Perceptions of relationship satisfaction and addictive behavior: Comparing pornography and marijuana use

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Background and aims: Research indicates that excessive pornography use can negatively impact romantic relationships. However, it is unclear whether these negative outcomes are different than negative outcomes produced by other compulsive or addictive behaviors, such as drug use. This study compared perceptions of relationship outcomes from either a romantic partner's excessive marijuana or pornography use. Furthermore, this study experimentally manipulated four factors potentially related to perceptions of relationship satisfaction and addictive behavior. *Methods:* A total of 186 college-aged women read 16 scenarios describing heterosexual romantic relationships in which one partner used either pornography or marijuana. Each scenario varied on four variables: relationship commitment, secrecy of partner's behavior, frequency of partner's behavior, and context of partner's behavior. *Results:* Results suggest that partner pornography and marijuana use are perceived to impact romantic relationships similarly and are influenced by similar factors, such as greater frequency, higher secrecy, and partner's availability for interaction. *Conclusions:* Such findings are consistent with recommendations by professionals that compulsive pornography use be considered worthy of treatment intervention.

Keywords: pornography, marijuana, relationship satisfaction, sexually explicit material

The word "addiction" is used to refer to a compulsive, uncontrolled use of a habit-forming substance that is characterized by tolerance and withdrawal symptoms (Merriam-Webster Online Dictionary, 2010). Drugs and alcohol are often perceived as the substances involved in addictive behaviors; however, increasingly, researchers suggest that addictive behaviors extend beyond psychoactive substances to impulse control disorders that include gambling, playing computer games, and sexual activities (Brown, 1993; Fisher, 1994; Griffiths, 1996; Kafka, 2010; Martin & Petry, 2005; Potenza, 2006).

Researchers have stated that there are psychological commonalities between addictions that do and do not involve ingestion of a psychoactive substance (Brewer & Potenza, 2008; Griffiths, 1996; Martin & Petry, 2005; Potenza, 2006). Specific neuronal circuits and neurotransmitters are impacted in both impulse control disorders and substance abuse disorders (Brewer & Potenza, 2008; Potenza, 2006). In both cases, a substance or activity can serve as a reinforcer by either increasing personal pleasure or avoiding negative stimuli. Furthermore, researchers argue that both types of addictions can include symptoms of tolerance, dependence, and withdrawal. Certain internal states, such as elevated arousal, stress, and pain, can influence the frequency of engaging in the addictive behavior (Griffiths, 1996).

Many psychological disorders can be considered disorders of addiction. The most recent version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) includes a variety of substance-related disorders, including abuse and dependency of alcohol, amphetamines, hallucinogens, opioids, sedatives, and anxiolytics (APA, 2000). The DSM-IV also includes pathological gambling (or "gambling addiction"), an impulse-control disorder in which individuals fail to resist gambling to the point that it leads to a distur-

bance in major life pursuits (APA, 2000). Draft documents for the fifth edition of the DSM reveal that hypersexual disorder, a sexual desire disorder with an impulsivity component and no accompanying paraphilic behavior ("sex addiction"), is being considered for inclusion in the DSM-V (Kafka, 2010). One subset of this proposed disorder specifies that the disordered behavior is associated with excessive pornography use ("pornography addiction").

Addictive behaviors impact not only individuals, but also important personal relationships. Interpersonal conflicts often occur between a person with an addictive disorder and her social network (Brown, 1993). The very definitions of substance dependence and abuse include interpersonal considerations. The DSM-IV-TR states that dependence on a substance often interferes with family, school, work, or recreational activities. Similarly, abuse of a substance often interferes with one's performance at work or school, contributes to legal problems, or may contribute to problems with one's family or spouse (APA, 2000). Those exhibiting impulse control disorders often lie to individuals to conceal the extent of involvement in a particular activity. Furthermore, those with impulse control disorders may jeopardize or lose a significant relationship, job, or vocational opportunity. In terms of hypersexual disorder specifically, individuals often engage in sexual behaviors for an excessive amount of time while disregarding the risk for physical or emotional harm to self or others (APA, 2010). Consequences of an addict's behavior may be particularly impactful for romantic partners. Physical and emotional harm

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to romantic partners may include the transmission of a sexual disease, a betrayal of trust, diminished sexual satisfaction and intimacy, a decrease in relationship satisfaction, or a rupture in a romantic relationship.

