

THE ROLE OF SEXUAL COMPULSIVITY, IMPULSIVITY, AND EXPERIENTIAL AVOIDANCE IN INTERNET PORNOGRAPHY USE

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Previous research has found that a significant proportion of individuals who use Internet pornography (IP) report that their use is problematic in some area of functioning. Problematic IP use has been conceptualized as an aspect of sexual addiction and as having components of impulsivity and compulsivity. Experiential avoidance also has been implicated in problematic IP use. The current study further examined the relationship between problematic IP use and these variables. Participants (N = 94), who were categorized as having problematic or nonproblematic IP use based on their responses to four questions, completed an online survey regarding their use of IP. Results indicated that there were significant differences between individuals with and without problematic IP use in hours of IP used per week, sexual compulsivity, amount of interference from sexual urges, experiential avoidance, and negative and positive effects of IP use. Results from the current study help clarify conceptualizations of problematic IP use, and implications for treatment are suggested.

Key words: pornography, Internet, sexual compulsivity, impulsivity, experiential avoidance

In recent years, the Internet pornography (IP) business has grown to an estimated 13-billion-dollar industry (Ropelato, 2006), with nearly 50% of all Internet use related to sexually oriented websites (McNair, 2002). For several years research has indicated that, for some individuals, IP use may be associated with negative outcomes, including depression, anxiety, relationship/intimacy difficulties (Philaretou, Malhfouz, & Allen, 2005), career problems, financial losses (Schneider, 2000), decreased sexual satisfaction (Stack, Wasserman, & Kern, 2004), and risky sexual behavior (Carroll et al., 2008; Häggström-Nordin, Hanson, & Tyden, 2005; Morrison, Harriman, Morrison, Bearden, & Ellis, 2004; Peter & Valkenburg, 2008). More than half of male IP users indicate that their pornography use is problematic in at least one major life domain, with the greatest implications in psychological/spiritual, behavioral (e.g., relationship problems, problems at work or school), and social domains (Twohig, Crosby, & Cox, 2009). While it is evident that some individuals suffer significant negative outcomes from IP use, which individuals suffer and why they suffer remains unclear. There is an ongoing debate in IP research regarding what constitutes problematic levels of IP use (Kubey, Lavin, & Barrows, 2001) and how problem use should be conceptualized.

Problem IP use has been conceptualized as an aspect of sexual impulsivity (Mick & Hollander, 2006), sexual compulsivity (Cooper, Scherer, Boies, & Gordan, 1999; Davis, Flett, & Besser, 2002; Griffiths, 2001), and sexual addiction (Orzack & Ross, 2000). Previous research has estimated that 17% of the U.S. population who view pornography regularly meet criteria for sexual compulsivity (Cooper, Delmonico, & Burg, 2000), and often individuals describe their own use as “impulsive,” “compulsive,” or “addictive” (Bancroft & Vukadinovic, 2004). Impulsivity often is defined as acting suddenly on an urge with little forethought. Impulsive actions can be dysfunctional or functional. Though impulsive behavior most often is thought of negatively, it also can be adaptive or functional, such as in situations where quick action without excessive deliberation allows an individual to take advantage of an unexpected opportunity (Evensen, 1999). Impulsivity also commonly is understood as action toward engaging in pleasurable activities with little forethought (Grant, Mancebo, Pinto, Eisen, & Rasmussen, 2006; Schlosser, Black, Blum, & Goldstein, 1994). Sexual compulsivity has been characterized by the insistent, repetitive, and intrusive urge to engage in sexual behaviors (Kalichman & Rompa, 2001). Compulsivity tends to be associated with the idea of removing a negative feeling and likened to a compelling, nagging, or distracting feeling that one must engage in a certain behavior (e.g., feeling that one must scratch an itch).

Mick and Hollander (2006) conceptualized problematic sexual behaviors as being related to characteristics of both impulsivity and compulsivity. Within this model, acting on an impulse initiates a cycle of urges to engage in sexual behavior (i.e., the compulsive component). Several studies have supported the relationship between impulsivity and Internet use (Davis et al., 2002; Shapira, Goldsmith, Keck, Khosla, & McElroy, 2000), which may initiate the cycle. The sexual behavior is pleasurable at first, and physiological reinforcement maintains the behavior. However, personal factors such as loneliness, anxiety, depression, or interpersonal stress may contribute to the ease of conditioning as the behavior alters a negative mood (Cooper, Putnam, Planchon, & Sylvain, 1999), leading to compulsions to engage in the behavior for some. Thus, the pleasurable physiological response initiates sexual behavior, and the physiological and psychological reinforcement that results from the behavior maintain the cycle. Further, Quayle and Vaughan (2006) theorized that individuals using the Internet to satisfy sexual needs may be particularly prone to addictive use because of this cycle of reinforcement. Specifically, Quayle and Vaughan asserted that the ease of accessing the Internet and the relative anonymity one can maintain while using it, combined with its capabilities for mood alteration, make it likely to inspire addiction.

