type of internet use per day, and highest number of hours in one day over the previous week.

Demographics Questionnaire (DQ). The Demographics Questionnaire was developed by the examiner and included questions about age, gender, level of education, race, occupation, duration of unemployment if unemployed, and average weekly amount of internet use.

Procedure

Prospective participants were recruited from Facebook, as well as by email and phone, online forums, discussion boards, blogs, online groups, and chat rooms that included individuals who engaged in the types of internet use examined in this study; these included the Huffington Post Front Page News comment sections, The Runner's Kitchen blog, Facebook Horoscopes discussion board, Facebook Causes discussion board, a Facebook group for World of Warcraft and gaming, a Facebook porn users group, a Facebook gamblers group, a New York City Facebook users group, a Facebook group for graduate students in psychology, a combined Facebook group for undergraduate and graduate psychology students, a Facebook group for Columbia University students and alumni, the "largest" Facebook users group, and a Facebook group for New York University students and alumni. First, prospective participants were sent a Facebook or email message asking for their participation, and the hyperlink for the study was presented. The message stated, "I am a clinical psychology doctoral student working on a study investigating internet use, thoughts, and feelings. If you would like to participate in my study, please click on the link below and you will be directed to the online survey. Please forward the link to other internet users." Second, the same message was posted to online blogs, discussion

forums, chatrooms, and online groups to expand the search further and gain greater heterogeneity

of the sample. When participants clicked on the hyperlink to the study, a page came up that

asked them to indicate that they were 18 years of age, and met the inclusionary criteria listed,

including: completion of at least sixth grade and the ability to read English at that level or higher,

and had no intoxication, no active psychosis, and/or cognitive or memory impairment. If they

clicked on yes, the participants were then taken to another page that provided information about

the study and risks to participants. It asked them to click on a box that indicated their

understanding, and then asked them to click on *submit* to proceed. Although informed consent is

not needed for this particular study, this page followed the basic principles of informed consent

and also explicitly stated that the participant had the right to end the study at any time. After

they had electronically agreed and proceeded, the four inventories were electronically

administered: ICD, BFI, RAS, DQ, and BIUQ. When the participants finished the study, if they

wanted to participate in a 50 dollar raffle, they entered by typing in their email addresses. No

email address was ever associated with a specific survey or with identifying information.

Because of the anonymity of this online survey, participants self-identified as gamblers,

pornography viewers, and users of other internet features. This information was taken at face-

value because it was not possible to confirm this information by the research investigator.

Potential Risk to Participants

The risk to participants was minimal. There was the possibility that they may have

become distressed by the questions included in the survey or by evaluating their internet use,

thoughts and relationships; however, the risk was minimal and they had the option of not

answering questions that were distressing to them or of withdrawing from the study at any time.

Potential Benefit to Participants

This study may have helped participants become more aware of how much time they spend on the internet as well as the strengths and weaknesses of their relationships. In addition, participants may have become more aware of certain thought patterns. However, there also may have been no significant benefit to individual participants.

Potential Benefit to Others

A majority of the population now spends a great deal of time on the internet engaging in a variety of activities, some of which have been associated in previous research studies with significant negative outcomes. There is no study that has measured how the internet may be associated with relationship dissatisfaction, personality traits, and cognitive distortions. The present study informed the field and users of the internet by increasing the knowledge concerning internet use, cognitive distortions, personality traits, and relationship dissatisfaction. This study provided evidence that can be used by mental health professionals to assess and treat at-risk individuals for pathological internet use. This study also provided a foundation for the investigation and development into new measures for assessing pathological internet use, relationships, and personality traits.

Procedures for Maintaining Confidentiality

No survey and demographic materials used in the study contained any identifying information from participants. If participants chose to leave their email addresses to engage in the 50 dollar raffle, this information was in no way associated with demographic or survey information or used in any way to identify the participant.

Chapter 5: Results

Descriptive Statistics

The total number of participants who started the survey (N = 525) differed considerably

from the actual number who completed; there was also a wide variation in measures completed.

Specifically, completed measures broke down as follows: the ICD (N = 141), BFI (N = 179), and

RAS (N = 165) as well as individual questions about demographic information and internet use.

These discrepancies were due to participants' options to refrain from answering questions for

any reason as well as the option of ending participation in the overall survey at will.

Additionally, many participants did not answer specific internet function questions, possibly

because they did not use those functions or may simply have simply missed those questions.

Therefore, the total number of participants who started the study (N = 525) varied from the

number of participants who completed the demographics questions and other measures. For

example, a participant may have a completed ICD score and reported internet hours correctly,

but may not have completed the RAS or the gender demographics question. Conversely, another

participant may have skipped the ICD measure, but completed the BFI, RAS, Brief Internet Use

Questionnaire, and the demographics questions. Thus, these differences will be reflected in

varying "N" values by measure as well as by question. The age range of the participants (N =

291) was from 18 to 77 with the mean age of 34.91 and a standard deviation of 13.9. The

participants' (N = 180) gender distribution consisted of 45 males and 135 females.   The

participants' (N = 286) ethnicity distribution consisted of 93.7 % Caucasian, .7 % African

American, 2.8 % Hispanic, 2.4% Asian, and .3% Biracial.

Levels of education of the participants (N = 289) consisted of 7.6% high school or GED,

13.1% some college, 6.6% 2 year college degrees, 32.5% 4 year college degrees, 31.5% master's

degrees, and 8.7% doctoral degrees. The employment percentage of participants (N = 289)

consisted of 70.6% employed full-time, 16.3% unemployed, and 13.1% employed part-time. For

unemployed participants (N = 73), duration of unemployment was 6.8% less than 1 month, 8.2%

1 month to 3 months, 6.8% 4 months to 6 months, 11.0% 7 months to 1 year, 11.0% more than 1

year, and 56.2% more than 2 years. The average weekly amount of internet use of the sample (N

= 286) ranged from 1 to 84 hours per week with the mean at 18.75 hours (SD = 15.9).