There is certainly controversy in the scientific literature about whether gambling, pornography use, and other behaviors can be considered addictions (Brown, 1993; Griffiths, 1996; Griffiths, 2000; Martin & Petry, 2005; Schneider, 1994). Researchers have indicated that providers have difficulty consistently differentiating between behavioral addictions and deviant behavior (Fong, Reid & Parhami, 2012). Those who argue against their inclusion as addictive disorders often point to the lack of physiological dependence and withdrawal symptoms that are the hallmark of addictive psychoactive substances (Robertson, 1990). Those who argue that many behaviors may fall under the umbrella of addictions point to the psychological antecedents, covariates, and consequences of addictive substances (Goodman, 1992; Martin & Petry, 2005; Schneider, 1994; Shaffer et al., 2004). For instance, Young and Rogers (1998) argue that people with compulsive sexual behavior, like people with other psychoactive substance use disorders, tend to have comorbid depression or anxiety. Similarly, Schneider (1994) explains that feelings that lead to cravings for compulsive sexual behavior mimic those that lead to cravings for alcohol or other substances. Finally, as we review below, some researchers argue that the consequences of addictive behaviors of all kinds are similar and negative.

We seek to expand the debate about the addictive nature of sexual behaviors by exploring their perceived consequences. The question under consideration in the current study was how two different forms of addiction are perceived to affect romantic relationships. In particular, this study assessed if relationship satisfaction was thought to differ when a romantic partner was described as using either pornography or marijuana to excess.

Previous research has indicated that excessive pornography use is associated with decreased relationship satisfaction (Bergner & Bridges, 2002; Bridges, Bergner & Hesson-McInnis, 2003; Manning, 2006). Bergner and Bridges (2002) examined 100 help-seeking letters written by women who reported feelings of distress associated with a romantic partner's pornography viewing. The authors identified fifteen themes that frequently occurred in the letters. Furthermore, they found that the discovery of a partner's pornography use negatively impacted how women viewed their romantic relationships. Bridges et al. (2003) further assessed how a partner's pornography use impacted women in committed relationships. A total of 100 women were recruited via internet message boards and these women completed the Pornography Distress Scale (PDS) (Bridges et al., 2003). Bridges et al. discovered that approximately one third of the sample reported extremely negative feelings associated with a partner's pornography use. Excessive pornography use by one partner in a romantic relationship may be perceived as a threat to the stability of long term relationships and marriages (Bergner & Bridges, 2002; Featherstone, 2005; Parker & Wampler, 2003; Schneider, 2000). Women indicate that finding a partner's pornographic materials can be particularly distressing and unsettling (Bridges et al., 2003; Steffens & Rennie, 2006). Some research suggests that, for a sizeable minority of women, high pornography use by a male partner is as distressing and destabilizing to the relationship as an actual affair (Bridges et al., 2003; Schneider, 2000).

The use of pornography within a romantic relationship has been associated with numerous negative effects on marital relationships (Manning, 2006). Frequent pornography use may be incompatible with characteristic of healthy romantic relationships and is related to decreased satisfaction in romantic relationships. In a study by Zillman and Bryant (1988), college students and a non-student population were repeatedly exposed to either pornographic films or neutral films for one hour per week over a six-week period. On the seventh week, participants in the pornography condition reported significantly lower satisfaction with their real life romantic partner's sexual performance and physical appearance compared to participants who were exposed to neutral films. Zillman and Bryant found that these results were consistently similar for men and women as well as student and community samples. Furthermore, Stack, Waserman and Kern (2004) assessed data from the General Social Survey (Davis, 2001) for the year 2000. A US national survey using random digit dial was utilized in the General Social Survey and a total of 531 respondents were included in the analyses. Results indicated that people who report being happy in their romantic relationship are 61% less likely to view pornography than those who are either single or are in an unhappy relationship. This same study found that individuals who viewed an X-rated movie in the previous month were more likely to be involved in an extramarital affair than those who did not see an adult movie.

Hypersexual behavior that is exhibited by one partner within a romantic relationship is associated with several negative outcomes in terms of quality of romantic relationships. Women who are in romantic relationships with hypersexual men have reported experiencing significantly more marital distress compared to women in relationships with non-hypersexual men (Reid, Carpenter & Draper, 2011; Reid, Carpenter, Draper & Manning, 2010). Steffens and Rennie (2006) found that a majority of women construed disclosing their husband's sexually compulsive behavior to others as a traumatic event. In addition, approximately 70% of women in this study met all but criteria A1 for post-traumatic stress disorder, and 50% of the sample exhibited moderate to severe symptoms. Taking this into account, a majority of women in this study endorsed feelings of terror or helplessness during the act of disclosing their husband's sexually compulsive behavior to others.

