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A Survey of Mental Health Professionals

Clinical Exposure to Problematic Computer Use

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Abstract

Surveys inquiring about clinical experience in treating problems related to excessive computer use were mailed to a random sample of 5000 mental health professionals in the United States. Of the 229 completed surveys, 67% identified treating someone with problems related to excessive computer use within the past 12 months. Lower than previously reported, an average of three clients had been treated, the majority over the age of 25. Games, chat and sexual uses were the top three problematic uses reported for aged 11-17 while sexual, on-line relations and chat were the most reported problems for those 18 and older. Half of those that had treated clients for problematic computer use do not diagnose it yet believe that it is or can be a distinct disorder. Depression, couples problems and anxiety were the most endorsed related issues. Cognitive Behavioral, Marital and Behavioral Therapy and Medication were the most reported treatment methods.

A Survey of Mental Health Professional's Clinical Exposure to Problematic Computer Use

From as early as 1980, the effects of excess computer use and dependency has been reported (Zimbardo, 1980). Along with the rising popularity of the Internet and computer gaming during the 1990's, reports of Internet addiction also began to appear in the popular press. Articles in newspapers, magazines, journals and Internet web sites reported various computer related Internet, gaming, sexual, gambling, e-mail and chat room addictions. "Addicts" supposedly used the computer and Internet excessively causing significant occupational, academic, financial, social, psychological and physical problems. On-line surveys, case studies, anecdotal evidence and clinician opinion were presented to warn the public of this potential epidemic. Clinics, specialized treatment recommendations and self-help books have emerged to support those afflicted. Unfortunately, very little research is available to support the existence and extent of the problem and to validate treatment methods.

Along with the growing media coverage, there has been significant debate as to whether or not this is a distinct disorder or the resulting symptoms of other psychological/psychiatric problems (Shaffer Hall & Vander Bilt, 2000) such as depression (LaRose, Lin, & Eastin, 2003), or impulse control disorder (Treuer, Fabian, & Furedi, 2001). While the entire issue (Volume 2, Issue 5) of a new journal CyberPsychology and Behavior (1999) was dedicated to Internet addiction, critics have questioned the research methods of some of these early studies (Kiernan, 1998; Grohol, 1999).

While some estimates of prevalence have been published, these estimates must be viewed cautiously. First, no agreement has been reached on the definition of the disorder or disorders. The early surveys using the diagnostic criteria borrowed from the DSM-IV's (American Psychiatric Association, 1994) criteria for Pathological Gambling, has been questioned. Second, most of the research has utilized on-line surveys, often with links advertised in areas of interest to those with problem Internet use. Nonetheless, online studies suggest that up to 6% of Internet users have a problem with computer and/or Internet addiction (Greenfield, 1999). A single random sample large-scale off-line survey (Sjoberg & Fromm, 2001) suggests that only 0.6% of Swedish computer users claim to be affected by Internet addiction. Whether it is 0.6% or 6%, with hundreds of millions of users online, problems related to computer use could represent a serious mental health problem.

While this researcher was employed at the Pepperdine (University) Resource Youth Diversion and Education (PRYDE) program at the Orange County Sheriff's Department (California) in 2002, two cases of serious adolescent behavioral problems related to excess computer use were referred. Besides cases that specifically present with computer use as a central issue, this researcher has observed many other cases where computer use is high and other problems such as declining academic functioning, family discord and other problems coexist. Informal discussion with counselors, parents, educators and others involved with adolescents further support the notion that excess computer use is a problem for some adolescents.

The reports of the various forms of computer and Internet addiction have come from a small number of clinicians and studies. In 1989, Margaret Shotton, in *Computer*

Addiction?, reported that not one mental health professional she surveyed in the U.K. had seen or treated anyone afflicted with computer addiction/dependency. Today there have been a number of published reports of those afflicted with these types of problems seeking clinical help. To date there has only been one study that surveyed clinicians regarding treatment. This study, "Cyber Disorders: The Mental Health Concern for the New Millenium" (Young, 1999) was conducted on-line and yielded only 35 respondents, 86% of which had treated Internet addiction. No research has been published that informs us to what extent mental health professionals actually see these problems in their clinical practice. The question remains, is problematic computer/internet use a significant mental health problem that merits further research?

This present exploratory study surveyed psychiatrists, psychologists, marriage and family therapists and licensed social workers regarding the adults and adolescents they have treated for problems related to the use of the personal computer or Internet. These mental health professionals were surveyed on the number of adolescents, young adults and adults they have treated within the past 12 months. It also questioned them on the types of problematic computer behaviors they treat and how they diagnose these problems, what coexisting pathology or issues were present and what techniques did they believe were effective in treatment. They were also asked whether or not they know someone personally rather than professionally with problems related to excess computer use.

Method

Design and Analysis

This study utilized a cross-sectional survey design to assess the quantity of clients treated for problematic computer/Internet use, within the past 12 months by mental health professionals that responded to a mailed postcard survey. Various diagnostic and treatment factors specific to problematic computer/Internet use were also surveyed.

Subjects

A systematic random sample of 5000 mental health professionals within the United States was drawn from a computer database obtained from a commercial mailing list service, Best Mailing Lists, Inc. (www.bestmailing.com) in November of 2003. Approximately equal quantities of labels categorized as psychologists (n=1667), psychiatrists (n=1666) and Marriage and Family Counselors (1667) were provided by the service and used to address survey post cards which were then mailed to all addressees. Of the 238 completed surveys received, 217 were self-identified as MD/Psychiatrist, Psychologist, Social Worker or Marriage and Family Therapist / Licensed Professional Counselor.

Materials

The postcard survey (Appendix A) contained an informed consent acknowledgement (at the top of the page) using a box for the participant to mark and a space for the date to be entered. The use of a mark rather than signature assured confidentiality and safety for the respondent. Five sets of questions followed, often with forced choice responses, these responses having been derived from the review of the

literature. The first question was a forced choice question that asked the participant to indicate what licenses/credentials they are practicing by circling one or more of the eight choices provided such as MD/Psychiatry, Psychology or Social Worker.

The second question (also forced choice) asked in what settings do they work (i.e. School, College, Hospital, Private, etc.). The third question had three parts. The first portion of the question asked how many individuals in three age groups (11-17, 18-25 and 26 year-of-age and older) have they treated over the past year for problems related to excessive computer use. The second portion of the question asked which of the eight problematic computer uses listed on the survey were identified for each of these same three age groups. The third portion of question 3 prompted the participant to select from a list of issues such as Anxiety and Depression related to those individuals treated.

The fourth question asked what techniques/models were found effective in treating the above clients. In addition to the 18 forced choice answers provided (to be circled), one fill-in answer space was provided. The fifth question consisted of three different parts to be answered based on their professional and personal experience and knowledge. The first part asked if they knew someone personally (not professionally) with problems related to excess computer use. The second part asked if they believed that computer/Internet addiction was a distinct disorder. And the third part of the question was open ended asking how do they most often diagnose it.

The survey instrument was printed on a postcard produced using the thickest allowable cardstock cut to the largest allowable dimensions, folded in half with a perforation at the fold. The open ends of the card (opposite the fold/perforation) was secured with a clear round adhesive tape (wafer seal) designed for this purpose. The card

was printed with the survey and on the opposite side, this researcher's return address (post office box). The return address side was also printed with the business reply mail permit number to allow free return postage for the respondents. The other remaining portion of the card contained the informed consent and the mailing address label for the addressee. The content of the consent and survey is shown in Appendix A. A telephone number and an Internet web site address was provided on the consent portion of the survey card (which they retain) providing a way to contact the researcher or to request a copy of the completed dissertation.

Procedure

Prior to printing the final survey instrument, a small pilot study (N=12) was conducted using therapists and interns known to the researcher to elicit feedback regarding the content and process of the survey. Information gleaned was incorporated in the final survey shown in Appendix A.

A total of 5,000 address labels equally divided by MD/ Psychiatrists, Psychologists and Marriage and Family Therapists were acquired from Best Mailing Lists, Inc. and affixed to the survey postcards. A tape seal was used to secure the open end of the post card, postage stamps were affixed and the post card survey was mailed in two sets (2500/mailing) on November and December of 2003 respectively. A total of 684 post cards were returned undeliverable due to insufficient or inaccurate address or no forward address or forwarding time expired. In total, 241 survey cards were returned.

The returned survey cards were evaluated for completeness and that the consent has been checked and/or dated. No cards were excluded for illegible, missing or erroneous responses. The missing or obviously inaccurate data was simply coded as

unanswered. Three returned postcards were excluded from analysis because consent was not dated or checked (two of which were not filled out at all). One card was rejected because a hand written note on the card indicated that the respondent was not a mental health professional. The data from the 238 included surveys was entered into an SPSS statistical database program for analysis. A preliminary analysis was performed to identify surveys with values well outside the mean. The means and standard deviation was computed for the number of individuals treated within each age group. A limit of two standard deviations was established to exclude "outliers" that might otherwise influence the survey results. It was assumed that responses so far out might have reflected a misunderstanding of the survey question. For the 11-17 year old age group any response greater than 8 was rejected. A response greater than 10 was rejected in the 18-25 year old age group as was a response greater than 20 for the 26 year old and greater age group. Any card containing at least one of these responses was rejected and values were deleted from the database. Ultimately, thirteen cards were excluded from the study. A simple analysis of the data from these respondents ("outliers") is presented in the next section.

Although the survey mailing used labels from a list identified as MD/Psychiatrists, Psychologists and Marriage and Family Therapists (MFT), respondents also included those self-identified as Licensed Professional Counselors, Social Workers, Substance Abuse Counselors and School Psychologists/Counselors. Licensed Professional Counselors (LPC) were added to the MFT list and the combined list renamed as MFT/LPC in the study. There were 30 respondents reporting multiple licenses and were coded under the single highest identifying license in the following order: MD/Psychiatry, Psychologist, Marriage & Family Therapist/Licensed Professional

Counselor (MFT/LPC), Social Worker, School Psychologist/Counselor, Substance Abuse, Intern/Prelicensed and Other. Social Workers were coded behind MFT/LPC to allow the data to be analyzed for those Social Workers that did not also work under an MFT/LPC license. A number of respondents (n=11) did not identify the professional license they were working under and were coded "Not Specified".

Results

This section describes the resulting sample population and presents the results of the research questions posed in this study. A total of 229 surveys from mental health professionals were included in the analysis with Table 1 presenting the breakdown by form of practicing license. Psychologists represented the largest group (n=127) of respondents with 56% of the survey responses. MFT/LPC's (n=30, 13%), MD/Psychiatrist (n=26, 11%), Social Worker (n=26, 11%), Substance Abuse Counselor (n=5, 2%), School Psychologist/Counselor (n=5, 2%) and Not Specified/Other (n=10, 4%) represented the remainder. The vast majority of respondents worked in a private practice settings (70%, n=161) while those reporting working in School (2%, n=4), College (4%, n=9) or Hospital (7%, n=15) settings totaled about half the remainder. Those reporting working exclusively in a Group Practice or Community Clinic represented 9% (n= 20) and 5% (n= 12) of the total respectively.