The unique characteristics of the Internet also provide a likely outlet for an increase in problematic sexual behavior. Even before the omnibus use of the Internet, an estimated 3–6% of the population experienced significant difficulty related to sexual compulsivity (Coleman, 1992), and the Internet provides a likely outlet for more of this behavior. Cooper, Putnam, et al. (1999) posited that the accessible, affordable, and anonymous nature of the Internet provides a convenient medium for sexual behavior. Young (1999) added two other concepts to Cooper’s model. First, he explained that engaging in sexual behavior in one’s home or workplace engenders a feeling of safety. Second, the mood-altering experience provided by IP use allows one to escape from the stress and demands of real life. Thus, the Internet may contribute to increases in the prevalence of sexual compulsivity.

Research on problematic Internet use has indicated that individuals often use the Internet for mood alteration (Caplan, 2002). One mode of mood alteration is experiential avoidance, the avoidance of aversive private experiences (e.g., bodily sensations, thoughts, memories, emotions) and attempts to alter the form or frequency of such private experiences (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Previous research has indicated that experiential avoidance may maintain and/or exacerbate compulsive (Hayes et al., 1996; Twohig, 2010), impulsive (Begotka, Woods, & Wetterneck, 2004; Flessner, Busch, Heideman, & Woods, 2008), and addictive behaviors (Hayes et al., 2004; Stotts, Masuda,

& Wilson, 2009; Wilson, Byrd, Hayes, & Strosahl, 2005), all of which have been conceptually related to sexual compulsivity and problematic IP use (Grant & Potenza, 2006).

One similarity that impulsive, compulsive, and addictive behaviors may share is the urge to avoid either actions and/or thoughts. That is, individuals engaging in compulsive behavior can be said to use their compulsive behavior to avoid/reduce anxiety experienced with the presence of frightening or egodystonic obsessions (Twohig et al., 2010). Similarly, impulsive behaviors, such as trichotillomania, may involve an element of distraction from boredom or anxiety (Norberg, Wetterneck, Woods, & Conelea, 2007). Addictive behaviors, such as substance abuse, also are clinically well known to involve regulation of negative emotions (e.g., avoidance of painful memories) and/or the avoidance of boredom or anxiety through substance use (Hayes et al., 2004; Stotts et al., 2009; Wilson et al., 2005). Thus, whether sexual compulsivity is considered a compulsive, impulsive, or addictive problem, experiential avoidance may be indicated. Conceptualizations of compulsive, impulsive, and addictive behaviors may all involve regulation of thoughts, feelings, or urges through behavior. Likewise, some have posited that the urge to use IP is one that is regulated through the use of IP (Twohig & Crosby, 2010). Additional evidence also has indicated that experiential avoidance may be positively correlated with higher distress from IP use (Twohig & Crosby, 2010). Thus, preliminary evidence suggests that experiential avoidance may be related to problematic IP use.

Despite these recent advances, additional research is needed to clarify how problematic IP use should be conceptualized and how it may be related to sexual compulsivity, impulsivity, and experiential avoidance. The current study examined relationships between experiential avoidance, sexual compulsivity, impulsivity, and IP use. Specifically, the current study sought to examine how experiential avoidance, sexual compulsivity, and impulsivity are related to IP use being problematic or nonproblematic. This research was expected to replicate and expand on several previous findings indicating relationships between sexual compulsivity and problematic sexual behavior; impulsivity, experiential avoidance, and sexual compulsivity; and experiential avoidance and problematic IP use.

Method

Participants

Participants were 494 adults ranging from 18 to 66 years old ($M = 29.5$, $SD = 9.0$). Participants were primarily female (69.2%; $n = 342$) and Caucasian (63.4%; $n = 313$). Other race/ethnicities represented included Hispanic (13.6%; $n = 67$), African American (8.5%; $n = 42$), Asian (8.1%; $n = 40$), Indian (2.6%; $n = 13$), Native American (0.6%; $n = 3$), Middle Eastern (0.4%; $n = 2$), and Other/Biracial (3.0%; $n = 14$). Participants reported their sexual orientation as heterosexual (89.8%; $n = 444$), homosexual/gay (4.5%; $n = 22$), and bisexual (5.7%; $n = 28$).