Hypothesis 1: Type of Internet Use and Cognitive Distortions

A linear regression analysis was conducted to assess the relationship between, on the one

hand, the number of hours of internet use by type (i.e. pornography, gambling, gaming, social

networking sites, blogging, searching/Googling, shopping, twittering, online dating, online

media viewing, online courses, and computer mediated communication such as chatting,

emailing, posting to discussion forums, and instant messaging) and, on the other hand, the

frequency of cognitive distortion. Results indicated that there was no significant overall

association between the average number of hours of internet use each day and highest number of

hours in one day over the previous week of internet use and frequency of cognitive distortion as

measured by the ICD (R^2 = .311, F(34, 107) = 1.418, p = .091). The regression coefficients

revealed that the average number of hours each day and/or the highest number of hours in one

day over the previous week of several types of internet use were found to be significant and

associated with cognitive distortion, including: the average number of hours each day of

participating in social networking use and the highest number of hours in one day over the

previous week of participating in social networking use; the average number of hours each day

of using the internet to search for information, the highest number of hours in one day over the

previous week emailing, and highest number of hours in one day over the previous week using

online media. These findings indicate that the total number of hours using the internet (average

per day and highest number of hours in one day) did not correlate with the frequency of

cognitive distortions. However, specific varieties of internet use: increased use of social

networking, emailing, and online media were associated with cognitive distortion. Refer to

Table 3 for a summary of the results.

Table 3

A Summary of Internet Use and Frequency of Cognitive Distortion Results

Type of Internet Use	*B*	*SE B*	*β*
Social Networking (D)	-11.305	5.401	-.850*
Social Networking (W)	6.755	2.536	.579*
Searching for Information (D)	13.879	4.539	.761*
Emailing (W)	-5.561	2.494	-.427*
Online Media (D)	-7.205	2.981	-.388*

Note. (D) denotes the category "average number of hours each day" and (W) denotes the

category "highest number of hours in one day over the past week.".*p<.05.

Hypothesis 2: Type of Use and Personality Traits

A linear regression analysis was conducted to assess the relationship between the number

of hours of internet use by type and the difference and severity of personality traits. Findings

demonstrate no significant overall association between the average number of hours each day

and highest number of hours in one day over the previous week of internet use and personality

traits, specifically, extraversion ($R^2 = .212$, $F(34, 145) = 1.145$, $p = .287$), neuroticism ($R^2 = $

.246, $F(34, 143) = 1.371$, $p = .104$), openness to experience ($R^2 = .135$, $F(34, 139) = .660$, $p = $

.918), agreeableness ($R^2 = .253$, $F(34, 145) = 1.446$, $p = .071$), and conscientiousness ($R^2 = .260$,

F(34, 141) = 1.460, p = .066) as measured by the BFI. The regression coefficients revealed that there were several traits found to be significant and positively associated with the average number of hours each day and/or the highest number of hours in one day over the previous week for various types of internet use. Extraversion was found to be associated with the average number of hours each day posting to online forums. Agreeableness was associated with the average number of hours each day shopping online, the average number of hours each day posting to online forums, and the highest number of hours in one day over the previous week participating in online courses. A relationship was also found between conscientiousness and the highest number of hours in one day over the previous week spent in emailing, the highest number of hours in one day over the previous week posting to online forums, and average number of hours each day participating in online courses. This finding illustrates the fact that increased emailing, posting to online forums, and taking online courses is associated with increased conscientiousness.

Neuroticism was found to be associated with the highest number of hours in one day over the previous week participating in social networking, the average number of hours each day blogging and highest number of hours in one day over the previous week blogging, the highest number of hours in one day over the previous week twittering, highest number of hours in one day over the previous week emailing, and average number of hour each day posting to online forums, and highest number of hours in one day over the previous week posting to online forums. This finding shows how increased social networking, blogging, twittering, emailing, and posting to online forums are associated with increases in neuroticism.

Openness to experience was found to be associated with the average number of hours each day posting to online forums and highest number of hours in one day over the previous

week posting to online forums. Therefore, increased posting to online forums is associated with increased openness to experience. Please refer to Table 4 for a summary of the results.

Table 4

A Summary of Internet Use and Personality Trait Results

Type of Internet Use	*B*	*SE B*	*β*	Personality Trait
Social Networking (W)	.069	.032	.270*	Neuroticism
Blogging (D)	-.615	.296	-.509*	Neuroticism
Blogging (W)	.355	.150	.542*	Neuroticism
Twittering (W)	-.712	.345	-.477*	Neuroticism
Emailing (W)	-.100	.046	-.392*	Neuroticism
Posting to Online Forums (D)	-.849	.378	.392*	Neuroticism
Posting to Online Forums (W)	.569	.228	.444*	Neuroticism
Posting to Online Forums (W)	-.554	.168	.585**	Conscientiousness
Emailing (W)	.070	.035	.326*	Conscientiousness
Online Courses (D)	.313	.155	.241*	Conscientiousness
Online Courses (W)	.099	.046	.248*	Agreeableness
Posting to Online Forums (D)	.602	.265	.380*	Agreeableness
Shopping (D)	.154	.062	.509*	Agreeableness
Posting to Online Forums (D)	.637	.298	.395*	Openness to Experience
Posting to Online Forums (W)	-.360	.172	-.391*	Openness to Experience
Posting to Online Forums (D)	.808	.368	.378*	Extraversion

Note. (D) denotes the category "average number of hours each day" and (W) denotes the category "highest number of hours in one day over the previous week." *p<.05. **p<.01.

Hypothesis 3: Type of Use and Relationship Dissatisfaction

A linear regression analysis was conducted to assess the relationship between the number of hours of internet use by type and the degree of relationship dissatisfaction. No significant overall association was found between the average number of hours each day or highest number of hours in one day over the previous week of internet use and relationship dissatisfaction (R^2 = .196, $F(34, 131)$ = .939, p = .569).

However, regression coefficients demonstrated that the average number of hours each day of "other types of internet use" (B = -.356, *SE B* =.136, β = -.349, p = .010) and highest number of hours in one day over the previous week of "other types of internet use" (B = .146, *SE B* = .070, β = .300, p = .039) were significant and positively associated with relationship satisfaction. Specifically, "other types of internet use" was associated with increases in relationship satisfaction. The majority of participants who reported use in that category indicated that their other type of "other" use was for "wedding planning" and "business" or "work" related activities.

