

The development and initial evaluation of the Pornography-Use Avoidance Self-Efficacy Scale

SHANE W. KRAUS^{1,2*}, HAROLD ROSENBERG¹, STEVE MARTINO^{3,4}, CHARLA NICH³ and MARC N. POTENZA³

¹Department of Psychology, Bowling Green State University, Bowling Green, OH, USA

²VISN 1 New England MIRECC, Edith Nourse Rogers Memorial Veterans Hospital, Bedford, MA, USA

³Department of Psychiatry, Yale University School of Medicine, New Haven, CT, USA

⁴VISN 1 New England MIRECC, VA Connecticut Healthcare System, West Haven, CT, USA

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Background and aims: This study employed a newly developed questionnaire to evaluate whether men's self-efficacy to avoid using pornography in each of 18 emotional, social, or sexually arousing situations was associated with either their typical frequency of pornography use or their hypersexuality. *Methods:* Using an Internet-based data collection procedure, 229 male pornography users ($M_{\text{age}} = 33.3$ years, $SD = 12.2$) who had sought or considered seeking professional help for their use of pornography completed questionnaires assessing their situationally specific self-efficacy, history of pornography use, self-efficacy to employ specific pornography-reduction strategies, hypersexuality, and demographic characteristics. *Results:* Frequency of pornography use was significantly negatively associated with level of confidence in 12 of the 18 situations. In addition, lower hypersexuality and higher confidence to employ pornography-use-reduction strategies were associated with higher confidence to avoid using pornography in each of the 18 situations. A principal axis factor analysis yielded three clusters of situations: (a) sexual arousal/boredom/opportunity, (b) intoxication/locations/easy access, and (c) negative emotions. *Discussion and conclusions:* This questionnaire could be employed to identify specific high-risk situations for lapse or relapse and as a measure of treatment outcome among therapy clients, but we recommend further examination of the psychometric properties and clinical utility of the questionnaire in treatment samples. Because only one of the three clusters reflected a consistent theme, we do not recommend averaging self-efficacy within factors to create subscales.

Keywords: hypersexuality, pornography, scale development, self-efficacy, situational confidence

INTRODUCTION

Compulsive sexual behaviors, including problematic viewing of pornography, may be conceptualized as behavioral addictions (Kraus, Voon, & Potenza, 2016). Pornography refers to written or pictorial material describing or showing sexually explicit images designed to elicit sexual arousal in the reader or viewer. Recreational use of pornography, most of which is currently viewed online, is common among both heterosexual and gay men but less common among women (Morgan, 2011; Ross, Mansson, & Daneback, 2012; Rosser et al., 2013; Traeen et al., 2014; Wright, 2013). For many individuals, viewing pornography may be a healthy sexual activity to facilitate solitary masturbation or enhance dyadic sexual activity (Kohut, Fisher, & Campbell, 2017; Weinberg, Williams, Kleiner, & Irizarry, 2010).

However, some individuals view pornography excessively, have difficulty controlling their use, report intense urges or cravings, experience social-occupational impairment, or use pornography to cope with anxiety or dysphoric moods (Gola & Potenza, 2016; Gola et al., 2017; Kor et al., 2014; Kraus & Rosenberg, 2014; Kraus, Meshberg-Cohen, Martino, Quinones, & Potenza, 2015; Kraus, Potenza, Martino, & Grant, 2015). In addition, frequent use of pornography has

been associated with relationship dissatisfaction among coupled men and women (Bridges & Morokoff, 2011; Poulsen, Busby, & Galovan, 2013). Research by Reid et al. (2012) suggested that men report more problems with excessive use of pornography and other compulsive sexual behaviors (e.g., frequent anonymous/casual sex, paid sex, and compulsive masturbation) than women. Additional research is needed to better understand the psychological characteristics associated with problematic use of pornography, which, in turn, could aid in the identification of individuals experiencing problems and the development of therapies to help them reduce their use of pornography (Kraus, Martino, & Potenza, 2016).

Those who use pornography problematically may face obstacles as they attempt to quit using or reduce the frequency with which they view pornography. These obstacles include situations in which one is tempted to watch pornography (e.g., when sexually aroused, after drinking or drug use, or when feeling bored or sad). Coping with tempting situations

* Corresponding author: Shane W. Kraus, PhD; VISN 1 New England MIRECC, Edith Nourse Rogers Memorial Veterans Hospital, 200 Spring Road, Building 5, Room 135B, Bedford, MA 01730, USA; Phone: +1 781 687 2000 ext. 5001; +1 781 687 3228; E-mail: shane.kraus@va.gov

could be influenced, in part, by one's self-efficacy or self-confidence to avoid using pornography in such situations. *Self-efficacy* (Bandura, 1977) refers to confidence in one's ability to engage in behaviors to reach desired goals. Self-efficacy beliefs are not simply predictions about what one will do, but are beliefs about what one is capable of doing (Maddux, 2009). Self-efficacy theory proposes that efficacy beliefs contribute to psychological adjustment, physical health, and efforts to change one's behavior.

