University of New Hampshire
University of New Hampshire Scholars' Repository

Psychology Scholarship   College of Liberal Arts (COLA)

12-2009

Index of Problematic Online Experiences: Item Characteristics and Correlation with Negative Symptomatology

Kimberly J. Mitchell
University of New Hampshire - Main Campus

Chiara Sabina
Pennsylvania State University - Main Campus

David Finkelhor
University of New Hampshire - Main Campus, David.Finkelhor@unh.edu

Melissa Wells
University of New Hampshire, Melissa.Wells@unh.edu

Follow this and additional works at: https://scholars.unh.edu/psych_facpub

Recommended Citation

Index of Problematic Online Experiences: Item Characteristics and Correlation with Negative Symptomatology

Kimberly J. Mitchell, Ph.D.,[1] Chiara Sabina, Ph.D.,[2]
David Finkelhor, Ph.D.,[1] and Melissa Wells, Ph.D., LICSW[3]

Abstract

This exploratory study aimed to develop and test a quick, easily administered instrument, the Index of Problematic Online Experiences (I-POE). The goal of the I-POE extends beyond assessing for Internet overuse to broadly assess problematic Internet use across several domains and activities. Data was collected from 563 college students from a Northern New England university using an online survey methodology. Results indicated the I-POE has adequate construct validity and is highly correlated with a variety of relevant constructs: depression, anger/irritability, tension-reduction behavior, sexual concerns, and dysfunctional sexual behavior as measured by the Trauma Symptom Inventory; as well as amount of Internet use and permissive attitudes toward engaging in a variety of sexual activities. Early flagging of online experiences could mitigate the negative effects associated with problematic use. The I-POE, as an easy-to-administer, short screening index, holds promise in this regard. Initial testing of the instrument points to its utility in identifying persons who are experiencing a broad range of Internet-related problems.

Introduction

CLINICIANS AND EDUCATORS are increasingly being called upon to proffer advice and counsel to clients and families about problems stemming from Internet use. A wide variety of problems can arise from Internet use, including overuse in general and problems related to specific activities such as pornography, sexual exploitation, harassment, infidelity, fraud, and isolative-avoidant use.[1] To our knowledge, no clinical instruments have been developed to specifically assess a broad range of problematic Internet use behavior. Existing instruments focus primarily on Internet addiction or overuse,[2–5] with limited attention to other types of Internet-related problems. This exploratory study presents the Index of Problematic Online Experiences (I-POE) as one means of assessing a broad range of experiences.

This work introduces a short instrument, the I-POE, useful in assessing a broad range of problematic Internet experiences and behaviors. *Problematic Internet use* typically describes individuals who have problems with specific online activities, such as use of pornography and gambling.[6] In reality, many online experiences covary with each other and also carry over to impact experiences and behavior off-line.[eg,7–9] Therefore, we define problematic Internet experiences as encompassing a broad range of possible online behaviors and experiences that, together or individually, result in a disruption of relationships, values, daily obligations, and/or mental or physical well-being.

In a sample of college students, we examine the properties of this instrument as well as its relationship with indicators associated with problematic online experiences, including overuse or addiction,[10–15] depression,[16–18] loneliness,[18–20] problems with impulse control,[18,21] and problematic sexual behavior.[22,23] Based on prior research, we hypothesize that higher total I-POE scores will be related to more Internet use as well as to higher negative symptomology scores (e.g., depression, sexual concerns) and permissive sexual attitudes.

Content development and theoretical foundation

The theoretical foundation for I-POE was conceptualized, in part, on Davis's cognitive-behavioral model of generalized pathological Internet use (PIU)[24] and designed in content

[1]Crimes against Children Research Center, Family Research Lab, University of New Hampshire, Durham, New Hampshire.
[2]School of Behavioral Sciences & Education, Pennsylvania State University, Capital College, Middletown, Pennsylvania.
[3]Department of Social Work, University of New Hampshire, Durham, New Hampshire.

from the Inventory of Problematic Internet Experiences.[25] Generalized PIU involves spending abnormal amounts of time online.[24] Procrastination also plays a role in the development and maintenance of generalized PIU in using the Internet to put off responsibilities. In turn, this time spent online results in significant problems with daily functioning. Such individuals would likely not be encountering such problems if the Internet did not exist, although prior conditions likely existed, including maladaptive cognitions and social isolation. The proposed index is not designed to directly test this theory but instead to serve as a foundation for its conceptualization, namely, the potential role of the Internet in the disruption of daily lives, obligations, and relationships.