Research has also shown that drug abuse by one individual in a romantic relationship leads to decreased dyadic adjustment and relationship stability. In a study of 642 couples in their first year of marriage, Mudar, Leonard and Soltysinski (2001) assessed how heavy alcohol consumption and drug use impacted marital satisfaction. The authors defined heavy alcohol consumption as drinking 14 or more drinks per week for men and 10 or more drinks per week for women. Drug use was defined as the use of marijuana at least 2–3 times a month or the use of any of the other five drug classes (sedatives or tranquilizers, cocaine or crack, stimulants, heroin or methadone, and hallucinogens) once a month or more. Results revealed that couples in which one partner heavily drank or used drugs reported significantly lower marital satisfaction compared to couples where neither partner engaged in these behaviors. In contrast, increased length of abstinence in a drug abusing partner is positively associated with increased relationship satisfaction and relationship stability (Falls-Stewart, Birchler & O'Farrell, 1999). Newcomb (1994) found that couples where one partner used marijuana reported significantly

lower relationship satisfaction and lower perceived partner support than couples where one partner used another substance, such as alcohol, nicotine, and even cocaine. Newcomb also revealed that prior use of marijuana is associated with lower current dyadic warmth and agreement in a romantic relationship.

Although research studies point to the potentially detrimental impact that both pornography and marijuana use have on romantic relationships, and while some studies have compared relationship outcomes across different forms of psychoactive substances (e.g., Newcomb, 1994), to date no study has compared how different "addictive" behaviors impact relationships. This is an important question for two reasons. First, comparing consequences of addictive-like behaviors can help elucidate and inform our understanding of the nature of addictions. Second, there are reasons to suspect that some behaviors may have more detrimental impacts in personal relationships than others. For instance, pornography addiction may be more detrimental to a partner than a psychoactive substance addiction. In the former case, the non-using partner may feel that they can and should be the source of their partner's sexual satisfaction rather than pornography filling that role (Bridges et al., 2003). In the latter case, the non-using partner may be less likely to believe that they can and should be the source of the "high" a person may get from ingesting a psychoactive substance.

Prior research has found that factors such as frequency, context, and secrecy of pornography use, as well as relationship commitment, influence how a romantic partner's pornography use impacts relationships. When a romantic partner views pornography frequently, this behavior is often seen as addictive and as something that may even constitute hypersexual disorder (Långström & Hanson, 2006). Moll, McGahan and Bridges (2009) found that female participants perceive relationship satisfaction as lower for women who are described as being with a partner who views pornography for 10–12 hours per week compared to women who are described as being with a partner who views pornography for 1–2 hours per week. In a similar fashion, participants perceive relationship satisfaction to be lower in relationships in which a male partner views pornography when a romantic partner is in town and available for sexual relations rather that when she is out of town. In the study by Bridges et al., relationship satisfaction was lowest when romantic partners viewed pornography frequently while their partner was in town and available for sexual relations. This study seeks to assess how these factors are perceived to influence a romantic partner's marijuana use as well. Finally, Bridges et al. (2003) suggest that higher levels of commitment (e.g., being married to a partner rather than just casually dating) are associated with greater distress over a romantic partner's pornography use. However, whether and how these factors impact romantic relationships when the substance is a drug, such as marijuana, is unknown.

Purpose

Within the literature, it is unclear whether negative outcomes due to a romantic partner's excessive pornography use are different than negative outcomes produced by other compulsive or addictive behaviors, such as drug use. This study assessed if a romantic partner's excessive pornography use resulted in similar perceptions of relationship outcomes as a romantic partner's excessive marijuana use. Furthermore, this study assessed four factors that may be influential in predicting perceptions of relationship satisfaction and addictive behavior: relationship commitment, secrecy of substance use, frequency of substance use, and context of substance use.

Hypotheses

The following hypotheses and research questions were addressed. The first hypothesis relates to perceptions of relationship satisfaction, the second compares pornography use to marijuana use, and the first research question explores the possible interaction between contextual factors and substance type on perceptions of relationship satisfaction. Our second research question asks what factors impact ratings of perceived addictiveness of the substance. We additional asked a third research question regarding whether any demographic variables moderated responses.

Hypothesis 1

All four contextual variables exert significant influences on perceptions of relationship satisfaction (collapsed across conditions). Specifically we hypothesize that:
a) People described as being in more formally committed relationships will be perceived as being more satisfied with their relationship than people described as being less committed.
b) People described as being in a relationship with a partner who secretly uses substances will be perceived as being less satisfied with their relationship than people who are described as being in a relationship with someone who is open and honest about their substance use.
c) People described as being in a relationship with a partner who frequently uses substances will be perceived as being less satisfied with their relationship than people who are described as being in a relationship with a partner who rarely uses substances.
d) People described as being in a relationship with a partner who uses substances in the presence of a significant other will be perceived as being less satisfied with their relationship than people who are described as being in a relationship with a partner who does not use substances in the presence of a significant other.