Hypothesis 4: Type of Use and Total Usage Time Characteristics

A linear regression analysis was conducted to assess the relationship between the number of hours of internet use by type and average weekly total number of hours of internet use. Results indicated that there was a significant overall association between the average number of hours each day or highest number of hours in one day over the previous week of internet use and participants' average weekly total number of hours of internet use (R^2 = .629, $F(34, 148)$ = 7.377, p < .000).

This finding indicates that different types of internet use are associated with the increased, average, weekly, total number of hours spent using the internet, specifically, the

highest number of hours in one day over the previous week participating in social networking,

average number of hours each day searching for information, average number of hours each day

emailing, and highest number of hours in one day over the previous week using online media.

These types of internet use have been found to be most closely associated with participants'

average weekly total number of hours spent using the internet. Refer to Table 5 for a summary of

the results.

Table 5

A Summary of Internet Use and Total Weekly Usage Time Results

Type of Internet Use	*B*	*SE B*	*B*
Social Networking (W)	.869	.417	.177*
Emailing (D)	2.010	.903	.234*
Searching for Information (D)	3.187	1.000	.411**
Online Media (W)	1.894	.758	.234*

Note. (D) denotes the category "average number of hours each day" and (W) denotes the

category "highest number of hours in one day over the previous week." *p<.05. **p<.01.

Hypothesis 5: Type of Use and Gender

A multivariate analysis of variance (MANOVA) was conducted to assess whether or not

there was a difference between genders in the number of hours of internet use by type. The

results show that gender is significantly associated with the average number of hours each day or

highest number of hours in one day over the previous week of internet use (λ = .496, F (35) =

4.180, p = .000).

Specifically, females significantly engaged in following internet activities: highest

number of hours in one day over the previous week shopping online is more likely to be a female

internet activity (F (1, 178) = 8.910, p = .003). Conversely, males significantly engaged in the

following internet activities: average number of hours each day of online dating (F(1, 178) =

8.185) and highest number of hours in one day over the previous week of online dating (F(1,

178) = 9.313); average number of hours each day gambling online (F(1, 178) = 8.297) and

highest number of hours in one day over the previous week gambling online (F(1, 178) = 6.293);

highest number of hours in one day over the previous week gaming online (F(1, 178) = 5.085);

average number of hours each day of instant messaging (F(1, 178) = 6.074) and highest number

of hours in one day over the previous week of instant messaging (F(1, 178) = 6.692); average

number of hours each day participating in chat roulette (F(1, 178) = 5.563)and highest number of

hours in one day over the previous week participating in chat roulette (F(1, 178) = 4.922), and

average number of hours each day using internet pornography (F(1, 178) = 42.435) and highest

number of hours in one day over the previous week using internet pornography (F(1, 178) =

46.280); all p<.05. Refer to Table 6 for further details.

Table 6

A Summary of Internet Use and Gender

Type of Internet Use	μ hours of use	SE	Gender
Shopping (W)	1.581	.136	Female
Pornography (D)	.422	.055	Male
Pornography (W)	.636	.078	Male
Online Dating (D)	.200	.056	Male
Online Dating (W)	.222	.059	Male
Gambling (D)	.267	.071	Male

Gambling (W)	.511	.146	Male
Gaming (W)	1.011	.215	Male
Instant Messaging (D)	1.205	.269	Male
Instant Messaging (W)	1.318	.241	Male
Chat Roulette (D)	.033	.012	Male
Chat Roulette (W)	.089	.055	Male

Note. (D) denotes the category "average number of hours each day" and (W) denotes the

category "highest number of hours in one day over the previous week."

Hypothesis 6: Amount of Use and Unemployment

A Pearson r correlation was conducted to assess the relationship between the number of

hours of average weekly internet use and duration of unemployment as measured in months and

years. The results indicated that there is no significant association between the average number

of hours each day or highest number of hours in one day over the previous week of internet use

(i.e. pornography, gambling, gaming, social networking sites, blogging, searching/Googling,

shopping, twittering, online dating, online media viewing, online courses, and computer

mediated communication such as chatting, emailing, posting to discussion forums, and instant

messaging) and unemployment ($R^2 = .051$, p = .063).

Hypothesis 7: Users versus Nonusers of Internet Pornography

A MANOVA was conducted to assess the difference between self-reported users versus

nonusers of internet pornography, specifically in relation to frequency of cognitive distortion,

severity of personality traits, and degree of relationship dissatisfaction. Although the results

demonstrated that there was no significant overall difference between internet users who

endorsed the average number of hours each day ($\lambda = .960$, $F(7, 153) = .922^a$, p = .491, $\eta^2 = .040$,

μ hours = 1.16) and/or highest number of hours in one day over the previous week viewing internet pornography (λ = .632, $F(7, 153)$ = .747 [a], p = .632, η^2 = .033, μ hours = 1.63) and nonusers according to their frequency of cognitive distortion, severity of personality traits, and relationship dissatisfaction. A significant effect for the trait of conscientiousness was found to be a significant difference between the users of pornography and the nonusers ($F(1)$ = 4.350, μ^2 = 1.377, p = .039, η^2 = .027), specifically nonusers of pornography were found to be more conscientiousness (μ = 3.87, N = 228) when compared to users (μ = 3.56, N = 36).

Hypothesis 8: Users versus Nonusers of Internet Gambling

A MANOVA was conducted to assess the difference between users versus nonusers of internet gambling, specifically in relation to frequency of cognitive distortion, severity of personality traits, and degree of relationship dissatisfaction. The results indicated that there was no significant difference found between individuals (N = 19) who endorsed the average number of hours each day (λ = .986, $F(7, 154)$ = .310[a], p = .949, η^2 = .014, μ hours = 1.92) and/or the highest number of hours in one day over the previous week engaging in internet gambling (λ = .972, $F(7, 154)$ = .641[a], p = .721, η^2 = .028, μ hours = 3.44) and nonusers according to their frequency of cognitive distortion, severity of personality traits, and relationship dissatisfaction.

Chapter 6: Discussion

This study was intended to investigate the relationship between internet use, frequency of cognitive distortions, type and severity of personality traits, relationship dissatisfaction, gender and unemployment. Results obtained herein suggest that internet users, in general, have less psychopathology and relationship dysfunction than initially hypothesized. In terms of societal implications, this is an encouraging finding, given the ever-increasing pervasiveness and reliance on internet technology in our culture and in societies around the world. Specific findings are enumerated below.