Two thirds of all surveyed (67%, n=153) reported having treated at least one person with problems related to excess personal computer use over the past 12 months. Table 2 details the percentage (by age group) of the mental health professionals surveyed that have treated these individuals. MFT/LPC subjects report having treated a greater percentage of these individuals (76%) than Social Workers (64%), Psychologists (67%)

and MD/Psychiatrists (56%). More than twice as many of these mental health professionals have treated individuals 26 years of age and older (56%) for problems related to excess computer use than have treated individuals 11-17 (27%) or 18-25 years-of-age (24%). While a significantly greater number of MD/Psychiatrists, Psychologists and MFT/LPC reported treating 11-17 year olds than 18-25 year olds, more Social Workers report treating 18-25 years olds (28%) than 11-17 year olds (24%).

Over the past 12 months, the mental health professionals surveyed treated an average of approximately three ($x=2.93$) individuals for problems related to excess personal computer use. The average number treated varied across practicing license and age group, with the results presented in Table 3. Of the top four respondent license categories, MFT/LPC practitioners reported treating the most with an average of 4.2. Social Worker reported an average of 3.0, MD/Psychiatrists treated 2.7 and Psychologists responding treating an average of 2.4 individuals. School Psychologist/Counselor and Substance Abuse Counselors report treating the most, both with an average of 5.6 individuals. Of all the mental health professionals surveyed, on average, at least three times as many 26 years of age and older individuals (1.87) were treated as either the 11-17 (0.62) or 18-25 (0.51) year old age groups.

The relative percentages of the reported problematic computer uses, presented in Table 4, vary considerably for each age group. Games were most often reported as a problematic use for 11-17 year olds (41%) by those surveyed that had treated this age group. Chat was reported second (34%), followed by Sexual uses (25%), On-line Relations (23%) and lastly Web Surfing (11%). Gambling, Shopping and Programming were not reported as a problematic use for this age group. For the 18-25 year-old age

group, sexual uses were reported most often as problematic (32%) with Online Relations (28%), Chat (21%), Games (18%) and Web Surfing (12%) following. Sexual uses of the personal computer was also reported most often (54%) by respondents treating individuals 26 years-of-age and older. Online Relations was reported second (32%) with Chat (19%), Games (13%), Web Surfing (13%), Gambling (13%) and Shopping (10%) significantly less often reported.

Table 5 presents the frequency and relative percentage of related issues reported by those surveyed. Depression was reported as a related issue by over two thirds (67%, n=103) of those surveyed that had treated at least one person for problems related to excess computer use (n=153). Couples problems were reported by over half (56%, n=79), Anxiety by 42% (n=64) followed by Impulse Control Disorder (28%), Sex Addiction (27%), OCD (20%), and ADHD (17%). Related problems including Substance Abuse (14%), Parenting Problems (12%), Sex Disorder (9%) and Sleep Disorder (7%) were also reported. The least reported related issues were Sleep Disorder (7%, n=11), ODD (4%, n=6), CD (4%, n=6), Psychosis (<1%, n=1) and Schizoid Personality Disorder (<1%, n=1).

Effective techniques, models or tools used to treat individuals with problems related to excess computer use was reported by 138 respondents and is presented in Table 6. The most reported technique, Cognitive Behavioral Therapy (CBT) was reported by 42% (n=62) of those responding. One third of the respondents reported Marital Therapy (34%, n=47), Behavioral Therapy (33%, n=45) and Medication (33%, n=44). Psychoeducation (29%, n=40), Family Systems (26%, n=36), Psychodynamic (25%, n=34) were reported as effective by a quarter of the respondents. Specific treatment

techniques such as Abstinence (18%, n=25), 12 Step Programs (18%, n=25), Controlled Usage (17%, n=24), Addiction Counseling (15%, n=11) and Control/Monitor Software (8%, n=11) were reported substantially less than the general techniques/theories mentioned above.

Mental health professional's beliefs regarding the question of whether or not computer/Internet addiction is a distinct disorder is presented in Table 7. For all mental health professionals surveyed that, by self-report, have not treated anyone for problematic computer use, 41% believed that computer/Internet addiction is not a distinct disorder. For those that had treated problematic computer use, 27% believed it was not a distinct disorder. The percentage of those who believed computer/Internet addiction was a distinct disorder was only slightly higher for those that had treated problematic computer use (18% vs. 14%). However the percentage that reported "Can Be" was more than double than those that had (32%) than for those that had not treated problematic computer use (14%). The percentage of "Don't Know" responses was 24% for those that had not treated problematic computer use while slightly less (19%) for those that had treated it. For those that had treated problematic computer use, the total of "Yes" and "Can Be" responses represented 50% of the responses with "No" responses representing only 27%. For those that had not treated problematic computer use, these numbers were virtually reversed 28% ("Yes" and "Can Be") and 41% ("No").

The majority (54%) of the mental health professionals surveyed that had treated problematic computer use report that they do not diagnose it. For those that do diagnose it, the highest reported diagnosis was Obsessive Compulsive Disorder (OCD) which was reported by 12% of those surveyed that also reported treating problematic computer use.

Table 8 presents the frequency of the most often used diagnoses reported. Depression was the next highest diagnosis associated with excessive computer use (9%, n=13) followed by Impulse Control Disorder (ICD) with 12 responses representing 8% of those reporting. Anxiety (7%, n=10), Relational Problems (3%, n=4), Sexual Addiction (2%, n=3), Addiction, Other and Social Avoidance/Phobia (2%, 3) were the next most frequent responses.

The final research question asked those surveyed whether or not they knew "someone (not professionally) with problems related to excess computer use". Overall, almost half (48%, n=103) of those that answered the question (n=216) said they did know someone with problems related to excess computer use. For those surveyed that had treated someone for problems related to excess computer use, 52% claimed they knew someone personally. Only 38% of the respondents that did *not* treat anyone with related problems claimed they knew someone with problems related to excess computer use. Table 9 presents the results for both those that had and those that had not treated anyone (for problems related to excess computer use) the percentages of the various mental health professionals responding "Yes" to the survey question. While the top four respondent categories all responded higher when they had treated someone, Marriage and Family Therapist/Licensed Professional Counselors reported a much larger difference (83% vs. 29%).

A brief analysis of the outlier group (the 13 cases excluded from the study) found that the average number of persons treated for problems related to excessive computer use was 14.4, 11.9 and 19.2 for age groups 11-17, 18-25 and 26 and older. This is substantially higher than the numbers 0.62, 0.51 and 1.81 treated within the same age

groups in the study. The average total number of individuals treated was approximately 47 for the outliers compared with 2.93 in the study. Significant differences were found in the number of reported problematic uses, related issues and effective techniques. It could be anticipated that given the greater number of cases treated by the outliers, the numbers in these areas would be higher but this was not always the case. While "Couples Problems" and "Parenting Problems" were reported by 56% and 12% of those treating problematic computer use respectively in the main study, the outliers only reported these related issues 23% and 8% of the time, or by nearly half. Approximately half of the respondents in the main study report knowing someone, other than professionally with problems related to excess computer use. Over three quarters of the outliers (77%) report knowing someone personally with problems related to excess computer use.

Discussion

The results of this study indicate that two thirds of the mental health professionals surveyed have treated at least one person with problems related to excessive personal computer use within the past 12 months. While this is lower than Young, Pistner, O'Mara & Buchanan (1999) reported, it still represents the vast majority of clinicians. The study also revealed that the mental health professionals surveyed have treated an average of three individuals over the past year with problems related to excess computer use. This number is only one-third of the number reported by Young et al. One explanation for the difference might be that over the past four years the number of clinicians treating and the number of patients treated for problematic computer use has declined. This explanation seems improbable given the increasing ownership and use of personal computers. A more likely explanation is that the sample in this survey is closer to a random sample than

Young et al. Rather than on-line, the survey in this study was mailed to a large, random sample of mental health professionals. Although the resulting sample was self-selected, the size of this sample was substantially larger (229 vs. 35), was free to mail/return, short and very convenient for those that had *not* treated anyone with problems related to excess computer use.

This study also reveals that more than half of those surveyed reported treating someone 26 years of age and older while the younger age groups 11-17 and 18-25 had been treated by only about a fourth each. The average number of individuals treated within these age groups presented an even greater discrepancy (1.81 for 26+ and 0.62 and 0.51 for age groups 11-17 and 18-25). This suggests that significantly more individuals 26 years of age and older are afflicted with problems related to excess computer use. This is understandable since significantly more of the population of the United States is above 26 years of age than are within the other two age groups combined (US Census Estimates, 2003). It does suggest, that while not previously investigated, adolescents (or their parents) and young adults do seek treatment for problems related to excessive computer use.

The result of this study further suggests that the uses of the computer considered problematic varies by age. Games were rated as the number one problematic use reported for the 11-17 age group, followed by chat, sexual uses, on-line relations and web surfing. With increasing age, reports of games as a problematic use decreased, from 41% for the 11-17 group to only 18% for the 18-25 group and 13% for the 26+ age group. Future research must consider distinct populations and must not, for example, use college student research to generalize to the adolescent population.

Sexual uses, on-line relations and chat were found to be top problematic uses for both the 18-25 and the 26+ age groups. As the age group increased, so did the percent response for sexual uses as problematic. The 26+ group reported more than double the percentage of reports that sexual uses were problematic than the 11-17 age group and 50% greater than the 18-25 year old group. As the age group increased so did the reports of problematic use of gambling and shopping. There were no reports of computer gambling or shopping as problematic within the 11-17 year old group and both were reported by only 4% of the 18-25% group. For the 26+ age group, gambling was reported by 13% and shopping was reported as problematic by 10% of the clinicians. Programming was reported as problematic by only 4% and 3% of the 18-25 and 26+ year age groups respectively. Web Surfing was reported as problematic by almost the same percentage for all three age groups (11%, 12% and 13%).

Prior research has been divided on the idea that problematic computer use is a distinct disorder and should be diagnosed and treated as such (Grohol, 1999; Shafer et al., 2000; Treuer et al., 2001). This study suggests that clinicians are also equally divided on this question. Half (50%) of those surveyed who have treated someone with problems related to excess computer use believe it is or can be a distinct disorder. Interestingly, for those that have *not* treated anyone, only 28% believe it is or can be a distinct disorder. The large number of "Can Be" responses (34%) for those that have treated problems related to excess computer suggests that some forms of problematic computer use may be seen as distinct and some are not. Perhaps under certain conditions, but not all, clinicians are finding clients with problems related to excess computer use isolated from other causal factors. This might explain the divisiveness of prior research. Further research is

necessary to identify what, if any, forms of problematic computer use can be considered distinct diagnosable disorders.