Over the past several decades, researchers have developed multiple self-report questionnaires designed to assess individuals' self-efficacy to abstain from other addictive behaviors, such as drinking alcohol (Miller, Ross, Emmerson, & Todt, 1989; Oei, Hasking, & Young, 2005; Young, Oei, & Crook, 1991), using illicit drugs (Martin, Wilkinson, & Poulos, 1995; Sklar, Annis, & Turner, 1997), and gambling (Casey, Oei, Melville, Bourke, & Newcombe, 2008; Hodgins, Peden, & Makarchuk, 2004) in different situations (e.g., with friends, at favorite bars/pubs, feeling bored, and experiencing strong cravings/urges). Designed for use with both clinical and non-clinical samples, these self-efficacy questionnaires typically ask respondents to rate their confidence they could abstain from their preferred substance or avoid gambling using a scale from 0% to 100% in 10% increments. Research suggests that lower drinking refusal self-efficacy is related to increased alcohol consumption (Lee & Oei, 1993; Stevens, Littlefield, Blanchard, Talley, & Brown, 2016) and that problem gamblers report significantly lower gambling refusal self-efficacy than non-problem gamblers (Casey et al., 2008).

Although a questionnaire to assess situation-specific self-efficacy to avoid using pornography could be of value to researchers, clinicians, and clients, we could not find any research that examined whether individuals' confidence to avoid using pornography varies across different circumstances. Therefore, we developed a questionnaire to measure pornography users' confidence that they could avoid using pornography in 18 situations, such as when intoxicated, sexually aroused, exposed to pornographic material, and experiencing a variety of emotional states. To develop a pool of potential situations for the questionnaire, we modified nine contexts from the Drinking Refusal Self-Efficacy Questionnaire – Revised (Oei et al., 2005) that could also be applied to the use of pornography and added nine additional situations in which people who use pornography might have difficulty avoiding use.

Using a sample of men who had sought or had considered seeking therapy for their use of pornography, we tested whether self-efficacy to avoid using pornography in each of the 18 situations varied as a function of respondents' typical weekly frequency of pornography use. Based on our assumption that those who use pornography more frequently would report less confidence in their ability to avoid using it in various circumstances, we expected that confidence would be lower among individuals using pornography more frequently, but we did not hypothesize whether the association would occur in all or only some of the 18 situations.

In addition, we expected that self-efficacy to avoid using pornography in these tempting situations would be negatively associated with a measure of hypersexuality (Reid, Garos, &

Carpenter, 2011) and positively associated with self-efficacy to employ self-initiated pornography-use-reduction strategies (Kraus, Rosenberg, & Tompsett, 2015). Finally, we conducted a principal axis factor analysis to evaluate whether there were clusters of situations for which ratings of self-efficacy were highly correlated. Given the exploratory nature of this study, we did not propose a specific factor structure for the newly developed questionnaire.

METHOD

Participants

Using data from a larger investigation that assessed 1,298 participants' self-efficacy to employ cognitive-behavioral strategies to reduce pornography use regardless of context (Kraus, Rosenberg, & Tompsett, 2015), we identified 83 men who had sought professional help previously and 186 men who were currently interested in seeking professional help for pornography use. In this study, we analyzed data only from this subset of 229 men, because we sought to evaluate self-efficacy to *avoid* using pornography in different contexts among individuals who might be experiencing problematic use as indicated by having contemplated or sought treatment. As Table 1 shows, the sample comprised relatively young, typically married/partnered men, about two thirds of whom self-identified as heterosexual. As Table 2 reveals, the sample comprised active users of pornography (80% viewed pornography at least weekly or more), and almost three fourths had attempted to quit using pornography at least once.

Consistent with their having considered or sought professional assistance for their use of pornography, these 229 men had a significantly higher mean score on a measure of hypersexuality ($M = 61.0$, $SD = 17.5$) compared with the 1,069 men who had not considered or sought assistance [$(M = 39.4$, $SD = 15.6)$, $t(1, 295) = 18.61$, $p < .001$, Cohen's $d = 1.30$]. Similarly, the subset of 229 men had made more attempts to quit using pornography (0 attempts = 25.8%, 1–3 attempts = 35.8%, 4+ attempts = 38.4%) compared with the 1,069 men who had not sought assistance [(0 attempts = 76.9%, 1–3 attempts = 18.2%, 4+ attempts = 4.9%), $\chi^2_{(1)} = 296.89$, $p < .001$, Cramer's $V = 0.48$]. Third, the subset of 229 men watched pornography significantly more frequently (4+ days per week = 55.5%) than the 1,069 men who had not sought assistance [(4+ days per week = 42.4%), $\chi^2_{(1)} = 13.72$, $p < .001$, Cramer's $V = 0.10$]. These comparisons supported our decision to include in the analyses only that subset of men who reported having sought or considering seeking professional help for their use of pornography.