Hypothesis 1: Type of Use and Frequency of Cognitive Distortion

The first hypothesis was that the amount of specific types of internet use would be related to the frequency of cognitive distortion. Although overall internet use was not found to be significantly related to degree of cognitive distortion, regression analysis demonstrated that several individual types of use were found to be significantly related to these maladaptive thinking patterns. Specifically, social networking, emailing, searching for information, and using online media were all associated with frequency of cognitive distortion.

Results indicating that seemingly innocuous forms of internet use such as social networking, emailing, searching for information, and using online media were associated with frequency of cognitive distortion was surprising, given the fact that these types of use are not typically associated with any significant psychopathology or ill effects. The bulk of the literature indicates that more virulent forms of internet use such as pornography, gambling, and gaming are associated with a host of negative outcomes, for example, interpersonal relationship dysfunction, decreased daily functioning, financial problems, and occupational issues (Allen, Emmers, Gebhardt, & Giery, 1995; Allen, D'Alessio, and Brezgel, 1995; Cunningham-Williams, Cottler,

& Compton, 1998; Oddone-Paolucci, Genuis, and Violato, 2000; Philaretou, Mahfouz, & Allen, 2005; Shapira et al., 2003; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001). Therefore, these less socially acceptable forms of internet use were expected to be associated with cognitive distortion as well as with increased relationship dysfunction. Consequently, it appears that there is a dose-response relationship between emailing, searching for information, and using online media, on the one hand, and cognitive distortion on the other hand. In other words, an excessive amount of these otherwise useful varieties of internet use are related to a propensity to engage in distorted thinking.

It appears that an interaction model of environmental triggers and inherent psychological/personality features may best describe the phenomenon, whereas an individual who is predisposed to increasing levels of psychopathology or features of personality disorders associated with cognitive distortion may be more likely to engage in increasing amounts of social networking, frequent emailing, and searching for information. Conversely, a continuous stream of online media and these environmental triggers may be a catalyst for cognitive distortions.

For example, the bulk of the literature suggests that pathological internet use is an addictive disorder. According to this theory, these problems may be described as being similar to compulsive behavior. For example, an individual has a certain level of anxiety which is relieved by checking his or her Facebook or email. This behavior is negatively reinforcing. This type of behavior, which can be seen in individuals with OCD symptomatology reduces anxiety and further perpetuates additional compulsive checking. Other issues such as difficulty with impulse control, dependence, emotion dysregulation, stimulation seeking as in ADHD or other Axis I and II disorders, or low self-esteem associated with an incompetence/failure schema may be additional reasons that individuals with increased frequency cognitive distortions (associated

with these disorders shown to correlate with excessive internet use) would find solace in easily

accessible internet features. It is possible that the more nefarious types of use, such as

pornography and gambling, were not found to be associated with cognitive distortion in this

study because the sample did not capture a sufficient number of individuals who engage in these

activities to be a representative sample or to have had severe enough pathology to render

significance to the statistical analysis.

Hypothesis 2: Type of Internet Use and Personality Traits

For the second hypothesis, the amount of internet use by type was expected to be related

to personality traits. Internet use overall was not found to be significantly associated with

personality traits; however, some individual relationships were found to be significant.

Specifically, extraversion was shown to be associated with posting to online forums, which

appears to be consistent with the extraverted personality type, specifically a desire to share

opinions or be outspoken with personality facets such as warmth, gregariousness, assertiveness,

activity, excitement seeking, and positive emotion. Extreme, maladaptive levels of extraversion

are associated with various personality disorders, including obsessive-compulsive, antisocial, and

especially histrionic (Costa & Widiger, 2005) However, this finding was contradictory to prior

research, which indicated the counterintuitive finding that extraversion is negatively correlated

with online social activities, such as discussion groups (Hamburger & Ben-Artzi, 2000). This

demonstrates the fact that there may be a variety of ways in which extraversion may be

manifested in internet behavior, as well as potential differences between the sampled

populations. It may also be that the present study may have captured the type of extravert that is

civically minded and passionate about expressing opinions via discussion groups, but does not

use a discussion group to "socialize;" whereas, the contradictory study was conducted in 2000 --

light-years ago in the evolution of the internet -- when internet use was far less common.

Additionally, Hamburger & Ben-Artzi (2000) may have captured a group of extraverts who may

be classified as "social butterflies," preferring to connect in-person as opposed to online. To

further clarify, some extraverts may use the internet to express opinions rather than to

"socialize," and when they do want to "socialize" they do it in-person; therefore, they would not

be endorsing online "socializing." Consequently, this explanation and a cohort effect could

account for the discrepancy between studies.

Similarly, because of the large gap in time between the two studies, and the way that

internet socializing is defined and enacted now is very different from how it was ten years ago.

In addition, how "online socializing" is qualified and defined is very subjective in general. For

example, Facebook is a social networking site used for online socializing, but simply reading

profiles on Facebook is arguably not an interactive activity. Although that specific behavior is

not necessarily social, instant messaging with someone via Facebook chat and posting

information and updates that other users may read would be considered socializing because of

the online interpersonal interaction. These examples illustrate how interpretation of those

specific behaviors is very subjective. Future research needs to better understand and distill these

nuances in internet studies.

Moreover, another plausible explanation is that different personality measures and

internet surveys were used in the two studies. Hamburger & Ben-Artzi (2000) and the present

study qualified types of internet use differently in the surveys presented to participants, the

former grouping together categories of internet use and the latter breaking down categories into

specific types of internet use, thus being more sensitive and able to differentiate varieties of use.

The different measures could also have also elicited different answers from participants.

Agreeableness was associated with online shopping, with posting to online forums, and taking online courses. Individuals with high levels of agreeableness can have personality facets that are characterized by trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness. However, maladaptively high levels of agreeableness, such as extreme trust or gullibility are associated with dependent, and to a lesser extent histrionic personality disorders. It seems that individuals would need to have a considerable amount of trust to engage in online shopping, taking courses, or to a lesser extent posting to online forums. For example, to make an online purchase or register for an online course, one would need to provide contact and credit card information. Moreover, the propensity for compliance makes dependent and histrionic individuals susceptible to persuasion and, by extension, advertising, thus making them more likely to shop in various venues.