Hypothesis 2

Because women may perceive a male partner's excessive pornography use as being more reflective of problems with her or the relationship (Featherstone, 2005) compared to marijuana use, it is hypothesized that excessive pornography use will be perceived as more detrimental to relationship satisfaction than excessive marijuana use.

Research question 1

Do contextual variables (relationship commitment, secrecy, frequency of use, and context) differentially impact ratings of relationship satisfaction for pornography versus marijuana use?

Research question 2

How do these four variables (relationship commitment, secrecy, frequency of use, and context of use) impact perceptions of addiction? Research has shown that an increase in

frequency of use has been associated with an increase in perceptions of addiction, yet the other factors are ambiguous in terms of how they may impact perceptions of addiction.

Research question 3

Are there variables that moderate these relations? Specifically, are perceptions of relationship satisfaction and addiction moderated by (a) participants' own behaviors (having viewed pornography or smoked marijuana), (b) participants' romantic partners' behaviors (having had a romantic partner who viewed pornography or smoked marijuana), and (c) participants' relationship status?

METHOD

Participants

Participants were 186 undergraduate women, age 18 and older, enrolled in introductory psychology courses at a large, mid-southern state university. Since this study focused on perceptions of heterosexual relationships, three individuals who identified as homosexual were excluded. A remaining 15 participants demonstrated inconsistent responding and were also excluded. The final sample therefore consisted of 168 self-identified heterosexual female participants.

The mean age of participants was 19.04 years ($SD = 1.94$). A total of 53.6% of participants were freshmen, 32.7% were sophomores, 10.7% were juniors, 2.4% were seniors, and 0.6% were in their fifth year or more of college. A majority of participants (88.7%) were Caucasian. Other ethnicities included Black/African American (5.4%), Hispanic/Latina (2.4%), American Indian (1.8%), Asian (0.6%), and other ethnicity (1.2%) (Table 1). In terms of relationship status, 46.4% of participants were single, 19.6% were dating, and 31.5% were in a long-term relationship. Only 1.2% of participants were cohabiting with a romantic partner and 1.2% were married (Table 1).

Table 1. Participant demographics

	M (SD) or N (%)
Age	19.04 (1.94)
Ethnicity	
Caucasian	149 (88.7%)
African American	9 (5.4%)
Latino/a	4 (2.4%)
Native American	3 (1.8%)
Asian	1 (0.6%)
Other ethnicity	2 (1.2%)
Relationship status	
Single	78 (46.4%)
Long-term dating	53 (31.5%)
Short-term dating	33 (19.6%)
Cohabiting	2 (1.2%)
Married	2 (1.2%)
Pornography use	
Participant has viewed pornography	50 (31.1%)
Previous relationship with pornography user	79 (48.5%)
Marijuana use	
Participant has smoked marijuana	58 (34.5%)
Previous relationship with marijuana user	82 (48.8%)

Procedures

Experimental sessions were run via an online survey format. Informed consent took place online prior to participation in this study. Participants completed a demographics questionnaire and a judgment task described in greater detail below. Once they finished the entire survey, participants were presented with debriefing information on the computer, thanked for their time, and assigned partial course credit for participation.

Materials and variables

The experimental stimuli consisted of 16 scenarios comprising a judgment task (Appendix). Scenarios were randomly ordered for each participant. Names, colleges, and hobbies in the scenarios were varied to maintain interest.

The study employed one between-subjects dichotomous independent variable (marijuana use or pornography use) and four within-subjects dichotomous independent variables (relationship commitment, secrecy of partner's addictive behavior, frequency of partner addictive behavior, and context of partner's addictive behavior). Relationship commitment was either low (dating) or high (married). Secrecy was either low (male partner was open and honest about his use) or high (partner lied about his use). Frequency of use was either low (once every few weeks) or high (daily), and the context of the male character's use was either benign (female partner was out of town during the use) or malignant (partner was in town during the use).

The study assessed two continuous dependent variables following each of the 16 scenarios. The first question asked how the woman's satisfaction with her relationship might be affected by her partner's behavior. Participants answered this question on a scale ranging from (1) increase significantly to (9) decrease significantly. The second question asked what the woman might think about how normal her partner's frequency of engaging in the behavior is. Participants answered this question on a scale ranging from (1) unusually low frequency to (9) unusually high frequency (i.e., addicted).

RESULTS

Results focused on examining how two potentially addictive behaviors (a male partner's pornography or marijuana use) affect women's perceptions of relationship satisfaction and perceptions of partner addiction. Prior to testing hypotheses, we calculated two multiple regressions per participant to analyze the associations between perceptions of (a) relationship satisfaction and (b) addictiveness (the dependent variables) across the 16 scenarios. Each regression yielded a beta weight for each contextual independent variable (four total: relationship commitment, secrecy, frequency of use, and context of use). Beta weights were used as dependent variables in the analyses that follow. Examination of skewness and kurtosis values as well as histograms revealed normally distributed beta weights.