The I-POE content was developed from identified markers of problematic Internet experiences that emerged in a large study of mental health providers' experiences with this emerging issue.[25] In that study, mental health providers' reports of Internet-related problems were used to identify an inventory of 11 types of problematic Internet experiences:

1. Overuse of the Internet
2. Internet pornography use
3. Sexual exploitation and abuse
4. Online infidelity
5. Gaming, gambling, or fantasy role-play
6. Harassment
7. Isolative-avoidant behavior
8. Fraud, stealing, or deception
9. Failed online relationships
10. Harmful material
11. Risky or inappropriate use not otherwise specified

Such experiences and behaviors were labeled problematic by the clinicians in the study because of the negative impact they had on their clients' lives in the areas of family and intimate relationship (e.g., divorce, parent-child conflict), work (e.g., loss of job), school (e.g., failing grades, disciplinary problems), the law (e.g., arrest), victimization, aggression, and mental health (e.g., depression, anxiety) issues.

Materials and Methods

Undergraduate students from a Northern New England public university were recruited through professors to participate in an anonymous online survey regarding Internet use and exposure to Internet pornography. As an incentive, participants could enter a raffle on a separate Web site to win 1 of 10 $100 checks. We gathered 594 responses: 12% of 4,992 students in the classes of 48 professors who voluntarily participated. The final sample totaled 563, of which 34% ($n = 192$) were male, the mean age was 19.86, 93.4% identified as White, and 72% identified as freshman or sophomores. Data collection occurred during the Spring semester of 2006.

Survey instruments included (a) the I-POE; (b) a modified version of Sexual Attitudes for Self and Others Questionnaire[25] to ascertain sexual attitudes toward engaging in a variety of different sexual activities (e.g., mutual masturbation with someone of the opposite sex, engaging in sex with a partner in the presence of others); (c) five subscales of the Trauma Symptom Inventory[27] (depression, anger/irritability, tension-reduction behavior [tendency to turn to external

methods of reducing internal stress], sexual concerns [e.g., sexual dissatisfaction], and dysfunctional sexual behavior [dysfunctional because of its indiscriminate quality, its potential to self-harm, or its inappropriate use]) chosen on the basis of their associations with Internet-related problems in the literature as discussed earlier; and (d) the short version of the Marlow-Crowne Social Desirability Scale.[28] In addition, we asked about Internet expertise, amount and type of Internet use, and importance and computed a factor score for Internet use.

The I-POE was developed to be used either as a total scale or to focus on specific domains of problematic Internet use on the basis of (a) Davis's model of generalized PIU[24] and (2) having been identified as presenting or secondary issues in clinical settings.[29–31] Those domains are

1. Overuse (3 items)
2. Problems with family or friends (6 items)
3. Problems with daily obligations (6 items)
4. Problems related to interactions with people online (4 items)
5. Upset or concern about own Internet use (4 items)
6. Online behavior concerns (3 items)

As I-POE is both exploratory in nature and also intended to serve as a quick assessment tool, we specifically kept the number of items per domain small. Further refinement of the items among a national population of adolescents is ongoing. I-POE questions asked respondents to report on their own experiences and behavior in the past year.

The total I-POE score was obtained by summing the affirmative items. Twelve low-endorsement items, as they are likely more indicative of problematic Internet use, were weighted with a value of 2 for a positive response, while all other items were weighted with a value of 1 (see Table 1). A total score of 38 was possible with a mean of 2.47 ($SD = 2.95$; range: 0 to 21) using the weighted items.

Results

Frequency of reporting problematic Internet experiences with the I-POE varied from a high of 36% of all students saying they "use the Internet late at night fairly often" to a low of 0% who had been "arrested or in trouble with the law for something you did on or through the Internet" (see Table 1 for all items and frequencies). Significant gender differences were found with male students having a higher weighted mean score ($M = 3.25$, $SD = 3.51$) than female students ($M = 2.07$, $SD = 2.53$) ($F = 4.59$, $p < 0.001$).

Construct validity was provided by correlations and regressions that show the relationship of I-POE to related constructs. Specifically, the total I-POE score was found to be correlated with depression ($r = 0.33$, $p < 0.001$), anger/irritability ($r = 0.34$, $p < 0.001$), sexual concerns ($r = 0.44$, $p < 0.001$), dysfunctional sexual behavior ($r = 0.44$, $p < 0.001$) and tension reduction-behavior ($r = 0.47$, $p < 0.001$), permissive attitudes toward engaging in a variety of sexual activities ($r = 0.24$, $p < 0.001$), and amount of Internet use ($r = 0.35$, $p < 0.001$). A series of regressions showed that I-POE scores were significantly related to each of the above negative indicators, permissive sexual attitudes, and Internet use even after adjusting for age, sex, Internet use characteristics, and social desirability (see Table 2).