Procedure

Recruitment and administration. The present study investigated factors related to problematic IP use. Participants were recruited from a mid-size university in southeast Texas and from a community sample. Students were recruited in one of three ways: through the university participant pool, at in-class recruitment sessions, and via class announcements in undergraduate and graduate psychology classes. Participants from the community were recruited through “snowball” e-mailing and advertisements placed on websites. Snowball e-mailing involved sending a description of the study to potential participants, requesting that the recipients take the study and then forward the opportunity to their own contacts. Snowball emailing has been used successfully in similar studies that deal with potentially sensitive information (Kraut et al., 2003). The use of this method of recruitment necessarily limits the generalization of findings, as the sample cannot be said to represent the general

population. However, the goals of the current study included the examination of an understudied topic of sexual behavior; therefore, reaching problematic IP users was considered a priority over the generalization of findings to the wider population.

Students completing the study at an in-class recruitment session completed a hard-copy version of the study; other participants completed the survey online. Community participants had the opportunity to provide their e-mail address if they wished to enter a drawing for a \$50 raffle prize. Student participants had the option of either receiving extra credit in their psychology courses or participating in the raffle.

In addition to demographic information, participants answered questions regarding their history of sexual behaviors and IP use and indicated the frequency with which they use IP (see the Appendix). Several measures related to effects of IP use and personal characteristics also were included in the study. This study was conducted as a part of a larger study on IP use; therefore, only those questionnaires relevant to the purposes of this study are described here. The order of administration of questionnaires included in the current study was as follows: demographics; the Pornography Consumption Effects Scale; the Sexual Compulsivity Scale; the Impulsivity, Risk-Taking, and Sensation Seeking Scale; the Sexual Symptom Assessment Scale; and the Acceptance and Action Questionnaire-II.

IP users were coded as problematic or nonproblematic to explore differences between the groups. For the purposes of this study, problematic use was determined based on affirmative responses to questions that resemble DSM-IV-TR (American Psychiatric Association, 2000) criteria for addictive behaviors. Thus, questions that endorsed acknowledgment of sexual addiction were included. Given that many persons with addiction may not openly admit to their addiction, questions about impairment in important areas of life functioning were also used to determine whether IP use was problematic. Problematic use was indicated either by an answer of "significantly" or "somewhat significantly" to the question, "How much [does addiction] contribute to your reason for using Internet pornography" or an answer of "slightly agree" or "strongly agree" to one of the following questions: "I feel like my use of Internet pornography is putting my relationship(s), job, or reputation at risk," "I think I am addicted to Internet pornography," or "I have wanted to stop looking at Internet pornography and have not been able to." These items were chosen either because of their similarity to DSM-IV-TR criteria for addiction or because they indicated that the individuals viewed themselves as addicted to IP. Though this approach might inherently endorse the addiction conceptualization of problematic IP use, there is currently no well-established method of differentiating problematic use from nonproblematic use in regard to IP use. In addition, the DSM-IV-TR addiction criteria seem to fit well with many common conceptualizations of problematic IP use (i.e., interfering with important life aspects, a lack of ability to control use, etc.), and these criteria seemed most useful.

Standardized measures. The Pornography Consumption Effects Scale (PCES; Hald & Malamuth, 2008) is a 47-item Likert scale used to assess perceived effects of IP consumption across several life domains. The PCES has two overall effect scales, the Positive Effect Dimension (PED) and the Negative Effect Dimension (NED), which measure overall positive or negative perceived effect of pornography use. Additionally, the PCES has nine subscales, which were not utilized for the current study. Higher scores on all scales indicate a stronger perceived effect, whether positive or negative. The PED and the NED scales of the PCES have an internal consistency of $\alpha = .91$ and $\alpha = .82$, respectively. The PED and NED scales of the PCES are not significantly correlated, $r = .07$, indicating that the positive and negative scales reflect separate and distinct dimensions (Hald & Malamuth).

The Sexual Compulsivity Scale (SCS; Kalichman & Rompa, 1995, 2001) was used to assess sexual compulsivity. Participants rated how characteristic it was for them to have sexually intrusive thoughts and preoccupations. Items are rated on a 10-point Likert scale, with higher scores indicating more sexual compulsivity. The SCS has excellent internal consistency ($\alpha = .89$ for men and $\alpha = .92$ for women), and item-to-total correlations (r)

range from .48–.86 for both genders. Test-retest reliability for the SCS is at $r = .64$ (Perry, Accordino, & Hewes, 2007). High scores on the SCS are correlated with risky sexual behavior (Kalichman & Rompa, 2001).

The Impulsivity, Risk-Taking, and Sensation Seeking Scale (IRTSS; Schafer, Blanchard, & Fals-Stewart, 1994) was used to assess trait levels of impulsivity. Participants were asked to rate how well statements describing a tendency toward impulsivity described them. Items are rated on a 10-point Likert scale, with higher scores indicating higher levels of impulsivity and sensation seeking. The internal consistency of the IRTSS has been reported as $\alpha = .87$ (Schafer et al.).