Perceptions of relationship satisfaction

One sample *t*-tests were conducted to examine if the average beta weights (see Table 2 for average beta weights) for each of the four independent variables were significantly differ-

Table 2. Average beta weights for the contextual factors by condition

Condition	Relationship satisfaction Mean β (SD)	Perceptions of addiction Mean β (SD)
Combined		
Commitment	.16 (.25)	.11 (.22)
Secrecy	.39 (.29)	.16 (.32)
Frequency of use	.27 (.31)	.42 (.34)
Context of use	.19 (.26)	.19 (.29)
Pornography condition		
Commitment	.19 (.27)	.14 (.24)
Secrecy	.29 (.27)	.16 (.26)
Frequency of use	.30 (.31)	.47 (.32)
Context of use	.21 (.25)	.19 (.27)
Marijuana condition		
Commitment	.14 (.23)	.08 (.20)
Secrecy	.48 (.29)	.16 (.37)
Frequency of use	.24 (.31)	.37 (.35)
Context of use	.17 (.27)	.18 (.30)

Figure 1. Relationship satisfaction as a function of contextual variables and substance type

ent from zero. Beta weights which are significantly different from zero would be indicative of a variable that contributed to responses on the dependent variable.

In terms of predicting perceptions of relationship satisfaction, all four characteristics produced significant main effects. Secrecy [beta weight $M = .39$, $SD = .29$, $t(166) = 17.25$], frequency of use [beta weight $M = .27$, $SD = .31$, $t(165) = 11.34$], context of use [beta weight $M = .19$, $SD = .26$, $t(167) = 9.54$], and relationship commitment [beta weight $M = .16$, $SD = .25$, $t(167) = 8.36$] were all statistically significant predictors at $p < .001$. Because all beta weights were positive, results suggest higher commitment, higher frequency of use, greater secrecy about use, and using when the partner was around were associated with *lower* relationship satisfaction (satisfaction was coded such that higher scores indicated greater dissatisfaction). Therefore, our hypothesis 1a was not supported (people in committed relationships were not seen as more satisfied than those in more casual relationships), but hypotheses 1b, 1c, and 1d were supported.

Pornography use compared to marijuana use

To test the second hypothesis, a two-way mixed analysis of variance was conducted to assess the impact of the two different conditions (pornography and marijuana use) and the four contextual variables of interest (commitment, secrecy, frequency of use, and location) on perceptions of relationship satisfaction. There was a significant variable by condition interaction, Wilks' Lambda = .892, $F(3, 162) = 6.51$, $p < .001$, partial eta squared = .108. There was also a significant main effect of contextual variables, Wilks' Lambda = .753, $F(3, 162) = 17.74$, $p < .001$, partial eta squared = .247 (Figure 1). However, the between-subjects variable was not significant, $F(1, 164) = 0.21$, $p = .648$, partial eta squared = .001; therefore, our second hypothesis was not supported.

Contextual variables and relationship satisfaction

Four follow up independent samples *t*-tests (one per contextual variable) were completed to compare the beta weights for perceptions of relationship satisfaction in the two between-subjects conditions. There was no significant difference between the pornography ($M = .19$, $SD = .27$) and mari-
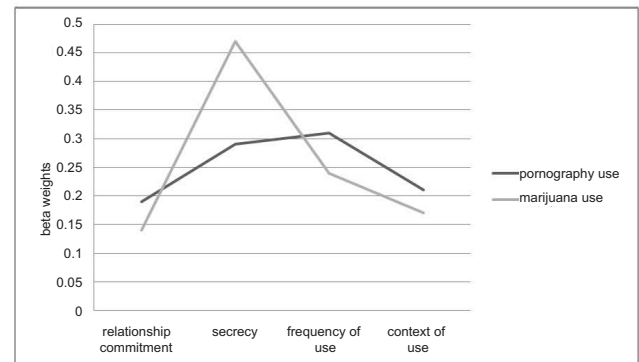
juana ($M = .14$, $SD = .23$) conditions for the relationship commitment variable, $t(166) = 1.24$, $p = .217$. In contrast, there was a significant difference between the pornography ($M = .29$, $SD = .27$) and marijuana ($M = .48$, $SD = .29$) conditions for the secrecy variable, $t(165) = -4.40$, $p < .001$. Secrecy played a more influential role in the marijuana condition compared to the pornography condition. The frequency of use (pornography $M = .30$, $SD = .31$; marijuana $M = .24$, $SD = .31$) did not differentially impact ratings of relationship satisfaction, $t(164) = 1.21$, $p = .226$. Similarly, the context of use (pornography $M = .21$, $SD = .25$; marijuana $M = .17$, $SD = .27$) did not relate differently to relationship satisfaction ratings, $t(166) = 0.96$, $p = .338$.