At the very least, an email address is needed to post to online forums, and the posted information or opinion is on display for anyone on the web. If a poster's name is attached to his or her comment, there is a certain degree of trust and straightforwardness. Furthermore, most websites warn that even ostensibly anonymous posters may be identifiable by IP addresses. In addition, a poster could be commenting on a cause that he or she is passionate about, which would coincide with the facet of altruism.

Conscientiousness was related to taking online courses, emailing, and posting to online forums. It should not be surprising that internet use for academic purposes has been previously associated with conscientiousness (Landers & Lounsbury, 2006); furthermore, emailing and posting to online forums also appear to be consistent with conscientious behavior. For example, a conscientious individual may be diligent about returning email correspondences or feel compelled to post to an online forum because of dedication to a topic of interest. This is

consistent with the personality facets that encompass conscientiousness, such as competence, order, dutifulness, achievement striving, self-discipline, and deliberation.

Another interesting finding was that neuroticism, with facets including anxiousness, hostility, depression, impulsivity, vulnerability, and self-consciousness (Costa & Widiger, 2005), was found to be associated with participating in social networking, blogging, twittering, emailing, and posting to online forums. These types of internet use are consistent with the neurotic personality profile: specifically, someone who would compulsively check Facebook, updating his or her blog, updating their status on twitter, checking or sending email, and posting their opinions to online forums. Individuals with neurotic personality features maintain a self-focus and a pervasive anxiety that is consistent with the compulsive behaviors associated with these internet features.

However, the trajectory of these internet behaviors is not fully understood. For example, a neurotic individual may be more likely to seek out internet features that have an inherent self-focused quality to them. Many internet features involve distributing information about oneself and opinions. Engaging in these functions frequently may cause a well-adjusted person to become increasingly anxious and self-focused with the nature of these features focused on one's self-presentation, image, opinions, and life. Those high in neuroticism may believe that others (friends, family, and general public) are constantly evaluating every minute aspect of one's being, fueling even greater self-focus. Additionally, the internet can provide an immediate release for the sort of neurotic hostility that many have seen vented in these internet venues. Moreover, the ephemeral nature of online relationships may also be attractive to unstable individuals scoring high in neuroticism. High levels of neuroticism are found in most disorders of personality, but are most prevalent in those meeting criteria for Borderline Personality

Disorder (Costa & Widiger, 2005).   In addition, although narcissism was not specifically

addressed in this study, it should be noted that many social networking features also have a

narcissistic quality to them which allows some users to overtly self-promote, boast, and display

personality characteristics such as pretentiousness, grandiosity, conceitedness, or superiority

(Mehdizadeh, 2010). On the severe end of the personality spectrum, these traits can be most

readily associated with Narcissistic Personality Disorder (American Psychiatric Association

[DSM-IV-TR], 2000).

It is noteworthy that Neuroticism appeared to be significantly correlated with several

different types of internet use, a finding supported by prior research, specifically blogging

(Guadagno, Okdie, and Eno, 2008), social networking (Amichai-Hamburger, 2005; Maldonado,

Mora, Garcia, & Edipo, 2001; Hamburger & Ben-Artzi, 2000; McKenna, Green, & Gleason,

2002), and emailing (Landers & Loundbury, 2006). This research would also be expected to

generalize to Twitter, because the concept of Twitter (broadcasting and obtaining personal

information) is a smaller scale model of social networking sites. These types of internet use

seem to be consistent with individuals who feel more comfortable connecting through internet

features because of anxiety and instability in more intimate relationships.

However, prior research has not addressed whether individuals high in neurotic

personality traits are more likely to use these specific internet functions, or if frequent use of

these functions actually results in individuals becoming more neurotic, that is anxious, hostile,

depressed, impulsive, vulnerable, and self-conscious, or whether there is a complex interaction of

the two.

Hypothesis 3: Type of Use and Relationship Dissatisfaction

The expectation for the third hypothesis was that amount of internet use by type would be related to level of relationship dissatisfaction. The findings indicated that despite internet use and overall relationship dissatisfaction overall not being found to be significant, "Other" types of internet use were found to be associated with relationship satisfaction, rather than dissatisfaction. This finding was surprising until further data analysis, indicating specifically that the majority of participants who reported type of "Other" use was for "wedding planning" and "business" or "work" related activities. Of course, individuals who are planning weddings may be more likely to be in stable or committed relationships and are satisfied enough with their relationship to get married. Moreover, individuals who are engaging in "business" related internet activities are most likely to be gainfully employed and may have reduced financial stress, which could lead to more stable and/or satisfying relationships. Conversely, it was surprising that contrasting types of internet use were not associated with relationship dissatisfaction, especially given the relationship dysfunction previously found to be associated with pornography (Schneider, 2000a; Bergner & Bridges, 2002) and gambling (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001; Cunningham-Williams, Cottler, & Compton, 1998).

Hypothesis 4: Type of Use and Total Usage Time Characteristics

For the fourth hypothesis, it was expected that amount of internet use by type would be related to total amount of time of internet use. In other words, those engaging in specific varieties of internet activity were expected to spend more time on the internet than those not engaging in such behavior. It was found that participants' overall weekly average total hours of internet was significantly associated with several types of internet use, specifically, participating in social networking sites, searching for information, emailing, and viewing online media. The other types

of internet use, including blogging, shopping, twittering, chatrooms, online dating, gambling, posting to online forums, gaming, instant messaging, chat roulette, pornography, online courses, and "other" types of use were not associated with increased use. This is not surprising given the ubiquitous and ever present nature of these functions, especially since the advent of iPhone and other handheld technologies as well as laptops that allow users immediate access to Facebook, email, music, media, or other similar features. Additionally, these functions are socially appropriate to access in just about any setting, whereas individuals may not be able to engage in online pornography, gambling, gaming, or similar features in work or public settings with the same level of frequency. It is expected that use of these internet functions and reliance on them will only increase in the future.