Consistent with Young (1998), Young et al. (1999), Black, Belsare & Schlosser (1999), Shapira, Goldsmith, Keck, Khosla, & McElroy (2000), Bai, Lin & Chen (2001) and Shapira, Lessig, Goldsmith, Szabo, Lazoritz, Gold & Stein (2003) a great number of DSM-IV Axis I conditions were endorsed by those surveyed as related to problematic computer use. The most reported related issue, depression, was reported by 67% of those treating problematic computer use. Couples problems (56%), anxiety (42%), impulse control disorder (28%) and sex addiction (27%) rounded out the top five related issues. Substance abuse (14%), parenting problems (12%), sex disorder (9%) and sleep disorder (7%) were also reported. Future research might investigate whether or not these related issues are a cause or result of problematic computer use. One method of isolating causality might be to remove computer use from those with problematic computer use and identify changes in reported related issues. Conversely, treating related issues using general treatment techniques as described in the following paragraph and monitoring changes in computer use could also serve to isolate causality.

The general treatment techniques (CBT, Marital Therapy, Behavior Therapy and Medication) were more often endorsed (45%, 34%, 33%, 32% respectively) than the specific treatment techniques such as 12 Step Program (18%), Controlled Usage (17%), Addiction Counseling (11%) or Control/Monitor Software (8%). This result is consistent with Orzack (1998), Young et al. (1999), Hall & Parsons (2001) and Williams (2002) yet does not identify whether these general treatment methods are used specifically to treat computer addiction or are treating underlying conditions. It is commonly accepted that

the general techniques listed above are appropriate methods for treating DSM-IV axis I conditions such as depression, anxiety, ICD and marital problems. Given that the general treatment methods were more endorsed than the specific methods, this suggests that much of problematic computer use may be a result of the related issues. Alternatively it may illustrate the lack of effective treatment methods specific to computer/Internet addiction. Only with additional research and the development and testing of new treatment methods will this be better understood.

This study found that more than half (54%) of the mental health professionals surveyed that have treated problematic computer use do not diagnose it specifically. The most often reported diagnoses were Obsessive Compulsive Disorder (OCD) (12%) and Depression (9%). Impulse Control Disorder (ICD), consistent with Shapira et al.(2003), was reported as a diagnosis by only eight percent of the respondents. Anxiety (7%), Relational Problems (3%), Sexual Addiction (2%) and Social Avoidance/Phobia (2%) were the next most endorsed responses. All others were reported by 2% or less of those surveyed. Only 3 responses (2%) suggested using some form of addiction-based diagnosis as suggested by Young et al. (1999) or Beard and Wolf (2001). One survey response reminded the researcher that no formal diagnosis exists for this disorder.

The results of this study also suggest clinicians that have treated someone with problems related to excessive computer use are more likely to know someone (not professionally) that has problems related to excess computer use. Over half (52%) of those that had treated someone knew someone compared to 38% of those that had not treated someone. Interestingly, over three-quarters (77%) of the outliers claim to know someone with problems related to excess computer use, consistent with the positive

correlation between having treated someone with problems related to excessive computer use and knowing someone personally with problems related to excess computer use. It is possible that there are some clinicians that have developed a specialty in treating problems related to excess computer use and are treating a well above average number of these clients. The numbers presented above do not suggest causation. Are clinicians that know someone personally with problems related to excess computer use more likely to identify it in their clients? Alternately, as a result of their practice are they more aware of it in their personal life? Another explanation is that those that have treated clients and/or know someone with these problems personally are more likely to return a survey on problematic computer use.

In conclusion, the results of this study suggest that a significant number of mental health professionals are treating individuals with problems related to excess computer use. About half of the clinicians surveyed know someone personally with problems related to excess computer use. Generalized to the entire U.S. population, this suggests that problems related to excess computer use are a significant problem, perhaps affecting millions of individuals in the U. S. alone. Future research is needed to more fully understanding the degree of the problems caused by excess computer use and to devise solutions to help those afflicted. This is especially true given the reasonable assertion that personal computer use will most likely continue to rise in the future.

While this study presents the survey results of mental health professional's exposure to problematic computer use, these results must be viewed cautiously. While the sample size was significantly larger than Young et al. (1999), the returned survey sample was non-random. It is unclear how self-selection bias affected the results. Future research

surveying large, random samples of clinicians may more accurately answer the research questions posed in this study.

Significant issues can be raised with the survey instrument itself. Problematic computer use was defined in the informed consent as “clinically significant distress or impairment in academic, occupational, social or other important areas of functioning” but not on the survey itself. It simply asked how many individuals (or parents of) did they treat having been identified with “problems related to excessive computer use”. The question “Do you believe computer/Internet addiction is a distinct disorder?” used the term “addiction” which had never been defined or used in the survey or informed consent before. The survey instrument was developed to balance compactness/convenience with clarity and detail and as a result there was sufficient compromise. There were only two open-ended questions and the forced-choice questions could not capture all possible responses. The density of the survey may have reduced participation and may have contributed to the misreading or missing certain questions altogether. As names and address were not obtained, follow up research on the respondents cannot be done.

An interesting unexpected discovery of this study was the large number of undeliverable mailed surveys that were returned by the US Postal Service. A majority of these were returned due to insufficient address information on the labels. This missed information was most often suite or office numbers. Without this information the survey cards were not deliverable. Coincidentally, the private office of the Dean of Doctoral Studies at Trinity College were among the almost 700 post cards returned undeliverable. Future mailed surveys should take this into account when dealing with previously untested mailing lists.

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Table 1
Number and Percentage of Mental Health Professionals Surveyed

	n	%
MD/Psychiatrist	26	11
Psychologist	127	56
Marriage and Family Therapist/ Licensed Professional Counselor	30	13
Social Worker	26	11
Substance Abuse Counselor	5	2
School Psychologist/Counselor	5	2
Not Specified	10	4
Total (All Mental Health Professionals)	229	100

Table 2
Percentage of Mental Health Professionals Treating Individuals with Problematic Computer Use within the Past 12 Months by Age Group

	11-17	18-25	26+	Any Age
MD/Psychiatrist	28%	23%	32%	56%
Psychologist	26%	23%	56%	67%
Marriage and Family Therapist/ Licensed Professional Counselor	31%	21%	72%	76%
Social Worker	24%	28%	60%	64%
Substance Abuse Counselor	60%	60%	60%	60%
School Psychologist/Counselor	20%	20%	80%	80%
Not Specified	30%	30%	50%	60%
Total (All Mental Health Professionals)	27%	24%	56%	67%

Table 3
Average Number of Individuals Treated for Problematic Computer Use by Selected Mental Health Professionals over the Past 12 Months by Age Group

	11-17	18-25	26+	All Ages
MD/Psychiatrist	0.65 (1.65)	0.54 (1.47)	2.00 (3.25)	2.73 (5.23)
Psychologist	0.54 (1.11)	0.34 (0.74)	1.57 (2.25)	2.45 (2.99)
Marriage and Family Therapist/ Licensed Professional Counselor	0.80 (1.45)	0.80 (1.75)	2.57 (3.13)	4.17 (5.19)
Social Worker	0.62 (1.30)	0.54 (0.95)	1.85 (2.46)	3.00 (3.44)
Substance Abuse Counselor	1.80 (1.79)	1.80 (2.95)	2.00 (2.00)	5.60 (5.86)
School Psychologist/Counselor	0.40 (0.89)	0.40 (0.89)	4.80 (3.70)	5.60 (4.16)
Not Specified	0.50 (0.85)	0.90 (1.73)	1.70 (3.09)	3.10 (4.63)
All Mental Health Professionals	0.62 (1.25)	0.51 (1.18)	1.81 (2.62)	2.93 (3.88)

Note: Standard deviation in parentheses

Table 4
Percentage of Problematic Computer Uses by Age Group

	Age 11-17	Age 18-25	Age 26+
Chat	34%	21%	19%
Online Relations	23%	28%	32%
Games	41%	18%	13%
Web Surfing	11%	12%	13%
Sexual	25%	32%	54%
Gambling	0%	4%	13%
Shopping	0%	4%	10%
Programming	0%	4%	3%

Note: Percentages of respondents that reported having treated each particular age group

Table 5
Frequency of Related Issues

	f	%
Depression	103	67
Couples Problems	79	56
Anxiety	64	42
Impulse Control Disorder	42	28
Sex Addiction	41	27
OCD	30	20
ADHD	26	17
Substance Abuse	22	14
Parenting Problems	19	12
Sex Disorder	13	9
Sleep Disorder	11	7
ODD	6	4
CD	6	4
Psychosis	1	1
Schizoid Personality Disorder	1	1

Note: Percentage = 100* *f* / 153.

Table 6
Frequency of Reported Effective Techniques

	f	%
Cognitive Behavior Therapy (CBT)	62	45
Marital Therapy	47	34
Behavior Therapy	45	33
Medication	44	32
Psychoeducation	40	29
Family Systems	36	26
Psychodynamic	34	25
Abstinence	25	18
12 Step Program	25	18
Controlled Usage	24	17
Parent Counseling	21	15
Addiction Counseling	15	11
Social Skill Training	16	12
Reality Therapy	11	8
Control/Monitor Software	11	8
Bibliotherapy	9	7
Group Therapy	7	5
Existential Therapy	5	4
Sex Offender Therapy	4	3
Biblical Counseling (*)	1	<1
Gestalt (*)	1	<1
Hynotherapy (*)	1	<1
EMDR (*)	1	<1
REBT (*)	1	<1
Theophostics (*)	1	<1
Relaxation Techniques (*)	1	<1

Note: * Signifies write in vote
Number of respondents reporting at least one technique was 138
Percentage = 100* *f* / 138.

Table 7
Percentage of Responses to the question “Do you believe computer/Internet addiction is a distinct disorder” by Mental Health Professionals That Have and Have Not Reported Treating Problems Related to Excessive Personal Computer Use

	No	Yes	Can be	Don’t Know
Have Treated	27	18	32	19
Have Not Treated	41	14	14	24

Table 8
Frequency of Most Often Used Diagnosis by Mental Health Professionals That Have Reported Treating Problematic Computer Use

	f	%
Do Not Diagnose	85	54
Obsessive Compulsive Disorder (OCD)	19	12
Depression	13	9
Impulse Control Disorder (ICD)	12	8
Anxiety	10	7
Relational Problems	4	3
Sexual Addiction	3	2
Addiction, other	3	2
Social Avoidance/Phobia	3	2
Dysthymia	1	<1
Gambling	1	<1
Adjustment Disorder	1	<1
ADD	1	<1
No Formal Diagnosis Exists	1	<1
Other	12	8
Misunderstood Question	5	3

Note: 1. Other than Do Not Diagnose, all other responses were write in.
2. Percentage calculations are based on ratio (*f*/n) of the frequency of diagnosis response divided by the total number of mental health professionals reporting to have treated at least one person with problems related to excess computer use (n=153).