Procedure

Following approval of the project by the Institutional Review Board of Bowling Green State University (BGSU), we posted a short description of the study during June and July 2013 on several websites (88% of replies came from postings to Craigslist and 12% came from postings to Psych Research, Psych Hanover, and American Sexual Health Association). To be eligible, men had to be at least

Table 1. Demographic and sexual history characteristics of men who had sought or were interested in seeking treatment for pornography use ($n = 229$)

Characteristics	M (SD) or %
Age	33.3 (12.2)
Country where currently residing	
United States	80%
Other English-speaking countries (Canada, UK, and Australia)	20%
Highest education level completed	
Some high school/high-school diploma	22%
Some college or associated degree	41%
Bachelor's degree	25%
Advanced degree (PhD, MD, and JD)	12%
Relationship status	
Single and not dating	35%
Dating and not exclusive	22%
Engaged, married, and partnered	43%
Living situation	
Alone	21%
With roommates	16%
With partner and/or family member	63%
Sexual orientation	
Heterosexual	66%
Gay	11%
Bisexual	17%
Uncertain	6%
Sexual activities engaged in during the last 30 days ^a	
Solitary masturbation	99%
Vaginal intercourse	48%
Anal intercourse	26%
Oral sex (given and/or received)	57%
Mutual masturbation (given and/or received)	49%
Had contracted a sexually transmitted disease	14%
Number of lifetime partners with whom engaged in vaginal or anal intercourse	
None	12%
1–3	24%
4–6	14%
7–10	8%
11–20	13%
21+	29%

Note. Proportions based on number answering that question. Some totals may not equal 100% due to rounding. *SD*: standard deviation.

^aParticipants could mark more than one answer on this question.

18 years old and had to report having watched pornography at least once in the previous 6 months. As an incentive, we informed eligible participants that we would donate \$2.00 for every completed survey to the American Cancer Society (up to a maximum of \$150).

After they read the informed consent sheet, participants were provided the following definition of pornography: “Pornography is defined as any materials designed to cause or enhance sexual arousal or sexual excitement in the viewer. Such materials show clear and explicit sexual acts, such as vaginal intercourse, anal intercourse, oral sex, group sex, etc. Pornography does not include materials, such as underwear catalogs or materials containing men

Table 2. Pornography history characteristics of men who had sought or were interested in seeking treatment for pornography use ($n = 229$)

Characteristics	M (SD) or %
Frequency with which pornography watched during previous 6 months	
Several times a month or less	20%
1 day a week	5%
2–3 days a week	21%
4–6 days a week	27%
Daily or several times a day	28%
Total amount of time watching pornography each week	
Pornography viewed less than once per week	7%
30 min or less	28%
Up to 1 hr	23%
Between 1 and 2 hr	20%
3 or more hours	22%
Proportion of pornography viewing occasions on which participant masturbated to orgasm	
Did not masturbate to pornography	3%
Between one-fourth and three-fourths of the occasions	33%
Every or almost every occasion	64%
Typical methods used to access pornography ^a	
Internet: computer, laptop, tablet, and smartphone	99%
Rented/purchased DVDs	26%
Magazines	22%
Erotic books	18%
Adult movie theatres	14%
Sex clubs	20%
Who are you typically with when viewing pornography? ^a	
Alone (solitary activity)	98%
Romantic partner (e.g., boyfriend, girlfriend, spouse, etc.)	26%
Friend(s)	14%
Online date (e.g., Craigslist, dating site, etc.)	27%
Other person(s) via online webcam	21%
In the past, how many times have you attempted to quit completely using pornography?	
None	26%
1–3 times	36%
4+ times	39%

Note. Proportions based on number answering that question. Some totals may not equal 100% due to rounding. *SD*: standard deviation.

^aParticipants could mark more than one answer on this question.

and women posing naked unless these images portray clear and explicit sexual acts.” We provided this definition so that respondents would know we considered pornography to be materials that displayed overt sexual acts. This definition of pornography was adapted from another investigation (Hald & Malamuth, 2008), and we have used it in two previous studies (Kraus & Rosenberg, 2014, 2016). Next, participants completed the self-efficacy questionnaire and additional measures assessing history of pornography use, self-efficacy to employ specific pornography-reduction strategies without reference to context, and hypersexuality.