Perceptions of addiction

To answer the second research question, one sample *t*-tests were conducted to examine if the average beta weights for each of the four independent variables were significantly different from zero. In terms of predicting perceptions of addiction, all four characteristics produced significant main effects in same direction that was hypothesized for perceptions of relationship satisfaction. Frequency of use (beta weight $M = .42$, $SD = .34$, $t(165) = 15.86$), context of use (beta weight $M = .19$, $SD = .29$, $t(163) = 8.33$), secrecy (beta weight $M = .16$, $SD = .32$, $t(166) = 6.41$), and relationship commitment (beta weight $M = .11$, $SD = .22$, $t(167) = 6.68$), were all statistically significant predictors at $p < .001$. Because all beta weights were positive, results suggest higher commitment, higher frequency of use, greater secrecy about use, and using when the partner was around were associated with higher perceptions of addictiveness.

To further explore the research question, a two-way mixed analysis of variance was conducted to assess the impact of the two different conditions (pornography and marijuana use) and the four contextual variables of interest (commitment, frequency of use, secrecy, and context) on perceptions of addiction. To correct for inequality of variances, the Greenhouse-Geisser statistic was used. There was no significant interaction, Greenhouse-Geisser = 0.22, $F(3, 480) = .849$, $p = .467$, partial eta squared = .005. However, there was a significant main effect of contextual variable, Greenhouse-Geisser = 8.92, $F(3, 480) = 35.09$, $p < .001$, partial eta squared = .180 (Figure 2). Finally, there was a marginally significant effect of condition on perceptions of addiction, $F(1, 160) = 3.28$, $p = .072$. As a whole, contextual variables influenced perceptions of addiction more so in the pornography ($M = .24$, $SD = .02$) than in the marijuana ($M = .20$, $SD = .01$) condition.
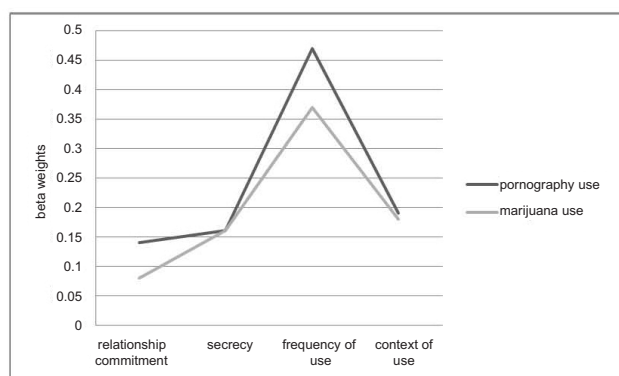
Figure 2. Perceptions of addiction as a function of contextual variables and substance type

Pairwise comparisons to follow up the significant main effect of context revealed the frequency of use ($M = .42$, $SD = .34$) was significantly higher than all other contextual factors, suggesting this played the strongest role in determining ratings of addictiveness. The context of use beta weight ($M = .19$, $SD = .27$) was significantly greater than the relationship commitment beta weight ($M = .11$, $SD = .20$). Finally, secrecy ($M = .16$, $SD = .33$) influenced ratings of addictiveness significantly more so than did relationship commitment.

Potential moderating variables

We explored whether participants' own use of pornography and marijuana moderated their perceptions of relationship satisfaction. A three-way mixed analysis of variance was conducted to see how condition (marijuana or pornography), participants' own use of the substance portrayed in their condition (does or does not report engaging in the behavior), and contextual variables (relationship commitment, secrecy, frequency of use, and context) related to perceptions of relationship satisfaction. The two-way interactions between participants' own use and contextual variables or condition and the three-way interaction between participants' own use, condition, and contextual variables were not significant (all *p* values > .10). Therefore, we found no evidence that responses were moderated by participants' own engagement in that behavior.

Next, we explored whether having been in a relationship with someone who used the substance (marijuana or pornography) moderated participants' perceptions of relationship satisfaction. A three-way mixed analysis of variance was conducted to see how condition (marijuana or pornography), previous romantic partner's use of the substance (smoking or viewing), and contextual variables (relationship commitment, secrecy, frequency of use, and context) related to perceptions of relationship satisfaction. The two-way interactions between previous partner's use and contextual variables or condition and the three-way interaction between partner's use, condition, and contextual variables were not significant (all *p* values > .30). Therefore, we found no evidence that responses were moderated by having been in a relationship with someone who engaged in that behavior.