The Sexual Symptom Assessment Scale (S-SAS; Raymond, Lloyd, Miner, & Kims, 2007) is a 12-item scale that assesses intensity of current sexual urges and overt recognition of the severity of problematic sexual behavior over the previous week. The scores on the S-SAS range from 0 to 96, with higher scores indicating more severe symptoms. The S-SAS has an internal consistency of $\alpha = .92$ and test-retest reliability at $r = .94$. High scores on the S-SAS are correlated with clinician severity ratings of compulsive sexual behavior and inability to control sexual impulses (Raymond et al.). Although the S-SAS could have been used to separate IP users with and without problematic usage, the overlap in items on the S-SAS that mention another variable of interest (i.e., compulsive behavior) could potentially inflate some of the relationships investigated in this study. Thus, we chose the aforementioned four single items that were similar to criteria in the DSM-IV-TR as indicators of problematic use, as they were free of overt references to the other study variables.

The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2010) is a 10-item scale used to measure experiential avoidance. Scores on the AAQ-II range from 10 to 70, with lower scores indicating a higher level of experiential avoidance. The AAQ-II has an internal consistency of $\alpha = .83$ and test-retest reliability over a three-month period at $r = .80$ (Bond et al.).

Current use of IP was measured by hours per week spent using IP. For the purposes of the current study, pornography was broadly defined as “any material where there are nude genitals, breasts, or sexual activity occurring OR the depiction of images or sexual behavior that is intended to arouse sexual excitement in its audience.”

To examine the relationships among sexual compulsivity, impulsivity, and experiential avoidance, correlations were run between these variables, and differences between problematic and nonproblematic IP users on these variables were examined via independent t tests and chi-square analyses.

Results

Means for impulsivity, compulsivity, experiential avoidance, and effects of use for participants with lifetime IP use are shown in Table 1.

Table 1
Measure Means

Measures	Mean	SD
SCS	13.4	0.5
IRTSS	2.4	0.7
AAQ-II	52.2	10.5
S-SAS	8	15.3
PED	2.5	1.3
NED	1.5	0.9

Note. SCS = Sexual Compulsivity Scale; IRTSS = Impulsivity, Risk-Taking, and Sensation Seeking Scale; AAQ-II = Acceptance and Action Questionnaire-II; S-SAS = Sexual Symptoms Assessment Scale; PED and NED = the Positive Effect Dimension and Negative Effect Dimension, respectively, of the Pornography Consumption Effects Scale.

Gender Differences

There were significant differences between males and females in hours per week of IP used, impulsivity, compulsivity, sexual symptoms, overall positive effects of IP, overall negative effects of IP, and likelihood of being classified as having problematic IP use. Men were significantly higher in hours of IP used per week ($M = 12.5$, $SD = 14.42$) than women ($M = 5.4$, $SD = 7.37$), $t(175.7) = 5.0$, $p = .00$, $d = .62$. Men were significantly higher in impulsivity ($M = 2.5$, $SD = .66$) than women ($M = 2.4$, $SD = .68$), $t(276) = 2.0$, $p = .046$, $d = .15$. Men were significantly higher in compulsivity ($M = 1.56$, $SD = .63$) than women ($M = 1.56$, $SD = .63$) $t(161.7) = 5.2$, $p = .00$, $d = .77$. Men were significantly higher in sexual symptoms ($M = 15.0$, $SD = 19.42$) than women ($M = 4.19$, $SD = 11.04$), $t(154.3) = 5.3$, $p = .000$, $d = .54$. Men were significantly higher in overall positive effects of IP use ($M = 2.99$, $SD = 1.40$) than women ($M = 2.3$, $SD = 1.19$), $t(210.9) = 4.4$, $p = .00$, $d = .54$. Men were significantly higher in overall negative effects of IP ($M = 1.9$, $SD = 1.13$) than women ($M = 1.4$, $SD = .67$), $t(163.5) = 4.7$, $p = .00$, $d = .54$. A chi-square test for independence (with Yates's continuity correction) indicated a significant association between gender and status as a problematic IP user, $\chi^2(1, n = 348) = .37$, $p = .00$, $\phi = -.37$. As mentioned previously, classification as either a problematic or nonproblematic IP user was determined through affirmative response to one or more addiction-centered criteria derived from the DSM-IV-TR. A larger percentage (66.7%) of problematic users were male than female (33.3%).