Table 9
The Relationship Between the Percentage of Mental Health Professionals Knowing Someone Personally With Problems Related to Excess Computer Use and Whether or Not They Have Treated Individuals With Problems Related to Excessive Personal Computer Use

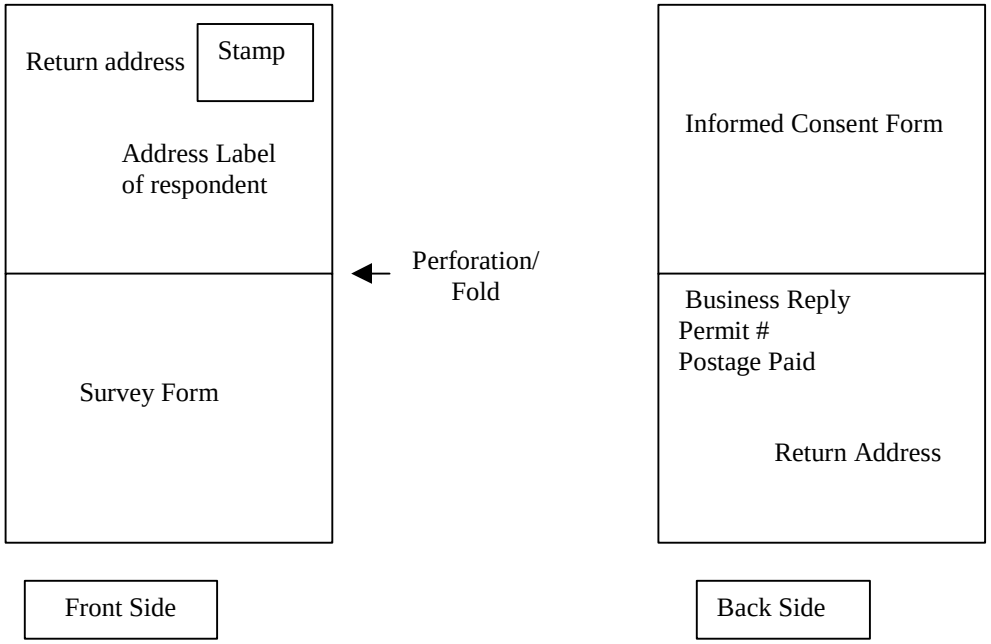
	Know Someone Personally %	
	Not Treated	Treated
MD/Psychiatrist	33 (3/9)	50 (7/14)
Psychologist	36 (13/36)	40 (32/81)
Marriage and Family Therapist/ Licensed Professional Counselor	29 (2/7)	83 (19/23)
Social Worker	33 (3/9)	53 (9/17)
Substance Abuse Counselor	100 (2/2)	67 (2/3)
School Psychologist/Counselor	100 (1/1)	100 (4/4)
Not Specified	50 (2/4)	67 (4/6)
Total of All Mental Health Professionals	38 (26/68)	52 (77/148)

Note: Percentages derived from ratio (parentheses) of the number of mental health professionals that responded “Yes” to question 5.a (know someone personally with problems related to personal computer use) to the total number responding to 5.a. (Yes or No). Not treated n=68; Treated, n=148.

Appendix A

Survey Instrument Construction

The survey instrument consists of a single piece of card stock paper printed on both sides with a perforation and fold in the center.



Informed Consent Form

Survey of Mental Health Professional's Exposure to Problematic Personal Computer Use
The purpose of this study is to investigate to what extent mental health professionals encounter adults and adolescents with problems (clinically significant distress or impairment in academic, occupational, social or other important areas of functioning) related to excess personal computer use.

This study is performed as partial fulfillment of the requirements for my Psy.D.degree in Clinical Psychology at Trinity College of Graduate Studies. Your voluntary, confidential participation (**even if you have not seen problematic computer use**) will provide useful information on this topic.

Return postage is prepaid. Please read the questions carefully. It will only take a few minutes to:

1. Detach this portion from the postage-paid return survey postcard.
2. Enter "√" in box and enter today's date confirming that you have been informed of the purpose and consent to participate in this survey.
3. Answer the survey questions on the return postcard (sorry about the small print).
4. Drop the return postage-paid survey postcard in any mailbox.

Thank you very much for you participation,
Kenneth M. Woog, MA (949) 951-8315. kwoog@woogresearch.com
If you are interested in making additional comments or would like to receive a copy of the completed dissertation please go online to: **www.woogresearch.com.**

Survey Form

Nationwide Research: Mental Health Professionals and Problematic Computer Use

I am a practicing mental health professional and consent to participate in this study (enter "√" in box and date): ☐ **Date:_____**

Please *circle* all license/credentials you are practicing under:MD/Psychiatry, Psychologist, Social Worker Marriage & Family Therapist, Substance Abuse, School Psychologist/Counselor, Intern/Pre-licensed
In what setting(s) do you work? **School, College, Hospital, Private or, Group Practice, Community Counselng**

1. Within the past 12 months have you treated (either directly or counseled parents of) individuals that presented with, or you identified as having, problems related to excessive personal computer use?

Enter # treated Problematic uses/symptoms presented or identified (*circle* all per age group)

Age 12-17#?_____ Chat, Online Relations, Games, Web Surfing, Sexual , Gambling, Shopping, Programming

Age 18-25#?_____ Chat, Online Relations, Games, Web Surfing, Sexual , Gambling, Shopping, Programming

Age 26&+#?_____ Chat, Online Relations, Games, Web Surfing, Sexual , Gambling, Shopping, Programming

Any related issue? Anxiety, Depression, Impulse Control Disorder, Substance Abuse, OCD, ODD, CD, ADHD, Couples Problem, Schizoid PD, Sexual Disorder, Sex Addiction, Parenting Problem, Sleep Disorder, Psychosis

2. What techniques/models/tools did you find to be effective in treatment? (*Circle* all that apply):

Did not treat, Abstinence, Behavioral, Bibliotherapy, Controlled Usage, CBT, Existential, Family Systems, Group, Marital Therapy, Medication, Control/Monitor Software, Psychoeducation, Psychodynamic, Reality

12 Step, Addiction Counseling, Parent Counseling, Sex offender Therapy, Social skills, _____

3. Based on your professional and personal experience and knowledge… (*circle* or fill in answer)

a. Do you know someone (not professionally) with problems related to excess computer use? No Yes
b. Do you believe computer/Internet addiction is a distinct disorder? Don't know, No, Yes, Can be
c. How do you most often diagnose it? I don't, Diagnosis:_____

Please tear off and send this portion by placing in any mailbox. Postage is prepaid. Thank you!

Appendix B

Review of the Literature

Evidence of Computer Abuse and Dependency in the General Population

Various terms have been used to describe extreme computer use having deleterious effects on the user. The term abuser, addict, dependent, obsessive and junkie have been used to describe the individuals with behaviors described as abuse, addiction, compulsion, dependency, disorder, obsession, pathological, problematic and unhealthy. While there has been debate (Markovich & Brahm, 2002) as to the proper terminology and supposed diagnosis, the term "addiction" is most used in the popular press. Rather than contribute to the debate, this researcher has chosen to use the terminology as presented by the original source. This is believed to present a clearer view of their contribution to the study of the problem.

Published reports of computer "addiction" surfaced as early as 1980 in the *Hacker Papers* (Zimbardo, 1980). In this report, which presented the computer network communication of University computer users, two users claimed to desire to reduce their dependency on the computer. They described the excesses as having seriously negative effects on their social and academic life. Zimbardo's observation led him to state that the fascination with the computer can become an addiction.

Shotton (1989) provides a detailed look at computer dependency in her book *Computer Addiction?, A Study of Computer Dependency*. This book was based on the results of her doctoral research conducted in England. She performed a survey of individuals that believed they were "hooked" on the computer. She reached them through publicity obtained in national newspapers and magazines. Over several months she

received 180 inquiries and mailed a series of surveys. The first detailed survey resulted in 106 responses from those, based on her survey believed themselves to be “hooked on the computer”. Males were far more likely to be computer dependent, outnumbering females 100 to 6. The ages of the dependents ranged from 14 to 64 years-of-age. She found that compared to the controls, the dependents were more likely to be introverted and characterized “many” as having Schizoid personality characteristics.

Shotton also surveyed students and teachers from local schools and revealed that teachers were able to identify students believed to be dependent. She questioned professional care agencies but found that not one would admit to having treated a computer dependent. She stated “although the characteristics associated with computer dependency appeared to be manifest in some people, at that time it seemed that neither they nor their families were turning to the care agencies for advice”. While Shotton’s study of self-identified computer dependents lacks quantitative rigor, it does offer a historical perspective of qualitative factors in problematic computer use during the 1980s. As such it serves as a useful point of comparison with later research and less scientific surveys which follow.

While the Internet was being used for military and education network communication decades earlier, the first Web Site was served on the World Wide Web in 1990. With only approximately 373,000 users (hosts) on the web on January of 1991, this number would almost double each year for the next eleven years. In 2002 over 171 millions hosts were estimated to be on the Web. A search using the Proquest On-line Data Base of General Reference and Proquest Newspapers on August 29, 2003 found no articles matching the search terms “Computer Addictions”, “Internet Addiction” or

"Cyber Addiction" in the years 1990, 1991 and 1992. The one article found in 1993, "Caution: Children at Play on Information Highway; Access to Adult Network Holds Hazard" was published in the Washington Post on November 28, 1993. It describes a number of circumstances where children may face dangers on the computer and Internet. It warns of children being exposed to sexually explicit chat and message board postings. It also warns of "the growing danger of computer addiction". Interviewed for the article, Sherry Turkle of MIT warned that some computer or video game users develop obsessions that don't wane over time. She was investigating "individuals that spend endless hours in the on-line fantasy and role-playing games known as Multi-User Dungeons, or MUDs."

The Proquest search with the same criteria for the year 1994 returned three articles and 1995 returned eight. "Hooked on-line: When computer users prefer cyberspace to reality" (Belsie, 1994) and "They log on, but they can't log off (Hamilton & Kalb, 1995) appeared in the Christian Science Monitor and Newsweek respectively. Articles appeared in newspapers, weekly magazines and to a much lesser degree, professional journals. National Public Radio broadcast "Computer Addiction Cry- Just One More Game" in "All Things Considered" (1995) a first person account of a college professor's inability to quit playing computer games at the expense of his profession.