Hypothesis 5: Type of Use and Gender

It was hypothesized that the amount of internet use by type would be related to gender. Results indicated that gender was significantly associated with different internet uses. For instance, women were more likely to use the internet for online shopping. In contrast, men were more likely to use the internet for online dating, gambling, gaming, instant messaging, using chat roulette, and viewing internet pornography. It could be hypothesized that these gender differences may simply reflect social and gender-related trends in which many women would be more inclined to endorse that they like shopping (Hoch, 2007) or men, in comparison with women, would be more likely to reported enjoying pornography in comparison to women (Malamuth, 1996; Philaretou, Mahfouz, & Allen, 2005). Additionally, it is possible that men, in contrast to women, may be more likely to "comparison shop" online and make actual purchases in person (Hoch, 2007).

Some of these internet functions such as pornography, gaming, and gambling are consistent with the literature in these areas (Petry & Weinstock, 2007; Philaretou, Mahfouz, and Allen, 2005); however, determining that men were more likely to engage in instant messaging, online dating, and chat roulette were unexpected findings. One explanation could be that it may be easier for men to be assertive and interact socially via online features, whereas women may find face-to-face interpersonal interaction more comfortable. In addition, men may value, rely on, or use technology more easily, which could account for the multiple types of features that men use more frequently than women. It is of concern that men seem to gravitate more toward features that are substitutes for interpersonal interaction. These features have the potential to leave individuals at risk for interpersonal problems if relied on too heavily. For example, reduced face-to-face interactions could result in decreased social performance in person to person interactions, which could impact occupational advancement, intimate romantic relationships, networking, friendships, familial connection, and general well-being.

Hypothesis 6: Amount of Use and Unemployment

The sixth hypothesis proposed that amount of internet use would be related to duration of unemployment, resulting from increased use of the web as the length of unemployment increased. Although approaching significance, one of the most surprising findings of the study was that duration of unemployment was not significantly associated with internet use. This was surprising because previous studies on pathological internet use often point to unstructured time as a risk factor (Chak & Leung, 2004). It seemed illogical, therefore, that potential increases in amounts of unstructured time characteristic of unemployment did not demonstrate a relationship to hours of internet use, specifically for types of use that have most stereotypically been associated with internet addictions or pathological internet use, such as pornography, gambling,

gaming, or shopping (Shapira et al., 2003). It is possible that some of the participants who

reported unemployment are actually engaging in another unpaid activity such as caregiving,

volunteering, or odd jobs that would consume their unstructured time. Additionally, individuals

who are unemployed may be experiencing financial hardship and may have had to give up

luxury spending, such as internet service on their personal computers or internet capable phones.

Places where internet access is free, such as libraries, impose time limits; they also block some

types of internet content, such as media, pornography, and gambling. Low cost phone plans do

not have internet capabilities.

Hypothesis 7: Users versus Nonusers of Internet Pornography

It was expected that there would be distinct differences between users versus nonusers of

internet pornography. A MANOVA was conducted to examine the difference between users of

pornography and nonusers relative to the ICD, BFI, and RAS. Although overall results were

found to be insignificant, a significant difference was found between users of pornography and

nonusers in relation to conscientiousness. Specifically, nonusers were found to be more

conscientious than users of pornography. This finding is not surprising, given the socially

undesirable nature of pornography use. Individuals who participate in this pastime may be

characterized as less scrupulous or less heavily invested in socially appropriate behavior when

compared nonusers, although this may also be the result of a statistical anomaly or due to the

relatively small sample size of pornography users (N = 36). The fact that users of pornography

did not differ from nonusers on the other domains of interest was somewhat unexpected. The

average number of hours per day of internet pornography use was 1.16 with a range of 1-4 hours

and a standard deviation of 0.58 hours. For the question: the "highest number of hours in one

day over the past week," the average was 1.63 with the range of 1-4 hours and a standard deviation of 0.81.

Hypothesis 8: Users versus Nonusers of Internet Gambling

For the eighth hypothesis, it was also anticipated that there would be a distinct difference between users versus nonusers of internet gambling. No overall differences were found between users and nonusers of internet gambling relative to the frequency of cognitive distortion, personality traits, or relationship dissatisfaction. Although it is possible that there is no actual difference between users and nonusers, it appears more probable that the study did not capture enough individuals who engage in a significant amount of internet gambling. Therefore, the finding is most likely due to the small sample size ($N = 19$). The average number of hours per day of internet gambling was 1.92 hours with a range of 1-4 hours and a standard deviation of 1.16 hours. For the question: the "highest number of hours in one day over the past week," the average was 3.44 hours with a range of 1-10 hours and a standard deviation of 2.66 hours.

These findings are not consistent with the literature that points to pornography (Allen, Emmers, Gebhardt, & Giery, 1995; Oddone-Paolucci, Genuis, and Violato, 2000; Allen, D'Alessio, and Brezgel, 1995; Philaretou, Mahfouz, & Allen, 2005, Albright, 2008) and gambling (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001; Cunningham-Williams, Cottler, & Compton, 1998) as some of the most destructive types of internet use with a range of negative outcomes, such as interpersonal relationship dysfunction. It was expected that these types of internet use would be associated with a greater frequency of cognitive distortion, personality traits, and relationship dissatisfaction, which may still be accurate. This study may not have sampled the specific segment of the population in which these variables would be evident, specifically, the outer limits of a statistical bell-curve distribution.

In sum, several types of internet use were found to be associated with cognitive distortion, personality traits, and gender. There were also specific types of internet use that were predictive of total internet use. Nevertheless, unemployment was not associated with internet use. In addition, pornography users were found to be less conscientious compared with nonusers, but there was no difference found between users and nonusers of online gambling.

Limitations of the Study

Although some of these findings were interesting and have potential implications for individuals in the population at large, there are a number of limitations to the current study which will impact the findings' generalizability to the population in general. First, the participants were primarily drawn from Facebook, specifically, the contact list of the research examiner and those to whom these individuals passed the study hyperlink. Therefore, this may not be a representative sample, and the findings may either underestimate or overestimate the frequency of cognitive distortion, severity of personality traits, types of internet use, and relationship dissatisfaction in the population at large.