TABLE 1. PAST YEAR I-POE ITEMS AND FREQUENCIES (%) (N = 563)

Item	%
Overuse	
(Range: 0–3; mean = 0.59, SD = 0.75)	
Do you use the Internet late at night fairly often? By late at night, I mean after your friends or family think you are in bed.	36%
Have you felt that you use the Internet a lot more than most other people?	16%
Could you stop using the Internet without a struggle after using it for an hour or two? (reverse coded)	7%
Problems with family or friends	
(Range: 0–6; mean = 0.44; SD = 0.92)	
Have friends or family thought you use the Internet a lot more than other people?	16%
Has your Internet use created problems between you and any of your friends or family?	9%
Have friends or family worried or complained about your Internet use?	8%
Have you spent more time communicating with people you meet on the Internet than with people you know in person (like family or friends)?	5%
Have you lost friends because of your Internet use?*	3%
Have friends or family gone to anyone for help about *your* Internet use?*	< 1%
Problems with daily obligations	
(Range: 0–7; mean = 0.31; SD = 0.89)	
Have you lost sleep for 2 or more days in a row because of your Internet use?	7%
Have you skipped meals or eaten too much unhealthy food for 2 or more days in a row because of your Internet use?	6%
Have you gotten into trouble at school or work because of your Internet use?*	4%
Have you neglected your obligations, such as your family or work, for 2 or more days in a row because of your Internet use?*	3%
Have you skipped taking a shower or bath for 2 or more days in a row because of your Internet use?*	2%
Have you been suspended from school or lost a job because of your Internet use?*	< 1%
Problems with people online	
(Range: 0–5; mean = 0.51; SD = 0.76)	
Have you gotten into arguments or had other problems with people you communicate with on the Internet?	31%
Have you communicated with someone on the Internet who didn't turn out to be who they said they were?	14%
Have you lost money or other personal property to someone you met on the Internet?*	2%
Has anyone you met on the Internet been arrested or in trouble with the law, where their actions or conversations toward you were part of the problem?*	1%
Upset/concern about own Internet use	
(Range: 0–3; mean = 0.36; SD = 0.62)	
Have you been upset, embarrassed, or afraid because of something that happened while you were using the Internet?	21%
Have you felt guilty about your Internet use?	13%
Have you gone to a parent, teacher, or supervisor for help about your Internet use?*	1%
Have you been seen by a psychologist, counselor, or other mental health provider for help with an emotional problem, where the Internet was part of the problem?*	< 1%
Online behavior	
(Range: 0–3; mean = 0.27; SD = 0.56)	
Have you pretended to be somebody else on the Internet for the purposes of fooling or misleading someone (other than situations like gaming where you were supposed to be someone else)?	22%
Have you seen any Web sites featuring weapons, bombs, or other violent material that you wanted to make or act out in real life?*	3%
Have you been arrested or in trouble with the law for something you did on or through the Internet?*	0%

*Items with a prevalence of less than 5% are given higher weights in scoring (a weight of 2 instead of 1).

Discussion

Findings suggest the I-POE is useful as a risk marker for problematic Internet experiences that could impact the lives of young adults. The theoretical foundation for I-POE was conceptualized, in part, on Davis's cognitive-behavioral model of generalized PIU[24] and designed in content from an inventory of a variety of problematic Internet experiences as reported by mental health professionals,[32] which adds to the content validity of the I-POE.

While some of the items were more normative (e.g., using the Internet late at night), others focused on atypical Internet behavior among college students. These statistically atypical behaviors might be more indicative of Internet-related

TABLE 2. REGRESSION ANALYSES FOR TOTAL I-POE SCORE
PREDICTING NEGATIVE SYMPTOMATOLOGY, ATTITUDES
TOWARD A VARIETY OF SEXUAL ACTIVITIES,
AND INTERNET USE ($N = 563$)

Criterion variable	I-POE β	Model R^2
Depression	0.25***	0.15
Anger/irritability	0.24***	0.26
Sexual concerns	0.37***	0.23
Dysfunctional sexual behavior	0.41***	0.23
Tension-reduction behavior	0.41***	0.28
Permissive sexual attitudes	0.13**	0.24
Amount of Internet use	0.31***	0.16

**$p < 0.01$; *** $p \leq 0.001$.
Note: Each model included controls for gender, age, chat room use, gaming, blogging, dating site use, talking online, and social desirability.

problems. The variety of items included in the I-POE lends to its usefulness in screening a broad range of problematic Internet use among many types of Internet users. Therefore, endorsement of particular individual items may be key indicators of online problems in and of themselves and could be flagged for follow-up. Items reflecting online issues related to losing friends, school trouble, being arrested or in trouble with the law, fraud, and exposure to violence may all be indicative of areas of concern.