In 1996, the paper "Internet Addiction: The Emergence of a New Clinical Disorder" was presented to the 104th Annual meeting of the American Psychological Association (Young, 1998). In this paper, Kimberly Young from University of Pittsburg at Bradford, presented the results of her study on Internet Addiction. She used an adapted form of the criteria for pathological gambling from the DSM-IV (American Psychiatric

Association, 1994), to discriminate Internet dependents from non-dependents. She used both telephone and on-line Internet survey methods collecting a total of 596 responses over a three-month period that resulted in identifying 396 dependents and 100 non-dependents. Her survey asked questions to identify demographics, usage differences including length of use and the applications used. She also asked about the extent of problems resulting from use and their motivation to change their behavior. Her study identified more females (n=239) than males (n=157) addicted to the Internet and the mean ages were 29 and 42 for males and females respectively. This represents a significant departure from previous studies stereotyping young introverted men as computer addicts.

Dependents spent an average of 38.5 hours on line compared with 4.9 hours per week by the controls. Chat rooms topped the list of types of computer use with 35% of the dependents using chat rooms compared with only 7% of the non-dependents. MUDs were used second with 28% and 5% used by dependents and non-dependents respectively. While dependents used News Groups more than non-dependents (15% vs. 10%), the difference is not nearly as great at the prior two uses. For the other uses sampled, World Wide Web and Information Protocols, non-dependents were far more likely to use these aspects of the Internet than dependents (i.e. 25% vs. 7% and 24% vs. 2%).

Non-dependents did not report significant problems caused by excessive Internet use except for poor time management. Dependents, however, reported severe or moderate impairment in academic, occupational, relational and financial areas of their lives due to

excess Internet use. The majority of dependents (54%) claimed to have no desire to cut down the amount of time spent on-line.

Young (1998) admits to several methodological flaws in her study. First, the convenience, self-selected group of Internet users responding to the advertisements of the study was inherently biased and the severity of symptoms might be exaggerated. Twenty percent more women responded to the survey, putting into question the strength of the gender based demographic conclusions. Further, the control group was not demographically matched to the dependents. This is most apparent in the mismatch by gender (males n=64, females n=36) and age (males m=25, females m=29).

Brenner (1997) reported the results of the first 90 days of an Internet Usage Survey that was entitled “Internet-Related Addictive Behavior Inventory”. The survey contained 32 true/false questions loosely associated with DSM-IV (American Psychiatric Association, 1994) criteria for substance addictive disorders. During the first 90 day period, 1885 persons from more than 25 countries accessed the survey, resulting in 563 completed, usable surveys. Responses indicated that a significant number of respondents (80%) have suffered some form of problems related to Internet use. Twenty nine percent have cut short sleep to be online, 26% perceive their work or performance has suffered since using the Internet and over half (55%) had been told they spend too much time on the Internet. Adults only “net resources” were accessed by 71% of the respondents. The “symptoms” related to addiction included a question about attempting to cut usage but unable to (22%) and a question about willingness to move far away from current home to maintain Internet service (40%) indicated social isolation. A smaller percentage (8%)

claimed that without the computer they wouldn't have any fun at all. Even less, (6%) claimed to have gotten into trouble at work or school for net-related activities.

The demographic makeup of Brenner's respondents was different from Young's (1998). Males completed 73% of the surveys and the average age of respondent was 34 years old. The Internet was used, on average 19 hours per week and had used the Internet for two years. Brenner warned of interpreting the results acknowledging a likely biased sample. He did not publish any further data or analysis.

The largest survey conducted to date on Internet behavior was developed by David Greenfield and conducted on-line at ABCNEWS.com during August of 1998. Approximately 18,000 participants completed a 36 item online questionnaire (Virtual Addiction Survey) querying about how they spent their time online. Similar to Young (1998b), Greenfield adapted the criteria for Pathological Gambling from the DSM-IV (APA, 1994) to match the features of computer addiction. Participants were asked to endorse or not endorse 10 specific clinical diagnostic statements. If 5 or more of the 10 criteria were met, the participant was classified as addicted. According to the results, which was presented at the 1999 Meeting of the American Psychological Association, 990 of the 17,251 respondents were classified as addicted (Greenfield, 1999). Greenfield concluded "The main findings of the study supported previous research indicating that approximately six percent of those surveyed met the criteria for Internet addiction." In contrast to Young (1998b) yet very similar to Brenner (1997), 71% of the respondents were male and the average age was 33 years old.

Generalizing the survey results to the entire Internet population should be done with caution. The survey results, published on the ABCNEWS.com web site states that the data "indicates that almost 6 percent of the Internet users could be considered "addicted" (ABCNEWS.COM, 2000). A major methodological flaw of this survey was that of selection bias. The advertisement for and link to the survey was placed on the ABCNEW.COM Web site *following* an article on Internet use and addiction. In addition to sample bias, participants may have been influenced by the article content.

Results of another on-line Internet addiction survey was published in March of 2001, conducted by Jerusalem, Hahn, Niesing & Heer at Humboldt-University of Berlin. An online sample of 8,266 persons from Germany (86%), Austria (6.2%) and Switzerland (4.1%) were surveyed to determine the "prevalence of Internet-Addiction". To classify an individual as addicted, the authors decided they must exhibit all of the following five criteria – loss of control (unable to stop), development of tolerance (increasing use), symptoms of deprivation (nervousness, testiness, etc.), negative social consequences (loss of social contact) and negative consequences for performance (work, school, etc.). Overall they found that 3% could be classified as Internet addicted and they averaged 34.6 hours per week of Internet use. "Normals" averaged half as many hours, or 17.5 hours per week. Further, they found that younger users were far more likely to suffer from addiction than older users. Below 18 years of age, 8.2% of male and 6.0% of female respondents claimed to meet the criteria for addiction. Between 18 and 20 years of age, 6.1% of male and 5.1% female respondents were addicted. In contrast, Between 20 and 29 years of age only 2.2% male and 3.2% female were addicted.

The same methodological problems plague this study as with the other on-line surveys presented above. The primary concerns are biased sample and invalid survey instrument. Little information was published on the specifics of the study so the results must be viewed with caution.

In contrast to estimates of computer addiction ranging from 3% (Jerusalem, Hahn, Niesing & Heer, 2001) to 6% (Greenfield, 1997), Sjoberg and Fromm (2001) suggest that the numbers might be much lower, in fact below 1%. The only off-line study that addressed the issue of Internet addiction, a random sample of 1250 Swedish individuals were mailed a confidential 25 page questionnaire in the Spring of 1999. The overarching purpose of the study was to assess the Swedish public's perception of risks associated with Information Technology. The final quantity of respondents to the survey was 844. In addition to questions regarding demographics and risk perception, questions specific to information technology (IT) uses and problems were asked. When presented with an extensive list of specific computer related problems, only 0.6% of computer users reported Internet Addiction as a problem experienced. Other socioemotional problems related to Internet use reported were depression from Internet surfing (0.5%) and increased social isolation (1.1%). While this study eliminates the selection bias issues of the on-line surveys, there are some concerns nonetheless. The most significant problem is that it assumes that the respondents were aware of the symptoms of computer addiction. Other sample items questioned are fairly clear (i.e. "Distorted e-mails" or "Fraudulent credit card transactions on the Internet"). There may be individuals that have problems related to excess or otherwise problematic computer or Internet use and don't see

themselves as addicted. This may serve to lower the self-identification of those addicted to the Internet.

Almost all of the research investigating the prevalence of computer addiction within the general population has been conducted on-line. Reporting as high as 6 percent of the population could be addicted, these studies suffer from serious issues of selection bias. By contrast, studies of college students, described below, have been mostly conducted off-line.

Internet Addiction and College Students

College Students have been considered a high-risk group for computer/Internet addiction for various reasons (Kandell, 1998; Lavin, Marvin, Mclarney, Nola, Scott, 1999). As young adults they have far more independence than during adolescence and, if they are away from home, they no longer have anyone monitoring their computer and Internet use. Many dormitories offer students 24 hour, 7 day-a-week high-speed Internet connections with few, if any limits (Anderson, 2001). The Internet provides students with an important way to communicate, research and study and also offer a way for students to communicate with distant family and friends. But it poses a risk for academic and social problems when the computer is excessively used for playing games, chatting with friends and browsing the web. A number of studies were conducted at various colleges and universities to investigate the potential risks.

One of the most comprehensive student studies (Anderson, 2001) involved thirteen hundred college students from eight different academic institutions. The pencil and paper survey was conducted in classrooms and consisted of 69 items including demographic and Internet use questions use and perceived academic and social

consequences of its use. The average student used the Internet 100 minutes per day. Other than sleep patterns, high users (>400 minutes per day) did not indicate that this use resulted in a significant negative impact on their lifestyle over low users. To determine a diagnosis of dependence, seven true-false questions similar to the DSM-IV substance dependence criteria adapted for the Internet was asked. Scoring in the required direction on three or more of the seven classified the user as dependent. Almost 10% (9.8) of the Internet users met the criteria.

On average, dependents spent 229 minutes per day on the Internet, were mostly male and were significantly more likely to have reported negative effects on academic, social and sleep patterns. Anderson (2001) report that this survey was replicated at Northeastern University (Welsh, 1999) with 1,000 students and resulted in 8% meeting the criteria for dependence, again mostly male.

Similar results were obtained from a smaller study (n=277) conducted at Bryant College in Smithfield RI. Students in classes that required the use of the Internet use were surveyed regarding their use of the Internet. A “pathological use scale” was developed with 13 questions asking about various performance, emotional and interpersonal problems caused by use of the Internet. Eight percent (8.1%) of the respondents agreed with four or more symptoms for which they were classified as pathological Internet users. The average pathological user used the Internet significantly more (8.48 hours per week) than normals (3.18 hours per week) but far less than prior studies (Anderson, 2001).

University counseling centers concerned about this problem specifically inform students of the risks of Internet addiction and offer counseling support (University of Notre Dame, 2003; UCI, 2003), . A Yahoo search on the terms “Counseling Center” +

"Internet Addiction" + ".edu" (education extension) on September 2, 2003, returned 165 hits from various colleges and university counseling center web sites in the US and abroad. These various sites provide students with information and advice about Internet addiction. Unfortunately Pratarelli et al. (1999) estimate that the numbers of students either referred to counseling for poor academic performance or self referred due to excess computer/internet use is "extremely small (i.e. less than ½ of 1% of the student population in any given year."