Finally, we explored the potentially moderating role of participants' own relationship status might have on perceptions of relationship satisfaction across the scenarios. First, participants were recoded as either low in commitment (single or casually dating) or high in commitment (long term relationship, engaged, or married). A three-way mixed analy-

sis of variance explored how condition (marijuana or pornography), participants' own relationship commitment (low or high), and contextual variables (commitment, secrecy, frequency of use, and context) related to perceptions of relationship satisfaction. The two-way and three-way interactions that included participants' own level of commitment were not significant (all *p* values > .10). Therefore, we found no evidence that responses were moderated by current relationship status.

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Next, we explored whether having been in a relationship with someone who used the substance (marijuana or pornography) moderated participants' perceptions of addictiveness. A three way mixed analysis of variance was conducted to see how condition (marijuana or pornography), previous romantic partner's use of the substance (smoking or viewing), and contextual variables (relationship commitment, secrecy, frequency of use, and context) related to perceptions of addictiveness. The two-way interactions between previous partner's use and contextual variables or condition and the three-way interaction between partner's use, condition, and contextual variables were not significant (all *p* values > .30). Therefore, we found no evidence that responses were moderated by having been in a relationship with someone who engaged in that behavior.

Finally, we explored the potentially moderating role of current relationship commitment on perceptions of addictiveness. As before, participants low in commitment were single or casually dating, while those high in commitment were in long-term relationships, engaged, or married. A three-way mixed analysis of variance explored how condition (marijuana or pornography), participants' own relationship commitment (low or high), and contextual variables (commitment, secrecy, frequency of use, and context) related to perceptions of addictiveness. The two-way and three-way interactions that included participants' own level of commitment were not significant (all *p* values > .28). Therefore, we found no evidence that responses were moderated by current relationship status.

DISCUSSION

Consistent with hypotheses and prior literature (Bridges et al., 2003), frequency, context, and secrecy of pornography use, as well as relationship commitment of a couple, influenced perceptions of how a romantic partner's pornography use impacts relationship satisfaction and perceptions of addiction. Overall, the four variables uniquely contributed to the decision making process. Yet, patterns of what variables are consistently the most and least important in influencing

perceptions were apparent. For marijuana and pornography use, relationship commitment exerted the least influence on perceptions of addiction and relationship satisfaction. Instead, secrecy about use and frequency of use were the most influential variables. In short, distress over a partner's addictive behaviors may arise at any point in a romantic relationship.

All four variables played a role in determining how addictive participants perceived the behavior to be. Across both conditions, all four of the variables meaningfully contributed to participant's decision-making regarding perceptions of addictive behavior. When ranked in order of importance, a consistent pattern was observed in which participants endorsed the same ranking of the variables for the marijuana and pornography condition. For both conditions, frequency was the most important variable in the decision-making process, followed by context, secrecy, and lastly, relationship commitment.

It is apparent that the four contextual variables in the scenarios impacted relationship satisfaction perceptions. Across both conditions, the four variables meaningfully contributed to participant's decision-making regarding perceptions of relationship satisfaction; however, their relative importance differed depending on the type of addiction described in the scenario. For the pornography condition, participants perceived frequency of use to be the most impactful, followed closely by secrecy, while context of use and relationship commitment were less important. The marijuana condition exhibited a different pattern in which secrecy influenced perceptions of relationship satisfaction most, followed by frequency of use, context, and relationship commitment.

Results indicate that frequency of marijuana or pornography use similarly impacted perceptions of relationship satisfaction. We had hypothesized that excessive pornography use would be perceived as more detrimental to relationship satisfaction than excessive marijuana use; however, relationship satisfaction was similarly affected across addictive behavior types. Such similarities suggest that if we are to define addictive behaviors in part by their impact on social functioning (particularly their impact on close interpersonal relationships), then hypersexual disorder of the pornography type may very well fall under the conceptual umbrella of addictive disorders.

Interestingly, secrecy of use negatively affected relationship status more so in the marijuana condition than in the pornography condition. Perhaps the greater role of secrecy in affecting relationship satisfaction occurred because participants perceive pornography use as a more private activity to begin with, whereas a male partner may be expected to be more open about marijuana use. Therefore, secrecy may have carried a greater meaning about the nature of the activity in the marijuana condition than in the pornography condition. If this is the case, women may be more shocked to find out that a partner smokes marijuana frequently than that a partner views pornography frequently, something they might not be expected to know about in any case. It would be useful for future research to evaluate if secrecy does, in fact, provide valid and discriminatory information about the extent of different addictive behaviors.