Differences by Method of Administration

Several significant differences were found between hard-copy administration and Internet administration. These differences may be a result of attempting to target problematic IP users. Those completing the questionnaires online scored significantly higher in sexual compulsivity ($M = 13.6$, $SD = 5.32$) than individuals completing the questionnaires via hard copy ($M = 11.5$, $SD = 2.17$), $t(90.64) = -2.2$, $p = .00$, $d = .52$. Those completing the questionnaires online scored significantly higher in sexual symptoms ($M = 8.5$, $SD = 15.67$) than individuals completing the questionnaires via hard copy ($M = 3.7$, $SD = 11.93$), $t(46.23) = -1.7$, $p = .04$, $d = .34$. Those completing the questionnaires online scored significantly higher in perceived positive effects of IP use ($M = 2.6$, $SD = 1.30$) than individuals completing the questionnaires via hard copy ($M = 1.9$, $SD = .92$), $t(44.06) = -3.7$, $p = .001$, $d = .70$. Those completing the questionnaires online scored significantly higher in hours per week of IP use ($M = 7.4$, $SD = 7.21$) than individuals completing the questionnaires via hard copy ($M = 2.0$, $SD = 4.26$), $t(11.08) = -3.8$, $p = .003$, $d = .91$.

Internet Pornography Use

The majority of participants reported having used IP at some point in their lifetime (70.4%; $n = 348$), of which 52.9% ($n = 184$) reported that they were currently using IP. Lifetime IP use was much more common for male participants (90.1%; $n = 137$) than female participants (61.7%; $n = 211$). Of those with a history of IP use, 78.1% of males ($n = 107$) and 36.5% of females ($n = 77$) reported that they currently use IP. Mean hours of use per week for all IP users was 7.2 ($SD = 7.2$).

Relationships Between IP Use, Experiential Avoidance, Sexual Compulsivity, and Impulsivity

Pearson's correlations were computed to examine the relationships between study variables and IP use; the results are reported in Table 2. Overall, the results showed that individuals who were more sexually compulsive tended to be more impulsive, to be more likely to use avoidant coping methods, and to experience more sexual urges. Further, those who reported more sexual compulsivity and impulsivity also tended to report both higher

negative and positive effects of IP use. Impulsivity was significantly positively correlated with sexual urges and positive and negative perceived effects of IP use. High levels of experiential avoidance were related to increases in sexual urges and more negative effects from IP use. Individuals who endorsed more sexual urges also reported more positive and negative perceived effects of IP use.

Table 2

Intercorrelations Between Sexual Compulsivity, Impulsivity, Experiential Avoidance, Sexual Interference, and Reported Positive and Negative Effects of IP Use

	1	2	3	4	5	6
SCS	--	.18**	-.36**	.70**	.41**	.59**
IRTSS		--	-.1	.22**	.17**	.15*
AAQ-II			--	-.34**	-.08	-.41**
S-SAS				--	.29**	.50**
PED					--	.34**
NED						--

Note. 1 = sexual compulsivity; 2 = impulsivity; 3 = experiential avoidance; 4 = sexual interference; 5 = reported positive effects of IP use; 6 = reported negative effects of IP use; SCS = Sexual Compulsivity Scale; IRTSS = Impulsivity, Risk-Taking, and Sensation Seeking Scale; AAQ-II = Acceptance and Action Questionnaire-II; S-SAS = Sexual Symptoms Assessment Scale; PED and NED = the Positive Effect Dimension and Negative Effect Dimension, respectively, of the Pornography Consumption Effects Scale.

* $p < .05$. ** $p < .01$.

Results, shown in Table 3, indicated that hours of IP use per week was statistically significantly related to sexual compulsivity, impulsivity, experiential avoidance, sexual urges, overall perception of positive effects of IP use, and overall perception of negative effects of IP use. The strongest of these relationships appear between hours of IP use per week, sexual compulsivity, sexual urges, and perception of both positive and negative effects of IP use. Thus, the more hours per week an individual views IP, the more they report sexual urges and problems with sexual compulsivity. Additionally, as use of IP increases, impulsivity and use of avoidant coping methods increase and individuals report both more perceived positive and negative effects of IP use.

Table 3

Zero Order Correlations with Hours of IP Use per Week

SCS	.38**
IRTSS	.22**
AAQ-II	-.19**
S-SAS	.29**
PED	.28**
NED	.24**

Note. SCS = Sexual Compulsivity Scale; IRTSS = Impulsivity, Risk-Taking, and Sensation Seeking Scale; AAQ-II = Acceptance and Action Questionnaire-II; S-SAS = Sexual Symptoms Assessment Scale; PED and NED = the Positive Effect Dimension and Negative Effect Dimension, respectively, of the Pornography Consumption Effects Scale.

* $p < .05$. ** $p < .01$.