The studies presented above suggest that college students have significant risk for computer addiction. At the same time this population seems unlikely to seek treatment, even though they have free or low cost mental health services available.

Problematic Adolescent Computer Use

While college students are the most researched group in the study of computer/Internet addiction (as they are for all social science research), children and adolescents have been the least studied. There has been ample case study and anecdotal evidence of adolescents with computer/Internet use problems in the literature and popular press (Sinclair User, 1986; Shotton, 1989; Orzack, 1998; Young, 1998; Young 1999; Hall & Parsons, 2001; Pravda, 2001, The Parents Network, 2002, Lin & Tsai, 2002). The Homenet Project (Kraut, Scherlis, Mukhophyay, Manning & Kiesler, 1996) indicated that teens were the highest Internet users of all family members and that "what seemed to be almost addictive behavior among the teenagers who used the real-time communications services, several parents imposed limits on their children's computer use." While several of the on-line surveys reviewed included respondents below the age of 18, no systematic

study of problematic computer/Internet use of this population has been conducted. This is unfortunate, as this population may be the most susceptible to problematic computer use.

The German on-line survey (Jerusalem, et. al., 2001) of *Stress and Addiction in the Internet*, reported that as a group, those below 18 years of age were significantly more likely to consider themselves addicted to the Internet than any other age group. For males less than 18 years-of-age, 8.2% self-reported as addicted compared to 6.1% between the ages of 18 and 20 and only 2.2% of males 20 to 29 years of age. This finding contradicts some prior on-line surveys (Young, 1998; Greenfield, 1999) yet supports others (Kraut, Lundmark, Kiesler, Mukhopadhyay, Scherlis, 1996). One possible explanation is that children and adolescents use the computer and Internet in different ways than adults (Kraut, Lundmark, Kiesler, Mukhopadhyay, Scherlis, 1996). This would not make them likely to participate in the surveys and those that did participate might not represent the typical child or adolescent user. Less than 10% of respondents of Greenfield's on-line study (1999) had not completed high school.

While it might be intuitive that this group is protected from excesses in computer use due to parental control, several factors limit parent's ability to monitor their adolescent's computer use. First, while parents might assume that their child is using the computer for homework, they may instead be chatting and playing games. With the Microsoft Windows Operating System, a child can instantly switch between applications when a parent attends nearby. Second, the reduced cost of computers has resulted in an increasing number of computers in the home, placing many in adolescent's bedrooms. And lastly, to date there is no effective means to limit unsupervised computer time for computer knowledgeable teens other than physically moving the computer to an

inaccessible location or by disabling it by removing critical hardware (i.e. hard drive in special caddy). While there are software and hardware products designed to help parents monitor their children's use, teens will find them easy to override (Jesdanun, 2003).

In conclusion, besides the general population, college students and adolescents have been identified as distinct populations and as such are likely to have unique problems related to computer/Internet addiction. These different forms of addiction are investigated in the following section.

Forms of Computer / Internet Addition - Overview

Before the Internet became widely used, Shotton (1989) identified three distinct subgroups of computer dependents based on how the computer was used. These three groups were explorers, networkers and workers. Explorers, the largest group of dependents, programmed computers in an exploratory and educational manner rather than to produce a specific product. Networkers, the second largest group were described as using the computer for entertainment purposes, typically game playing Multi-user Dungeons and Dragons (MUD) or hacking. The smallest dependent subgroup, Workers, programmed computers in order to produce actual products.

The literature since Shotton (1989) also describes groupings of identified dependents or addicts based on the associated computer usage. These uses vary widely by age, gender and personality traits. These uses are:

1. Excess socializing via chat, use groups, Email and instant messaging (Young, 1998; Greenfield, 1999; Pratarelli, et al., 1999; Martin & Schumacher, 2000; Anderson, 2001).

2. Computer gaming (including MUDs) (Griffiths & Hunt, 1998; Young, 1999; Pratarelli, et al., 1999; Martin & Schumacher, 2000; Anderson, 2001).
3. Sexual Activities including viewing adult-oriented web sites, cyber sex and sexually explicit chat (Young, 1998; Greenfield, 1999; Pratarelli, et al., 1999; Martin & Schumacher, 2000; Anderson, 2001).
4. Excess web surfing and exploration (Greenfield 1999; Martin & Schumacher, 2000; Anderson, 2001, Jerusalem, et al., 2001).
5. Excess on-line activities such as stock trading, gambling, shopping (including auction sites) (Young, 1996).
6. Hacking or computer programming (Pratarelli, Browne & Johnson,1999).

Not all research agrees in the behaviors identified as problematic or addictive. This is likely because they sampled different populations, the definition of problematic or addictive use was not consistent across studies and the studies were conducted at significantly different points in time relative to "Internet time" (Grohol, 1999). Young (1999) found that dependents were five times more likely to use Chat rooms (35% vs. 7%) and play online MUD games (28% vs. 5%) than non-dependents. The study also reported dependents were significantly more likely to use News Groups (15%) than non-dependents (10%). However, Email, World Wide Web surfing and using Information Protocols (FTP) were used significantly less by dependents.

Greenfield (1999a) identified four types of Internet addicts. The first was stimulated by potent content, specifically sexual content (although he suggested that most likely these Internet addicts were also sexual addicted as well). The second type was what he called 'electronic vagabonds" that tend to surf endlessly enjoying the stimulation and

education. The third group he believed to be addicted used chat rooms, personals and email as a major part of their social life. The fourth group identified was users that take various popular on-line activities to extreme. They lack the ability to control behavior such as on-line stock trading, gambling and shopping. Inconsistent will all the other studies, gaming was not associated with addictive Internet use.

Among the college studies, Pratarelli, Browne & Johnson (1999) and Martin & Schumacher (2000), problem Internet use was associated with on-line chat/messaging/socializing, game play (including MUD) and on-line sexual activities. Hacking and programming was identified as associated with computer/Internet addiction exclusively by Pratarelli, Browne & Johnson (1999).

Research Into the Forms of Computer / Internet Addiction

Excess time spent socializing or communicating via chat, use groups, Email or instant messaging was identified as the most significantly reported behavior associated with problematic or addictive Internet use (Young, 1999; Greenfield, 1999a; Pratarelli, et al., 1999; Martin & Schumacher, 2000; Anderson, 2001). Males and females have been found to be equally likely to participate in problematic on-line socializing (Martin & Schumacher, 2000). These behaviors become problematic either when too much time is spent engaging in it at the expense of sleep, health, academic or occupational responsibilities or when it disrupts off-line relationships.

Although the more time spent on the Internet results in a decrease in social activities and time spent talking on the phone with family and friends (Nie & Lutz, 2000), the long term effects of on-line socialization seem to differ depending on whether the individual tends toward extroversion or introversion (Kraut, Kiesler, Boneva, Cummings,

Helgeson, & Crawford, 2002). Describing the social effects of Internet use among the families of the Carnegie Mellon HomeNet project, Kraut & Kiesler, (2003) stated "Among extroverts, for example, using the Internet was associated with increases in community involvement and self-esteem, and declines in loneliness, negative affect and time pressure. The reverse trend were found for introverts". Introverts are therefore more likely to suffer the negative effects of Internet socializing. While early research proposed that the Internet caused loneliness and isolation, recent studies suggest rather that lonely individuals are drawn to the Internet (Amichai-Hamburger & Ben-Artzi, 2003).

For individuals that are married or in committed relationships, on-line affairs can be devastating (Young, 1998). Anecdotal reports of individuals leaving marriages and their children for their on-line partners have been widely reported (Greenfield, 1999b; ABCNEWS.COM, 1999). According to Greenfield (1999b), on-line relationships typically progress through a series of stages using different methods of on-line communication:

1. Meeting in a chat room or game/topic site.
2. Increased frequency of email and/or Instant Messages.
3. More overt cyberflirting begins.
4. Development of planned and preset meeting times to speak off-line of meet in private [chat] rooms.
5. Use of private chat rooms for more personal discussion (by this time the sexual innuendo has increased considerably, perhaps escalating to cybersex, where explicit sex acts are discussed as stimulation to reach orgasm).

6. Frequent progression toward telephone contact, including phone sex (similar to cybersex, on the telephone).

7. A personal meeting, which in up to 31 percent of the cases results in real-time sexual contact.

(p. 84-85).

Computer gaming was also highly associated with addiction (Griffiths & Hunt, 1998; Young, 1999; Pratarelli, et al., 1999; Martin & Schumacher, 2000; Anderson, 2001). In one of the few studies of adolescent computer gaming dependence, Griffiths and Hunt (1998) administered a questionnaire to 387 adolescents (aged 12-16) at a comprehensive school in Exeter, England. The questionnaire included items modified from the DSM-III-r criteria for pathological gambling. Those that responded positively to 4 or more of the items were considered dependent. Of the sample, 19.9% (n=62) were currently dependent and another 6.8% (n=21) of the players had played at dependent levels in the past. Boys represented the vast majority of dependents (72%). Thirty-three percent of the users identified “addictive” as one of the bad things about playing computer games.

The popular press (Becker, 2002) and on-line forums (selfpsychology.org, 2002) contain anecdotal evidence of problems related to excess on-line computer gaming. According to Becker (2002), many players have nicknamed the fantasy game Everquest, ‘EverCrack’ in reference to its addictive properties. In one of the largest studies of an on-line gaming, Nicholas Yee (2002) performed an on-line survey of over 3000 users of several Mass Multiplayer On-line Role Playing Games (MMORPGS). The games included in the survey were Everquest, Dark Age of Camelot, Ultima Online, Acherons

Call and Anarchy Online. While only 12.8% of the total respondents were female, 66% of female players between the ages of 12 and 17 considered themselves addicted to the game. For males in the same age group, 47.7% considered themselves addicted. In order to explain why Everquest is so addicting, Lee in "Virtual Skinner Box" (n.d.) compares the game play elements to operant conditioning reinforcement schedules and Maslow's hierarchy of needs. According to published information on-line, game developers do use psychology (including employing methods to ensure "addiction") to guide their designs (Calica, 1998; Howland, 1999; Baron, 1999; Hassanpour, 2001; Moraldo, 2002; Jhin, 2003). At the January, 2003 of the Austin, Texas chapter of the International Game Developer Association, a panel discussion was held on the topic of game addiction. An article published about the meeting (IGDA, 2003) claimed that the panel "had consensus at least on the idea that people can become addicted to games or that aspects of games can be addicting" (although not all panelists agreed that this was a bad thing). At the meeting, Dr. Vagdevi Meunier, staff psychologist at the University of Texas and claiming to have a specialty in Internet addiction, stated that she believes 10% of on-line gamers are addicted.