Unsurprisingly, perceptions of how addicted the male partners were in the scenarios were significantly related to how frequently they were described as engaging in the behavior. Interestingly, frequency of use played a more influ-

ential role in affecting perceptions of addiction in the pornography condition compared to the marijuana condition. Once again, further assessing why frequency served as a more influential variable in determining if a partner is "addicted" to pornography viewing is warranted. Perhaps normative information regarding typical frequency of pornography use was missing for participants, whereas they may have had more knowledge or awareness about what could be considered excessive marijuana use. This could be easily addressed in a study that provides base rate information for these behaviors prior to presentation of scenarios.

Prior research has indicated that pornography use within a romantic relationship can contribute to a decrease in relationship satisfaction (Bergner & Bridges, 2002; Bridges et al., 2003; Manning, 2006). This study contributes to this literature and indicates that both excessive pornography use and marijuana use within a romantic relationship may contribute to a decrease in relationship satisfaction. However, some researchers have found a growing trend for the acceptance of pornography use within specific populations. For instance, Carroll et al. (2008) found an increase in pornography acceptance (67% acceptance for men and 49% acceptance for women) among university students. Carroll et al. had students report how much they agreed with the statement that viewing pornography was a healthy way to express sexuality. This study did not specify an amount of pornography viewing or a context of pornography viewing, such as within a romantic relationship. Our results likely differed from the study by Carroll et al. due to our focus on excessive pornography use specifically in the context of a romantic relationship.

One limitation of this study was its reliance on college-aged women. Pornography and marijuana use are common among college populations (O'Reilly, Knox & Zusman, 2007; Perkins, Meilman, Leichliter, Cashin & Presley, 1999), so individuals who are older or not in a college setting may perceive these acts in a different manner. Therefore, replicating and extending this study to include non-college aged samples is important. Furthermore, a large majority of participants in this sample were single or dating. People who are in more advanced phases of romantic relationships, such as cohabitating or married individuals, may evaluate the importance of relationship commitment differently than those who are single or dating. Relatedly, we did not assess if people who were currently in a casual relationship or were single had ever been in a long-term romantic relationship before.

A second limitation of the study was the lack of a clear definition of "pornography". Participants may have differed significantly in beliefs about the content and function of pornography use. Given that only 31% of women in our study reported having viewed pornography, it is possible most are unaware of the content of popular pornography. Furthermore, more than half of women were not aware of having been in a relationship with a person who used pornography (although base rates for pornography use are quite high among men; Carroll et al., 2008). Even among women who had been in relationships with pornography users, individual differences in attributions of that use could play important roles in how the behavior is perceived. A minority of women believe a romantic partner's pornography use is "about them"; such attributions are associated with greater distress (Bridges et al., 2003). In contrast, women who see a partner as a victim of an addiction or who otherwise do not make

personal attributions about use report significantly less distress.

Because this study utilized women only, and because pornography use is much more common in men, future research should evaluate if men's perceptions of their female partner's addictive behaviors are similarly influenced by relationship commitment, frequency, secrecy, and contextual factors. Research indicates that to be considered for a diagnosis of hypersexual disorder of the pornography type, men must view pornography ten times more often than women (Långström & Hanson, 2006). Therefore, several important gender-related questions should be addressed in future research. Would men perceive women as "addicted" to pornography if women only occasionally view pornographic material? There is reason to suspect that results may be dramatically different for men. Men typically view and approve of pornography more than women (Carroll et al., 2008; O'Reilly et al., 2007), so they may be less influenced by factors such as secrecy and frequency of pornography use when assessing relationship satisfaction and perceptions of addiction.

This study contributes to the broader literature on how pornography use impacts perceptions of romantic relationships. This study examined if negative outcomes due to a romantic partner's excessive pornography use are different than negative outcomes produced by other compulsive or addictive behaviors, specifically marijuana use. This study suggests that problematic partner pornography use and problematic partner marijuana use are perceived to similarly impact romantic relationships and contribute to a decrease in relationship satisfaction. Furthermore, both are influenced by the frequency, secrecy, and context in which the addictive behaviors occur. Such a finding is consistent with recommendations by professionals that these disorders be considered, when at their most extreme, pathological and worthy of treatment attention.

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APPENDIX

SAMPLE SCENARIO

(1) and (2) are both from the (3) area. They are (4). (1) and (2) enjoy (5) in their free time. In this relationship, (2) has been (6) with (1) about viewing pornography/smoking marijuana. (2) views pornography/smokes marijuana (7), typically when (1) is (8).

1. Female name
2. Male name
3. City
4. Relationship commitment (casually dating *or* married)
5. Hobby
6. Secrecy (open and honest with *or* lying to)
7. Frequency of use (no more than once every few weeks *or* daily)
8. Context of use (not around – e.g., out of town *or* in town)