Differences Between Problematic Users of IP and Nonproblematic Users of IP

Based on the grouping criteria for problematic IP use, 29.8% ($n = 90$) of participants were categorized as having problematic IP use. Of those with problematic IP use, 48.9% ($n = 44$) answered affirmatively to one question, 25.6% ($n = 23$) to two questions, 21.1% ($n = 19$) to three questions, and 4.4% ($n = 4$) to all four questions. Each question was answered affirmatively by problematic users with about the same frequency. Problematic

users responded “significantly” or “somewhat significantly” 57.8% of the time to “How much [does addiction] contribute to your reason for using Internet pornography?” Problematic users responded affirmatively 42.4% of the time to “I feel like my use of Internet pornography is putting my relationship(s), job, or reputation at risk.” Problematic users responded affirmatively 35.6% of the time to “I think I am addicted to Internet pornography,” and 45.6% of the time to “I have wanted to stop looking at Internet pornography and have not been able to.” Thus, no one question appeared to classify significantly more individuals with problematic IP use.

A series of independent *t* tests were conducted to examine differences between those with problematic use and those without problematic use. Results indicated that hours of IP use per week was significantly higher for those with problematic use ($M = 10.0, SD = 8.0$) than those with nonproblematic use ($M = 5.6, SD = 6.4$). Further, results (shown in Table 4) indicated that those who used IP more frequently were more likely to report that their use was problematic, $t(116.1) = -4.1, p < .001, d = .60$. Those with problematic IP use also scored significantly higher in sexual compulsivity, $t(84.0) = -6.7, p < .001, d = 1.03$, experiential avoidance, $t(266) = 3.8, p < .001, d = .50$, and sexual urges, $t(82.4) = -19.3, p < .001, d = 1.22$. Additionally, individuals reporting problematic IP use reported significantly more negative effects, $t(86.9) = -7.5, p < .001, d = 1.15$, and positive effects, $t(274) = -4.8, p < .001, d = .63$, from IP. There were no significant differences found between problematic and nonproblematic groups in impulsivity. Further analysis examining differences between nonusers and users of IP also did not indicate significant differences in impulsivity, $t(410) = 1.0, p = .32$.

Table 4
Mean Scores for Problematic and Nonproblematic Use of IP

Measures	Nonproblematic IP use ($n = 212$)	Problematic IP use ($n = 90$)	<i>t</i>	<i>d</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
Hours of IP use per week	5.6 (6.4)	10.0 (8.0)	-4.1**	.60
Sexual compulsivity (SCS)	11.8 (2.5)	17.4 (7.3)	-6.7***	1.03
Impulsivity (IRTSS)	2.4 (0.7)	2.5 (0.7)	-1.5	.20
Sexual interference (S-SAS)	2.7 (7.4)	22.1 (21.1)	-7.8***	1.22
Experiential avoidance (AAQ-II)	53.6 (10.1)	48.4 (10.7)	3.8***	.50
Positive Effect Dimension (PED)	2.3 (1.2)	3.1 (1.3)	-4.8***	.63
Negative Effect Dimension (NED)	1.2 (0.5)	2.3 (1.2)	-7.5***	1.15

Note. SCS = Sexual Compulsivity Scale; IRTSS = Impulsivity, Risk-Taking, and Sensation Seeking Scale; AAQ-II = Acceptance and Action Questionnaire-II; S-SAS = Sexual Symptoms Assessment Scale; PED and NED = the Positive Effect Dimension and Negative Effect Dimension, respectively, of the Pornography Consumption Effects Scale.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The current study explored the relationships between Internet pornography use, sexual compulsivity, impulsivity, experiential avoidance, sexual urges, and the effects of IP in a combined sample of college students and community participants. Data suggested that most individuals in the study had used IP at some point in their life, and a significant proportion of those individuals continued to use IP. Internet pornography users averaged in excess of five hours per week on IP, and almost a third of the individuals reported their use as problematic.

An examination of the hours of IP use per week revealed several findings. First, frequency of use differentiated those who rated their use as problematic or nonproblematic. Consistent with previous research (Philaretou et al., 2005), those who rated their use as problematic used IP with a much greater frequency than those whose use was not problematic. Despite these findings, the current study utilized a convenience-sampling method to

reach IP users and thus data cannot be said to generalize to the wider population. Therefore, these results should not be interpreted to represent the overall prevalence of IP use, problematic or nonproblematic, and should not be used to establish cutoffs points for problematic use in the wider population. The current study focused on problematic IP use and relationships of variables that may influence its use, as well as differences between problematic and nonproblematic users. Interpretations and generalizations made from this data are then necessarily limited to these purposes.