Sexual activities, including downloading pornographic images, participating in Cybersex or sexual related on-line groups, was another set of activities associated with Internet addiction (Young, 1998; Greenfield, 1999; Pratarelli, et al., 1999; Martin & Schumacher, 2000; Anderson, 2001). The term Cybersex has been used to describe these activities. Schneider and Weiss (2001) defined Cybersex as "the use of digitized sexual content (visual, auditory, or written), obtained either over the Internet or as data retrieved by computer, for the purpose of sexual arousal and stimulation."

In the largest on-line (MSNBC) study of individuals that claimed to use the Internet for sexual related pursuits, Cooper, Scherer, Boies and Gordon (1999) found that 8% of the 9177 respondents reported experiencing significant problems caused by their on-line sexual behavior. They reported spending greater than 11 hours per week engaging in on-line sexual activities. While both men and women were involved in all of the identified types of sexual on-line behaviors, there were significant differences in usage. Males significantly outnumber females participating in on-line sexual activities and were significantly more likely to download pornography or view sexually explicit visual materials. Females reported a greater preference for chat than males. Over half (51%) of the women surveyed reported that they never download sexual material. Questions have been raised as to whether or not, on-line sexual compulsivity is a new problem or simply a new medium for expressing a preexisting sexual addiction and should be treated as such (Orzack, 2000).

Excess web surfing and exploration was another behavior associated with problematic Internet use (Greenfield 1999; Martin & Schumacher, 2000; Anderson, 2001, Jerusalem, et al., 2001). Individuals that exhibited this behavior were characterized by Greenfield (1999) as “electronic vagabonds” and went further to say “These are the people who like to surf for hours on end with no specific goal or focus. They just like to be online and enjoy the multimedia stimulation, the challenge of visiting new places, and learning new information. They find the whole Internet experience intoxicating.” Young (1999) also reported clinicians had seen clients reporting problems relating to excess Web browsing.

Of the surveys of computer users, only Greenfield (1999a) associated compulsive engagement in on-line activities such as gambling, stock trading and shopping with problematic computer/Internet use.

Young, 1998) reported that clinicians reported treating individuals with problematic on-line gambling and stock trading. There has been significant concern over the potential for problems related to Internet gambling (King & Barak, 1999; Griffiths & Parke, 2002) due to the explosive growth of the Internet. The first prevalence study (and only study to date) conducted in the UK, however found “no evidence of problematic gambling behaviour associated with the Internet” (Griffiths, 2001).

No peer-reviewed journal article was found published specifically related to problem Internet stock trading or stock day trading. A search of PsycInfo on 9/13/03 with the words “Internet Stock Trade” returned only two articles not specific to this issue. A search of Yahoo using the keywords “stock trading addiction” returned only 4 entries while "day trading addiction" returned 8. Only one returned a popular press article from CNN.COM (1999). No items returned were dated in 2000 or later. One of the sites returned was linked to a discussion group for “Daytrading and Stock Trading Addiction” at Siliconinvestor.com (n.d.) in their Stocktalk discussion group. The group was created on Jan 12, 1999 and the most recent entry was February 1, 2000 from a user that was seeking technical information about a “level 2 screen”. There were a few replies that referenced articles from various on-line sources, none of which were still working. Replies from those who claimed to be addicted were most often seeking advice on how to sue their broker to recoup their loses. There were many replies to the addicts telling them to take responsibility for their own behavior. Possible reasons for the change in on-line

trading behavior include the dramatic downturn of the stock market beginning in the year 2000 and the investor protection controls instituted by the on-line brokerage firms. It is assumed that this discussion group is no longer active as no direct reference or link could be found on the web site.

As previously mentioned, programming and hacking was identified as associated with computer/Internet addiction by only one study (Pratarelli, Browne & Johnson, 1999). This study is unlikely representative of the general population because it sampled a population from a major public university with 104 of the 341 respondents identified as math or science majors. Shotton (1989) also recognized this computer dependent subgroup, albeit smallest subgroup, she called them Workers and they used computers excessively to program in order to produce products.

In summary, many distinct forms of problematic computer use have been identified. These include chat, email/instant messaging, gaming, sexual activities, web surfing, gambling, shopping and programming.

Computer/Internet Addiction Etiology : Disorder or Symptoms

Almost all of the case studies and clinical reports of problematic computer and Internet use reported diagnosing co-existing DSM-IV Axis I or Axis II psychopathologies (Young, 1998, Young, 1999; Black, Belsare & Schlosser, 1999; Shapira, Goldsmith, Keck, Khosla, & McElroy, 2000; Bai, Lin & Chen, 2001; Shapira., Lessig, Goldsmith, Szabo, Lazoritz, Gold & Stein, 2003). Most often reported were substance dependency, depression, anxiety, impulse control disorders, sexual dysfunction/paraphilla and personality disorders.

This has posed both theoretical and practical questions as to the etiology of this problem. Is excess computer use the resulting symptoms of depression, anxiety or an impulse control disorder? Is excess computer use a true “addiction” and these other disorders simply co-morbid conditions or does computer/Internet addiction cause these other pathologies? While these questions have certainly been debated (Grohol,1999; Shaffer Hall & Vander Bilt, 2000; Treuer, Fabian, & Furedi, 2001), they have not been answered empirically.

Griffiths (1997) proposed that Internet and Computer addiction is a form of behavioral addiction where software is constructed to promote addictive tendencies. Griffiths (1998) defined this form of behavioral addiction he called technology addiction:

> Technological addictions are operationally defined as non-chemical (behavioural) addictions which involve human-machine interaction. They can either be passive (e.g. television) or active (e.g. computer games) and usually contain inducing and reinforcing features which may contribute to the promotion of addictive tendencies (Griffiths, 1995). This author's view is that technological addictions are a subset of behaviourial addictions (Marks, 1990) and that behaviourial addictions feature the core components of addiction, i.e., salience, mood modification, tolerance, withdrawal, conflict and relapse (see Griffiths, 1996b). (p. 1)

While this concept has been controversial (Shaffer, 1996; Stern, 1998), brain imaging studies support this view (Koepp, Gunn, Lawrence, Cunningham, Dagher, Jones, Bench & Grasby, 1998; Holden, 2001). Using Positron Emission Tomography (PET), Koepp et al. (1998) studied scans of the striatum of human subjects playing video games. They

claim to be the first to have identified dopamine release in humans during behavioral tasks. This pharmacological change was positively correlated to the performance level during the execution of specific game tasks. It is theorized that this provides a mechanism for reinforcing motivation and appetite for the game play.

The initial reports from the HomeNet studies of computer use (Kraut, Lundmark, Kiesler, Mukhopadhyay, Scherlis, 1996) suggested that computer use was a source of depression and anxiety since it elevated stress. The subsequent follow up (Kraut, Keisler, Boneva,, Cummings, Helgeson, & Crawford, 2002) contradicted the earlier finding. The authors of the studies now hypothesize that when users first used the computer and the Internet, it may have resulted in additional stress and anxiety that would eventually disappear as users gained proficiency. LaRose, Lin, & Eastin, (2003) identified a causal relationship between depression and problematic Internet use in their university setting study. They concluded that depression coupled with media habits reduced depressed moods, but this undermined an individual's ability to self-regulate and led to increased Internet usage.

Certain behaviors associated with problematic computer/Internet use such as on-line shopping, gambling and stock market day trading may simply use the computer as a medium to express compulsions. The availability of the computer simply allows the compulsion to be expressed 24 hours a day, 7 days a week. Other problematic behaviors may be unique to the computer such as programming or web surfing and checking Email. Davis (2001c) supports this concept with his cognitive behavioral theory of Internet Addiction. He theorizes that there are two major forms of Internet addiction: Generalized

and Specific Pathological Internet Usage. He describes specific pathological Internet use as:

> Specific PIU involves overuse and abuse of specific Internet functions. These might be online auction houses, online pornography, online stock trading services, etc. Specific PIU is assumed to be the result of pre-existing psychopathology, which becomes associated with online activity. Therefore, the individual that might otherwise be a compulsive gambler would effectively realize that gambling is available online and eventually demonstrate specific PIU. A similar scenario might occur with the individual who compulsively (and pathologically) uses pornography. (p. 4)

He described Generalize Pathological Internet Use as more problematic. He claims that even though there most likely is a preexisting pathology, the disorder would not exist without the Internet. He attributes the social context of the individual as a major contributing factor. The lack of social support leads an individual to compulsive email checking, endless hours in chat rooms and replying to list serves and bulletin board communication.

Computer/Internet Addiction and the Mental Health Profession: Diagnosis and Treatment

Since 1986, there have been a number of reports of clinicians treating various forms of computer/Internet addiction (Sinclair User, 1986; Orzack, 1998; Young, 1998a; Young, 1998b; Greenfield 1999b; Schneider, 2000; Bai et al., 2001; Williams, 2002; Heron & Shapira, 2003; Howland, 2003; Shapira et al., 2003).

In the February 1986 issue of Sinclair User, reports of a clinician treating computer addiction surfaced. The Sinclair was a small, inexpensive personal computer introduced in the early 1980s and popular in England. Dr. Prem Mizra, a consulting psychiatrist at Duke Street Hospital, Glasgow, had been treating adults and teenagers suffering from computer addiction. He was quoted as saying "They became badly disturbed after computers took over their lives." According to the article, Mizra's first patients were teenage boys, suffering from "nightmares, illusions, excessive daydreaming and exhaustion from computer addiction." Dr. Mizra emphasized the need to reduce the time used on the computer but not to remove it suddenly, which can be too traumatic. He claims that for some, two or three hours on the computer should be the limit. While others may be able to cope with four or five.

To date there has been three different approaches to diagnosing problematic computer/Internet use. The first approach involved the modification of the DSM-IV (APA, 1994) criteria for Pathological Gambling to include computer/Internet use issues (Young, 1998; Griffiths, 1998; Beard & Wolf (2001). The second diagnostic approach use was to borrow the DSM-IV diagnostic criteria for substance dependence with features such as inability to stop, tolerance, symptoms of deprivation and negative social and performance consequences (Jerusalem, Hahn, Niesing & Heer, 2001). The third proposal, suggested by Shapira, et al. (2003), uses criteria consistent with the general style of impulse control disorders from the DSM-IV-TR.

"A Therapist's Guide to Assess and Treat Internet Addiction" (Young, n.d.) downloaded from Netaddiction.com on March 31, 2003 ($5.95) provides a general description of the subtypes of Internet addiction, case studies, theories of etiology,

assessment questionnaire and treatment techniques. Young claims to “often define Internet addiction as an impulse-control disorder that does not involve an intoxicant”. Young uses a modified DSM-IV Diagnostic criteria from Pathological Gambling (originally in Young, 1998) creating a brief questionnaire with the following eight questions:

1. Do you feel preoccupied with the Internet (think about previous online activity or anticipate next online 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 online 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 uses the Internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)? (p. 1)

“Patients are considered ‘addicted’ when answering ‘yes’ to five (or more) of the questions and when their behavior cannot be better accounted for by a Manic Episode.”