According to the reported number of hours of internet features often associated with pathology, such as pornography and gambling, the sample reported relatively infrequent activity in these areas. Consequently, the study may not have captured users on the extreme end of the spectrum. There may also be differences between individuals, based on complex interactions of the types of use. For example, individuals who use Facebook and engage in other types of internet, and individuals who use the internet to only engage in their pathological internet function of choice, such as pornography, could be considered distinct populations of users. In other words, someone who uses only Facebook may have a psychopathological and personality profile different from someone who uses Facebook and other types of internet use. Moreover,

these two types of users may be vastly different from an individual who uses the internet solely

for online gambling or pornography. Thus, this study may not have captured all of these

different types of internet users. The participants in this study also self-identified as users of

gambling, pornography, or other features. Although self-report data has been found to be

relatively valid (Paunonen & O'Neill, 2010), data gathered in the current study were taken at

face-value and could not be confirmed because of a lack of multiple measures and the anonymity

of the internet survey.

This study also did not examine psychopathology and personality factors between users

of the internet and nonusers who engage in another equivalent activity, such as television

viewing; this would have further clarified if individuals with psychopathology or certain

personality profiles seek out specific internet features, and if their level of psychopathology is

different from nonusers who engage in another activity.

Additionally, because of copyright laws as well as financial constraints, there were very

few measures that were permitted to be uploaded online for internet research. These constraints

limited the study in terms of the information that could be obtained from participants.

Specifically, the amount of information that could be obtained about personality factors was

limited. This study was able to investigate only the personality factors (Extraversion, Openness

to Experience, Neuroticism, Conscientiousness, and Agreeableness) associated with users and

fell short of gaining information about the facets that make up the five factors. The use of the

BFI as the personality for this study, which is expressly "brief," in comparison with the NEO-PI

may account for the lack of overall significant results with the personality model. It is also fairly

easy for participants to deduce the intent of the measure. This reactivity may alter the way

participants respond to the test items, which ultimately, could impact the results. If financial

obstacles, duration of survey, and copyright laws were not issues, then the NEO-PI by Costa &

McCrae may have been a more suitable measure, allowing information to be gained on the five

factors as well as the facets that make up the factors. There were also limitations in the survey

itself. For example, participants were able to skip questions that they felt uncomfortable

answering as well as opting out of the study anytime they chose, so there were numerous

participants who skipped questions and did not fully complete the survey. These factors affected

the sample size (N) that was used in the different statistical analyses that were conducted.

Consequently, the number of participants who initially started the study (N = 525) was far

greater than the number of participants who completed the specific measures and finished the

study (ICD = 141, BFI = 179, RAS = 165). The lack of a consistent "N" throughout the study

complicates interpretation of data and is a significant limitation to the statistical power and

generalizability of results.

        Moreover, the survey was based on retrospective participant self-report, which can be

biased and not completely objective. Also, some participants included a range of internet use

time or an approximation of time in some of their answers instead of a whole number or decimal.

For example, some participants wrote in "1-3 hours" of internet use, "20 plus hours," or "less

than one hour." In order to analyze that data for this study, these answers were converted to

whole numbers or decimals, such as "20" or "3.5." Therefore, a mean was used for all answers

that included a range, and for answers that were written as an approximation, the whole number

that was included was used. For instance, "20 plus" hours was converted to "20" or "less than 1

hour" was converted to "1." Because these were not exact measurements, these conversions may

impact the results of this study. However, it is hoped the overestimates compensate for

underestimates, and vice versa. The length of the survey was also rather long, which may have

impacted participant completion.

In addition, most of the participants (93.7%) who completed this study were Caucasian

and had greater than average educational attainment (72.7% four year degree or better).

Therefore, great caution should be taken when generalizing these findings to individuals of a

different cultural background or lower socioeconomic status. The questions of the survey may

have also been difficult to understand, because several participants included in the "other"

internet use categories, types of internet use that were asked for in another section. Therefore,

these answers were relocated to the proper, designated category. This misunderstanding may

have also been due to the length of the survey and to more careless responding toward the end of

the survey. The survey clearly stated the fact that it was anonymous; however, participants may

have been reluctant to report pornography use due to the social stigma and feelings of shame or

embarrassment about the topic. Although relationship dissatisfaction was examined in this

research study, the crux of "why" the dissatisfaction increased or decreased was not addressed.

Future Directions and Recommendations

Despite lack of statistical support for several of the present study's hypotheses, several

demonstrated significance and provide promising future directions for internet research. The

findings from the first hypothesis are promising, albeit unexpected. They help us to identify

types of internet use which are associated with cognitive distortion and psychopathology, as well

as illuminate the need for future studies to investigate further, the impact of these seemingly

innocuous types of internet use. For example, is there a dose-response relationship in which the

ill effects of usage continue to worsen with increased use, or is there eventually a ceiling effect?

Moreover, do individuals who have premorbid, significant cognitive distortion seek out these

forms of internet use as a potential coping mechanism or a manifestation of psychopathology,

such as in a depressive or anxiety disorder, or is there a variable inherent in these types of

internet use that causes an individual to become increasingly, more cognitively distorted? A

future study could assess the OCD features of individuals who use email or Facebook

compulsively, using a self-report OCD measure such as the Yale-Brown Obsessive Compulsive

Scale.

       Moreover, further investigation into the internet and technology use patterns of

individuals with full-fledged personality disorders, such as Antisocial, Narcissistic, and Avoidant

types would be of greater clinical utility than the personality factors identified in this study. The

self-focus that is emphasized in these types of internet use is also consistent with Narcissistic

personality features. This research appears to illuminate a societal shift towards narcissism,

which raises the question: Is the impact of technology on our culture making us as a society more

self-focused, or is the technology exploiting and drawing attention to the most narcissistic among

us? Future longitudinal studies will be needed to clarify this dichotomy.

       Further investigation into this area is warranted, especially because these internet

functions, such as Facebook and Twitter, are becoming increasingly prevalent amongst children

and adolescents. The posting to online forums was also shown to be associated with openness to

experience with personality facets including fantasy, aesthetics, feelings, actions, ideas, and

values. This seems logical, given the fact that online forums present an opportunity for diversity

of experience, freedom of opinion, and idea sharing. Although some of these findings are

consistent with previous research, such as the relationship between online shopping and

agreeableness (Wang & Yang, 2008), a personality trait that is consistent with the facets

including trust, straightforwardness, altruism, compliance, modesty, and tendermindedness

(Costa & Widiger, 2003), several of the new relationships between personality traits and different internet features will provide direction for future research to further clarify these discrepancies.