Data indicated that hours of IP use per week was related to both impulsivity and compulsivity. This is consistent with previous research (Davis et al., 2002; Shapira et al., 2000) and with the Mick and Hollander (2006) model of sexual compulsivity, which proposes sexual compulsivity to be related to impulsivity and compulsivity. According to this model, impulsively acting out on sexual urges may initiate a cycle of urges to engage in sexual behavior.

The number of hours per week of IP use was also found to be related to the use of avoidance coping methods or experiential avoidance. This, taken together with the relationship of hours of IP use to impulsivity and compulsivity, is consistent with previous research indicating that experiential avoidance may maintain and/or exacerbate compulsive (Hayes et al., 1996; Twohig et al., 2010), impulsive (Begotka et al., 2004; Flessner et al., 2008), and addictive behaviors (Hayes et al., 2004; Stotts et al., 2009; Wilson et al., 2005). For example, thought suppression, which has been labeled as a form of experiential avoidance (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), produces a paradoxical increase in suppressed thoughts (Wegner, Schneider, Carter, & White, 1987); thus, attempts to avoid sexual thoughts may increase the frequency of those thoughts. Alternatively, a second possibility may be that individuals who utilize avoidant coping strategies are not avoiding sexual thoughts but are simply using IP to avoid other unpleasant thoughts or emotions.

Frequency of IP use was positively related to more positive and negative effects from its use. This is consistent with a reinforcement model, suggesting that both positive and negative reinforcement are likely to maintain the behavior. The use of IP may provide both psychological and physiological reinforcement (e.g., sexual arousal and/or sexual gratification) at a high schedule of reinforcement, thus encouraging maintenance of IP use. Additionally, IP use may be maintained through negative reinforcement as a method of distraction from unpleasant internal events (e.g., boredom, loneliness, etc.). IP use may then be reinforced through several avenues. This, coupled with its ease of availability, make it particularly likely to become problematic. How much these various forms of reinforcement typically influence problematic use remains unclear. That is, it is unclear whether it is the positive or negative reinforcement aspect that has the greatest impact on the frequency and effects of use. Future research can add to the utility of these findings by identifying the reasons that individuals engage in IP use (e.g., for arousal, to distract, to connect with others) and examining the relationships between the frequency of use, effects of use, and reasons for use. Because problematic IP use is associated with both more positive and more negative effects, clinicians should address the possibility that many users may not be motivated to reduce their use of IP.

A comparison of individuals with problematic and nonproblematic IP use indicated that the groups also are significantly different on levels of experiential avoidance. These results support the findings of Twohig et al. (2009), who found that experiential avoidance is not related to IP use. However, the findings of the current study seem to clarify that it is not the amount of IP use itself that is related to experiential avoidance but the nature of that use. Specifically, experiential avoidance is related to stress associated with problematic IP use but not to IP use in general. The findings of the current study also seem to support previous findings of relationships between experiential avoidance and compulsive, impulsive, and addictive behaviors. Together, these findings are in line with the idea that use of IP may evolve from the initially impulsive use of IP for pleasure. In problematic users this use may become compulsive, possibly due to experiential avoidance, the paradoxical effects of avoidance, and/or reinforcement obtained through avoidance of negative

emotions and engagement in sexual behavior. It may be that when individuals come in contact with opportunities for sexual gratification by chance on the Internet (i.e., pop-up windows, searches that pull up IP), they may impulsively engage in IP use. Then, through repeated use, an individual may come to use IP not only for positive reinforcement (i.e., sexual gratification) but also for negative reinforcement (i.e., to avoid negative thoughts or emotions). Additionally, individuals who use IP and have negative emotions/thoughts regarding their use (i.e., conflicting moral beliefs, etc.) may attempt to avoid thoughts about IP use and paradoxically increase those thoughts (Wegner, Schneider, Carter, & White, 1987). Taking into account these issues, therapeutic approaches targeting experiential avoidance may be useful in the treatment of problematic IP use.

Recent research has also supported the role of experiential avoidance in IP use. Twohig and Crosby (2010) found that treatment of problematic IP use with acceptance and commitment therapy (ACT), which specifically targets experiential avoidance, significantly reduced experiential avoidance and IP viewing time, decreased associated distress, and improved quality of life. In this study, Twohig and Crosby treated six male clients identified as problematic IP users with eight sessions of ACT in a treatment study with a multiple-baseline-across-participants design. Participants in this study obtained an 85% decrease in their viewing time at posttreatment assessment and maintained an 83% decrease at three-month follow-up. More importantly, however, responders made gains in quality of life, which were maintained at three-month follow-up. Reductions in use and increases in quality of life obtained by participants in this study were also tied to changes in the process variable, experiential avoidance. Thus, treatment of problematic IP use may be tailored toward dealing with processes such as experiential avoidance.