Young suggests treatment methods including behavioral techniques (practicing the opposite, external stoppers, set time limits, set task priorities, reminder cards and personal inventory. In addition, Young suggests "Advanced Techniques" drawing from Reality, Interpersonal and Insight-oriented therapy models. Twelve-step support and couples counseling are also suggested. Young provides on-line support for those afflicted at her "Virtual Clinic". In "When you need a safe place to turn…" from the Center for On-line Addiction, she lists email counseling, chat room counseling and telephone counseling as available treatment options.

Beard & Wolf (2001) proposed changes to Young's (1998b) criteria by separating the last three criteria and requiring at least one to diagnose Internet addiction. They explain the reasons:

> The reason these last three criteria are separated from the others is the fact that these criteria impact the pathological Internet user's ability to cope and function (e.g. depressed, anxious, escaping problems), and also impact interactions with other people in his or her life (e.g. significant relationship, job, being dishonest with others). (p. 381)

Shapira, Goldsmith, Keck, Khosla, & McElroy (2000) presented the psychiatric features of 20 individuals with problematic Internet use (defined as (1) uncontrollable, (2) markedly distressing, time-consuming or resulting in social, occupational or financial difficulties and (3) not solely present during hypomanic or manic symptoms). After detailed psychiatric evaluation, all (100%) met the criteria for Impulse Control Disorder NOS.

Further support for use of the Impulse Control Disorder NOS diagnosis for those afflicted with problem Internet use, Shapira, et al. (2003) explained why they did not agree with the use of the modified Pathological Gambling criteria for diagnosis of problematic computer use. “We believe it is important to propose criteria that are both broad enough to capture problematic internet users for systematic study but not so broad as to ignore other known psychiatric disorders that may account for the patient’s symptomology”. They suggested specific diagnostic criteria based on the general style of the DSM-IV impulse control disorders:

A. Maladaptive preoccupation with internet use, as indicated by at least one of the following.
    1. Preoccupations with use of the internet that are experienced as irresistible.
    2. Excessive use of the internet for periods of time longer than planned
B. 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.
C. The excess 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)

Mellissa Orzack of Computer Addiction Services at McLean Hospital claims to treat addictive behaviors/impulse disorders using a combination of Cognitive Behavioral Therapy (CBT) and motivational interviewing (Orzack, 1998). She also suggests that depression and anxiety be treated with antidepressant medication. Unlike Young, Orzack does not provide on-line or telephone treatment options. Davis (2001) also a proponent of

treating Internet addiction with CBT has published a 11 week treatment plan for clinicians to follow. Hall and Parsons (2001) provide a case study example diagnosis and case formulation based on CBT. As reported in "How to Survive the Internet" (Williams, 2002), Dr. Hillarie Cash and Jay Parker of the Internet/Computer Addiction Services near Seattle, Washington use CBT and suggest 12 step intervention to help computer and Internet addicted clients.

In the only on-line survey of clinicians treating Internet addiction (Young, 1998), five categories of problematic on-line use was described. These included 1) Cybersex, 2) Cyber-relationships, 3) obsessive online stock trading and gambling, 4) information-surfing and 5) computer games. This survey was quite small having received only 35 valid responses over a 6 month period. The vast majority (85%) claimed to have seen clients that "appear to be 'addicted' to the Internet." The respondent claimed to be treating an average of 9 Internet-addicted clients within the past year (a range of 2 to 50). The treatment methods included "cognitive behavioral approaches, sexual offender therapy, marital and family therapy, social skills training and pharmacological interventions". Moderation was felt possible as a treatment option by 60% of the respondents and 94% claimed that they felt the problem was far more widespread than the number of cases indicates. Sixty percent (60%) of the therapist saw clients with prior addition history including substance, eating and sexual addition. Only a minority (30%) saw clients that originally presented with psychiatric problems such as depression, anxiety and bi-polar disorder and later computer addiction was identified as related to Internet use.

The only published report of a survey from an on-line “virtual” mental health clinic came from Bai et al. (2001) in Taiwan. Affiliated with the department of psychiatry at Yu-Li Veterans Hospital in Taiwan, their survey of 251 clients resulted in identifying 38 (15%) meeting Young’s (1998b) criteria for Internet Addiction disorder. Two thirds (67%) of the respondents were female, most were single (84%) and the majority (56%) had never visited a real mental health clinic.

In addition to the few reports of therapists treating computer/Internet addiction, a number of web sites contain on-line questionnaires to aid possible individuals, parents and partners (Young, 2001; Orman, 1996; Davis, 2001b; Greenfield, n.d.; Gaultiere, 2002; Weiss, 2003) in diagnosis of possible Internet addiction. Many of these sites offer self help advice but often are commercial enterprises that recommended books, tapes or professional help from the site’s author, some which is available on-line (Orman, 1996; Young, 2001; Greenfield, n.d.). Along with providing self-help advice all of the sites listed above suggest or recommend professional help for those that are self diagnosed as addicted.

Evidence of problematic computer and Internet use came from a variety of sources as early as 1980. Within the past decade, on-line surveys of Internet and computer use have suggested that as much as 6% of the population suffer from academic, occupational or social problems related to excess computer or Internet use. The most significant problem with these studies is that they used self-selected samples and this could have significantly exaggerated the prevalence estimates. The diagnostic criteria used to identify Internet addiction was modified from the pathological gambling and substance abuse diagnostic criteria (DSM-IV) and some critics have suggested these as

inappropriate. The only off line study conducted suggests that within the general population of computer users in Sweden only 0.6% claim to have experienced the problem. Articles in the popular press over the past 8 years have provided dramatic anecdotal evidence of the problem. If as much as 6% of the population is afflicted with serious problems related to use of the computer or Internet, it follows that significant numbers would seek treatment from some form of mental health professional.

College students and adolescents have been identified in the literature (both in research and circumstantially) as high-risk groups for various forms of computer/Internet addiction. While some studies suggest that as much as 8% of college students may be addicted, Pratarelli et al. (1999), suggest (as a result of personal communication with counseling psychologists) that less than 1/2 of 1% of college student populations seek treatment due to excess computer/internet use. No research however has surveyed clinicians off-line to determine to what extent computer/Internet addicts of various ages actually seek treatment.

The behaviors and on-line activities associated with problematic computer/Internet use have limited empirical support in the literature. The most cited behavior associated with problematic computer/Internet use was excess socializing (including on-line affairs) via chat, email, use-groups and instant messaging. Next most cited problematic use identified was computer gaming. This was found to affect mostly male adolescent and young adults. This form of “addiction” is the only form that software developers, using behavioral psychology, are claiming to design into their products. Sexual activities (cybersex, pornography, sexual chat) represent another major cluster of behaviors associated with problematic computer/Internet use with published survey and

research support. To a lesser degree, compulsive web surfing, on-line gambling, shopping and stock trading, computer programming, and hacking have been implicated.

There has been debate in the popular press and the literature about whether or not problematic computer use represents an addiction, a distinct disorder or is it simply a symptom of other psychiatric problems. Other disorders most often diagnosed concurrently with identified problematic computer/Internet use include Impulse Control Disorder (ICD) Not Otherwise Specified and various forms of mood, anxiety and substance abuse disorders. There has also been debate as to what the most appropriate diagnosis to be given to someone with problematic computer/Internet use. Certain psychiatric clinicians promote the ICD diagnosis while other psychologists promote the modified DSM-IV criteria for pathological gambling or substance abuse. Very few clinicians have published case studies of diagnosis, treatment and outcome relative to treating individuals suffering from problematic computer or Internet use.

Only one study to date, conducted over five years ago, surveyed clinicians on their exposure to treating computer addicts (Young et al., 1999). This study was very small with only 35 valid completed on-line surveys captured over six months. In “Cyber Disorders: The Mental Health Concern for the New Millennium”, Young et al. (1999) presents the results of this study. She surveyed participants who responded to postings on electronic discussion groups and found the on-line survey through Internet web searches with the keywords “internet” or “addiction”. Besides the small sample size, this study suffers from the same major flaw as the other on-line surveys, selection bias. Young (1999) found that 85% of respondents reported having treated a client that appeared addicted to the Internet. She also reports that the respondents claim to have treated, on

average, nine Internet-addicted clients within the past year. Eighty percent of the respondents (n=28) claim to have seen a rise in the number of clients who spent an excessive amount of time using the Internet and 94% claim to believe that the problem is more widespread than the number of cases indicated. Ninety percent strongly agree or agree to the statement "I feel that addictive use of the Internet may become a significant problem in our society". A majority (60%) of the respondents report that they believe moderation is possible to treat addictive Internet use. The same percent have seen Internet addicted clients that also suffer from other addictions (i.e. alcohol, sex and food). Only 30% have seen clients that present with clinically related issues such as depression, bi-polar disorder or anxiety.

No off line survey of clinicians has ever been conducted to identify the problematic behaviors and on-line activities, co-morbid symptoms of computer/Internet addicts in treatment and the preferred diagnostic and treatment methods of their clinicians.

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Appendix C

Vita

Kenneth Woog

Education

Trinity College of Graduate Studies, Master of Arts in Counseling Psychology, 2002.
Pepperdine University, Master of Arts in Psychology, 2001.
California State University, Fullerton, undergraduate psychology foundation course study, 1999-2000.
BS, Electrical and Electronics Engineering, California State Polytechnic University, Pomona, 1978.

Experience/Training

Adolescent Anger Management Certification – Anderson and Anderson
January 2004

Pepperdine University PRYDE Youth Diversion Program
October 2002 to Present

Pepperdine University Affiliated Counseling Education Program
October 2001 to May 2002

Business and Engineering Experience

Woog Laboratories
1998 to present: Consultant and product development in personal computer field.

Futuretouch Corporation
1994 to 1998: Co-founder and Director

Phoenix Technologies Ltd.
1992 to 1994:
Director, Desktop Product Line, Director, Strategic Development Group

Quadtel Corporation
1990 to 1992: Vice President, Sales and Marketing
1985 to 1990: Hardware Design Consulting

ABM Computer Systems
1984 to 1985: Director of Engineering

LNW Research Corporation
1980 to 1984: Co-founder and President

Computer Automation
1978 to 1980: Design Engineer

Heathkit Electronics, Pomona
1975 to 1978: Service Technician

Professional Memberships
American Psychological Association**,** Student Member
PSI-CHI, National Psychology Honor Society

U.S. Patent
5,630,144 Issued 1997
Desktop Computer Monitor Power Control Using Keyboard Controller