Construct validity was established based on correlations between I-POE score and characteristics found to be related to problematic Internet use in previous studies. Specifically, higher I-POE scores were related to more Internet use,[33] sexual concerns, dysfunction sexual behavior and permissive sexual attitudes,[22] and depression.[16,17] The I-POE is also related to anger and irritability and tension-reduction behavior (other research found a relationship with prolonged stress—a similar construct[17]). These associations remained significant even when controlling for social desirability and Internet use characteristics. Such associations indicate an intersection of both online and offline concerns. The directionality of online and offline concerns, however, is unclear. For example, longitudinal research is necessary to help determine whether persons with dysfunctional sexual behavior are more likely to encounter problems online, perhaps with risky or inappropriate sexual relationships or pornography; whether persons who seek out such experiences online develop dysfunctional sexual behaviors offline; or whether such online and offline behavior develops concurrently. The significant relationships among I-POE scores and all constructs documented in the literature underscore the validity of the instrument.

Future directions and implications

These findings provide initial support for its use as an easily administered assessment tool for clinicians concerned about problematic Internet use. Early flagging of these issues could mitigate the negative effects associated with problematic use. Indications of potential problematic Internet use should be followed with more in-depth questioning by clinicians about the details of specific experiences and behavior online as well as how those events may be impacting their daily lives and mental health. Future research on the utility of this scale is necessary in clinical populations of adolescents

and adults as well as in general population samples. Further validation of the I-POE is necessary with general and clinical populations. Testing with these populations would generate prevalence rates of problematic Internet use and aid the development of clinical cutoff scores. Additionally, convergent validity should be documented by correlating I-POE scores to scores derived from other emerging measures of problematic Internet use. While this study established initial validity of the I-POE, testing of other items that target additional problems with Internet use is important, especially given the rapidity with which the technological environment changes.

Limitations

Although the current study provides useful insights about problematic Internet use, it is important to acknowledge the limitations of this study. First, the use of a convenience sample limits the generalizability of the findings. Testing of this instrument with the general population and clinical samples is needed in order to reaffirm its validity. Second, there was a low response rate among this population of college students. Third, as with many screening instruments, the retrospective self-reporting of behaviors could influence accuracy. Fourth, the current version of the I-POE does not specify enough detail to assess for some documented problematic Internet experiences, such as harassment.[29,34] Nonetheless, the I-POE is an easy and straightforward way to identify clients who may need more thorough assessments around their Internet use.

Conclusion

An understanding of Internet-related problems and how they intersect with more traditional concerns coming to the attention of clinicians is necessary in this technological age. The I-POE, as an easily administered, short screening index, holds promise in this regard. Initial testing of the instrument points to its utility in identifying persons who are experiencing a broad range of Internet-related problems.

Disclosure Statement

No competing financial interests exist.

References

1. Mitchell KJ, Becker-Blease KA, Finkelhor D. Inventory of problematic Internet experiences encountered in clinical practice. Professional Psychology: Research & Practice 2005; 36:498–509.
2. Young K. Internet Addiction: evaluation and treatment. Student BMJ 1999; 7:351.
3. Jong-Un K. The effect of an R/T group counseling program on the Internet addiction level and self-esteem of Internet addiction university students. International Journal of Reality Therapy 2008.
4. Jenaro C, Flores N, Gamez-Vela M, et al. Problematic Internet and cell-phone use: psychological, behavioral, and health correlates. Taylor & Francis Ltd, 2007.
5. Engelberg E, Sjoberg L. (2004) Internet use, social skills, and adjustment. Mary Ann Liebert.
6. Yellowlees PM, Marks S. Problematic Internet use or Internet addiction? Computers in Human Behavior 2007; 23: 1447–53.

7. Mitchell KJ, Wells M. Problematic Internet experiences: primary or secondary presenting problems in persons seeking mental health care? Social Science & Medicine 2007; 65:1136–41.

8. Mitchell KJ, Finkelhor D, Becker-Blease KA. Classification of adults with problematic Internet experiences: linking Internet and conventional problems from a clinical perspective. CyberPsychology & Behavior 2007; 10:381–92.

9. Mitchell KJ, Finkelhor D, Becker-Blease KA. Linking youth Internet and conventional problems: findings from a clinical perspective. Journal of Aggression, Maltreatment & Trauma 2007; 15:39–58.