Similar to the frequency findings, individuals with problematic IP use in the current study reported significantly higher amounts of negative and positive effects of pornography consumption. Thus, although they experience more negative effects, problematic IP users continue to engage in the behavior. The results from this study and previously discussed findings regarding compulsivity, impulsivity, and IP use, as well as the likelihood of problematic IP use being influenced by regulation of internal experience, seem to support the conceptualization of problematic IP use as an addictive problem. This is in line with conceptualizations of problematic IP use involving cycles of impulsive and compulsive behavior (Mick & Hollander, 2006) and behavioral addiction (Putnam, 2000; Griffiths, 2001). Others have, however, argued that IP use is more related to impulsivity (Shapira et al., 2003) or other factors such as sensation seeking (Weisskirch & Murphy, 2004) and intimacy or relational difficulties (Stack, Wasserman, & Kern, 2004; Salisbury, 2008). Like substance abusers, problematic IP users who experience negative outcomes may continue to use IP due to the positive reinforcement (i.e., sexual gratification or perceived enhancement of relationships) they receive from its use. Therefore, treatment formulations for problematic IP use will benefit from addressing positive reinforcement and how it may maintain problematic behavior. An addiction conceptualization of problematic use may also indicate that these individuals are less able to self-identify their use as problematic or seek treatment because they continue to receive benefits from their use even when it is problematic. Additionally, as the questions used in this study to classify IP users as problematic users did not overlap significantly in content with each other, it is likely that some individuals whose use would be considered problematic would admit that they have problems with sexual control but deny sexual "addiction." Thus, when assessing problematic IP use, clinicians may focus on negative life outcomes related to its use, rather than relying solely on the report of perceived positive and negative effects.

Consistent with previous research (Davis et al., 2002), impulsivity did appear to have a significant role in the amount of IP use in general. IP users and nonusers, however, did not differ on levels of impulsivity. In the current study, impulsivity did not appear to be an important factor differentiating IP users from problematic users or IP users from nonusers (see Table 4). This would seem to support the Mick and Hollander (2006) model of the

relationship between impulsivity and compulsivity. As impulsivity was related to IP use overall but did not differentiate between problematic and nonproblematic IP use, this suggests that impulsivity may increase the likelihood that individuals engage in IP use when presented with the opportunity or, alternatively, that IP use may somehow cause individuals to be more impulsive. These findings may, however, be related to the fact that the IRTSS looks at impulsivity in general and not sexual impulsivity specifically. Therefore, future reporting on the influence of impulsivity on IP use should include measures that focus more directly on sexual impulsivity.

Finally, limitations of the current study should be recognized. First, the use of a convenience sample of Internet participants may limit the generalizability of study findings. However, the current study should be considered an exploration of factors involved in problematic IP use and findings should not be generalized to other populations. It is possible, due to the sexual nature of the study, that individuals who are more comfortable disclosing information about sexual material may have self-selected to participate in the study (Weiderman, 1999). This necessarily limits the generalizability of the findings. However, the current study sought to examine differences between problematic and nonproblematic use, rather than solely examining prevalence rates of use; therefore, the inclusion of Internet recruitment may have enhanced the clinical utility of the findings.

Beyond this, the current study provides some preliminary evidence as to the relationships between impulsivity, compulsivity, sexually compulsive behavior, and problematic IP use; however, much remains unclear about the processes that may impact the inception, maintenance, and treatment of problematic IP use and whether these processes are similar for each gender. Future studies may need to examine the function of the IP use to determine whether sexual gratification or another function of IP use (i.e., perceived enhancement of relationships, educational purposes, entertainment, etc.) is associated with problematic sexual behaviors. Despite these limitations, the current study provides useful information that contributes toward understanding problematic IP use and IP use in general, as well as factors that may impact the treatment of problematic IP use.

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Appendix

Questions for Participants on IP Use

History of IP Use

History of IP use was obtained through the following questions:

Have you EVER used/viewed Internet pornography? (yes or no)

Do you CURRENTLY use/view Internet pornography? (yes or no)

How much time on average do you spend on Internet pornography?

(Answer one) _____ per day, _____ per week, _____ per month

Problematic Use

Problematic use was defined by an affirmative answer to at least one of the following:

How much [does addiction] contribute to your reason for using Internet pornography

(not at all, somewhat significantly, significantly)

I feel like my use of Internet pornography is putting my relationship(s), job, or reputation at risk.

(strongly disagree, slightly disagree, neutral, slightly agree, or strongly agree)

I think I am addicted to Internet pornography.

(strongly disagree, slightly disagree, neutral, slightly agree, or strongly agree)

I have wanted to stop looking at Internet pornography and have not been able to.

(strongly disagree, slightly disagree, neutral, slightly agree, or strongly agree)

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