Future research should investigate further, the "pornification" or "sexualization" of American culture, specifically, the reasons why female body standards and behaviors found in pornography are becoming increasingly common in "real life" sexual relationships and the power of the social psychological phenomenon of modeling in this context (Oddone-Paolucci, Genuis, and Violato, 2000; Schneider, 2000a; Bergner & Bridges, 2002, Albright, 2008). In addition, further exploration is necessary into how these issues and internet pornography exposure will impact children and adolescents' sexual development and intimate relationships across the lifespan, such as a loss of interest in sexual activity (Boies, Knudson, & Young, 2004; Perry, Accordino, & Hewes, 2007). The age of users' first exposure to internet pornography, frequency, and content of erotica are factors that should warrant future investigation, especially because many children and adolescents have cell phones with computer accessibility as well as regular, and at times unsupervised, computer use. A qualitative interdisciplinary research study may be best to address this question. Future studies are also needed to clarify the reasons why men would be more inclined to use the internet for these activities, as well as the differences in internet use between genders.

Further investigation into how different cognitive distortions are associated with specific personality factors and facets, as well as how this potential relationship relates to personality disorders is needed. Although some research in this area has been conducted (Rosenfield, 2004), more is needed, especially in terms of assessment and treatment. The use of the ICD for assessment of cognitive distortion would continue to be the most appropriate

measure in clinical practice. However, in contrast to the BFI, the MMPI, MCMI, or NEO-PI for

personality assessment would be more appropriate measures to use in clinical practice or

research to accomplish these goals. Although the BFI has utility in identifying various

personality factors, the MMPI, MCMI, and NEO-PI gather more specific and detailed

information about personality functioning, which in clinical practice would be more appropriate

for identification of personality disorders. In addition, the ways in which personality disorders

may impact internet behavior and use as well as pathological internet use should warrant future

investigation.

Future research in CBT needs to further isolate the most effective components and their

applicability with various populations, particularly those which are known to be treatment

resistant (Robins & Hayes, 1993). Moreover, a specific evidence-based manualized CBT

treatment for pathological internet use needs to be developed, similar to other niche manualized

CBT treatments that were developed for specific disorders such as cognitive behavioral therapy

for insomnia (CBT-I) or trauma-focused CBT (TF-CBT) for trauma. This direction of clinical

practice may prove to be a promising treatment option that intersects many aspects of the current

study including relationship issues, personality traits, and how internet behavior mediates those

factors.

The findings from this study can be used as support for primary prevention, screening,

and early intervention of individuals who may be at risk for pathological internet use.

Specifically, individuals with impulse control issues, social deficits, or compulsive behavioral

tendencies, such as Asperger's Disorder, OCD, OCPD, ADHD, or a predisposition to addictions

may benefit most from early education and screening for pathological internet-use patterns. It

may also be beneficial for schools to conduct screening and provide referrals for children and

adolescents with maladaptive patterns of internet or technology use that is impacting their lives

or functioning. Currently, there appears to be no specific pathological internet use or technology

use checklists or objective measures available for children, adolescents, or their parents. It is

imperative that this gap in the assessment of children and adolescent be addressed immediately,

especially with the epidemic of technology related problems for this population in the past year,

including but not limited to: numerous suicides related to cyber-bullying and stalking, "sexting,"

school performance, social skills issues, and violence and relational aggression. The long-term

neuropsychological, physical, and psychosocial effects of this technology on youth are not fully

understood. Involving elementary, high schools, and colleges involved in this issue may be the

most cost effective way to get individuals the treatment they need, as well as to champion

psychoeducation, primary prevention, and early intervention. This may prove to be most

beneficial for individuals from disadvantaged backgrounds who, historically, already face

barriers in assessment and treatment.

It may also be especially helpful for clinicians to build some basic questions about

internet use into the standard clinical interview or intake evaluation form, such as Young (1999)

and Shapira et al. (2000). A simple screening measure, checklist, or brief questions may seem

insignificant, but they may yield a wealth of information about a client's functioning or lack

thereof and can enable a client to get the treatment he or she needs, or at the very least, identify

his or her internet or technology use as a behavioral factor that should be monitored. In the

future, it is expected that individual and specified screening instruments in the form of self-report

measures or brief checklists will be developed for individual types of internet use, such as

Facebook, online media, and gaming; however, until then, generalized checklists for technology

and internet use will have to suffice.

Conclusion

Although it may be assumed that excessive amounts and varieties of internet use are automatically problematic, it is important to note that significant time spent on the internet is not a maladaptive activity for all individuals. Internet use, especially online social support through internet communities, can be very adaptive for all segments of the population, especially individuals with mobility issues, geriatric populations, military families, estranged families, and individuals lacking in offline social support. Therefore, individual assessment (e.g. Functional Behavioral Analysis) of computer use, well-being, and daily functioning is needed by a mental health professional before any interventions or diagnoses should be considered. If clinical treatment or interventions are warranted, evidence-based treatment that focuses on strength-based behavioral interventions, such as CBT is highly recommended for internet addiction (Young, 2007). By combining cognitive interventions focused on cognitions associated with computer use, with pro-active behavioral activation activities and differential reinforcement of alternative behaviors, such as increasing socialization or positive off-line activities, daily functioning and well-being can be restored.

Finally, further prospective investigation is also needed to understand if individuals who are more highly pathological are more likely to use the internet, which is symptomatic of their pathology, or, conversely, to understand if there is something about the internet that causes someone to experience psychopathological symptomatology and dysfunction. In addition, research should address whether or not the communication and social benefits of the internet outweigh the various negative behavioral outcomes. As with most psychological research, the answer is most likely to be found somewhere in between.

In sum, the internet has many features that may make our everyday communication and daily living activities easier; however, there is also the potential for many negative behavioral outcomes. In addition, innovative and more accurate assessment measures are needed to gain information about how these internet features are affecting well-being and impacting functioning so that mental health and school professionals can provide better services in terms of psychoeducation, prevention, and early intervention, especially for children, adolescents, and young adults. This research has hopefully made a small contribution in uncovering factors associated with internet use, such as gender, cognitive distortion, personality traits, and relationship issues so that future research and assessment can better identify risk factors and markers for pathological and damaging internet and technology use.

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