10. Kaltiala-Heino R, Lintonen T, Rimpela A. Internet addiction? Potentially problematic use of the Internet in a population of 12–18 year-old adolescents. Addiction Research & Theory 2004; 12:89–96.

11. Leung L. Net-generation attributes and seductive properties of the Internet as predictors of online activities and Internet addiction. Cyberpsychology & Behavior 2004; 7:333–48.

12. Thatcher A, Goolam S. Defining the South African Internet "addict": Prevalence and biographical profiling of problematic Internet users in South Africa. South African Journal of Psychology 2005; 35:766–92.

13. Johansson A, Gotestam KG. Internet addiction: characteristics of a questionnaire and prevalence in Norwegian youth (12–18 years). Scandinavian Journal of Psychology 2004; 45:223–9.

14. Pratarelli ME, Browne BL. Confirmatory factor analysis of Internet use and addiction. Cyberpsychology & Behavior. 2002; 5:53–64.

15. Young KS. Internet addiction: a new clinical phenomenon and its consequences. American Behavioral Scientist 2004; 48:402–15.

16. Young KS, Rogers RC. The relationship between depression and Internet addiction. CyberPsychology & Behavior 1998; 1:25–8.

17. Thomee S, Eklof M, Gustafsson E, et al. Prevalence of perceived stress, symptoms of depression and sleep disturbances in relation to information and communication technology (ICT) use among young adults—an explorative prospective study. Computers in Human Behavior 2007; 23:1300–21.

18. Davis RA, Flett G, Besser A. Validation of a new scale for measuring problematic Internet use: implications for pre-employment screening. CyberPsychology & Behavior 2002; 5:331–45.

19. Morahan-Martin J, Schumacher P. Incidence and correlates of pathological Internet use among college students. Computers in Human Behavior 2000; 16:13–29.

20. Morahan-Martin J, Schumacher P. Loneliness and social uses of the Internet. Computers in Human Behavior 2003; 19:659–71.

21. Shapira NA, Lessig MC, Goldsmith TD, et al. Problematic Internet use: proposed classification and diagnostic criteria. Depression & Anxiety 2003; 17:207–16.

22. Cooper A, Delmonico DL, Griffin-Shelley E, et al. Online sexual activity: an examination of potentially problematic behaviors. Sexual Addiction & Compulsivity 2004; 11:129–43.

23. Meerkerk G, Eijnden RJ, Garretsen HFL. Predicting compulsive Internet use: It's all about sex! Cyberpsychology & Behavior 2006; 9:95–103.

24. Davis RA. A cognitive-behavioral model of pathological Internet use. Computers in Human Behavior 2001; 17:187–95.

25. Mitchell KJ, Becker-Blease K, Finkelhor D. Inventory of problematic Internet experiences encountered in clinical practice. Professional Psychology: Research & Practice 2005; 36:498–509.

26. Story MD. A longitudinal study of the effects of a university human sexuality course on sexual attitudes. Journal of Sex Research 1979; 15:184–204.

27. Briere J. (1995) *Trauma Symptom Inventory (TSI) professional manual*. Lutz, FL: Psychological Assessment Resources.

28. Strahan R, Gerbasi KC. Short, homogeneous versions of the Marlowe-Crowne Social Desirability Scale. Journal of Clinical Psychology 1972; 28:191–3.

29. Wells M, Mitchell K. Problematic Internet experiences: primary or secondary presenting problems in persons seeking mental health care? Social Science & Medicine 2007; 65:1136–41.

30. Wells M, Mitchell K, Finkelhor D, et al. Mental health professionals' exposure to clients with problematic Internet experiences. Journal of Technology in Human Services 2006; 24:35–52.

31. Wells M, Mitchell K. Youth sexual exploitation on the Internet: DSM-IV diagnosis and gender differences in co-occurring mental health issues. Child & Adolescent Social Work Journal 2007; 24:235–59.

32. Mitchell KJ, Becker-Blease KA, Finkelhor D. Inventory of problematic Internet experiences encountered in clinical practice. Professional Psychology: Research & Practice 2005; 36:498–509.

33. Widyanto L, McMurran M. The psychometric properties of the Internet Addiction Test. Cyberpsychology & Behavior 2004; 7:443–50.

34. Ybarra ML, Mitchell KJ. Online aggressor/targets, aggressors, and targets: a comparison of associated youth characteristics. Journal of Child Psychology & Psychiatry 2004; 45:1308–16.

Address correspondence to:
Dr. Kimberly J. Mitchell
Crimes against Children Research Center
University of New Hampshire
10 West Edge Drive, Suite 106
Durham, NH 03824-3586

E-mail: Kimberly.Mitchell@unh.edu
Web: www.unh.edu/ccrc