Measures

Pornography-Use Avoidance Self-Efficacy Scale (PASS). To develop the pool of situations for the PASS, we (a) modified nine contexts from the Drinking Refusal Self-Efficacy Questionnaire – Revised (Oei et al., 2005) that could also be applied to use of pornography and (b) generated nine additional situations in which one might have difficulty in avoiding the use of pornography (e.g., when sexually aroused, logging onto the Internet, driving by an adult bookstore or strip club) based on the first author’s clinical work with individuals seeking treatment for problematic pornography use at a specialty outpatient clinic that treats individuals for behavioral addictions. We used the Drinking Refusal Self-Efficacy Questionnaire – Revised as a model, because it has been evaluated in both community and clinical samples (Oei, Hasking, & Phillips, 2007; Oei et al., 2005; Young, Hasking, Oei, & Loveday, 2007). Participants rated on an 11-point scale [from 0% (“not at all confident”) to 100% (“completely confident”) in increments of 10%] as how confident they were that they could avoid using pornography in each of 18 situations. Specifically, the instructions stated, “We are *not asking* whether you WOULD avoid using pornography in these situations. Rather, *we are asking* how confident you are that you COULD avoid using pornography in these situations.” The instructions and situations are easily readable [Flesch–Kincaid Grade Level = 4.1; Flesch Reading Ease = 73.3 on a scale of 0 (most difficult) to 100 (easiest)]. See Appendix for a copy of the PASS.

Self-initiated Pornography Use-Reduction Self-Efficacy Questionnaire. This questionnaire measures individuals’ self-efficacy to use eight specific cognitive-behavioral strategies intended to reduce the frequency and duration of their pornography use without any reference to context (Kraus et al., 2015). Participants were instructed to rate their current confidence [on an 11-point scale from 0% (“not at all confident”) to 100% (“completely confident”) in increments of 10%] that they could use each of the listed strategies [e.g., “Set a limit of using porn no more than once per day;” “Before using porn, set a limit on the number of minutes that each porn session will last;” “Use porn only on pre-selected days of the week (e.g., only on weekends);” “Increase the number of days that you do not watch porn in between porn-watching days;” “Do something else for a while when you might use more porn than usual;” “Stay away from places where you might use more porn than usual;” “Do not keep a large stash of porn available (e.g., collection of DVDs, magazines, movies, pictures, or bookmarked websites on your computer and/or smartphone);” and “Record the date and the length of time you spent watching porn after each session”]. A total mean score was calculated by averaging confidence ratings across the eight items. Higher scores denote greater self-efficacy to employ these strategies. In the current sample, this scale had good scale score reliability (Cronbach’s $\alpha = .87$).

Hypersexual Behavior Inventory. This 19-item questionnaire assesses characteristics of hypersexuality, such as engaging in sex in response to stress or dysphoric mood, repeated unsuccessful attempts to control sexual thoughts, urges, and behaviors, and sexually related impairment (Reid

et al., 2011). Respondents rated how often they have experienced each sexual behavior (1 = “never,” 2 = “rarely,” 3 = “sometimes,” 4 = “often,” and 5 = “very often”). Scores on the inventory can range from 19 to 95, and a total score of 53 or higher is suggestive of hypersexuality (Reid et al., 2011, p. 44). In the current sample, the internal consistency reliability coefficients were excellent for the total score ($\alpha = .94$), coping subscale ($\alpha = .91$), consequences subscale ($\alpha = .87$), and control subscale ($\alpha = .92$).

Past professional help for pornography use. We measured men’s lifetime history of seeking assistance for pornography use by asking them to indicate “yes” or “no” to the following question: “Have you ever sought out professional help because of your use of pornography (by professional help we mean seen a counselor, therapist, psychologist, and psychiatrist)?”

Current interest in seeking professional help for pornography use. We assessed men’s current interest in seeking assistance for their pornography use by asking them to indicate “yes” or “no” to the following question: “Would you like to seek professional help for your pornography use but have not yet done so due to various reasons (e.g., shame, embarrassment, not sure where to go, etc.)?”

Demographic and Sexual History Questionnaire. We devised a questionnaire for this study to assess participants’ demographic background (e.g., age, country of residence, education level, relationship status, sexual orientation, and living situation) and sexual history (e.g., frequency of sexual activity within the previous 30 days, number of sexually transmitted infections, and number of lifetime sexual partners).

Pornography History Questionnaire. We devised a questionnaire for this study to assess participants’ pornography history characteristics (e.g., frequent use and typical method used to access pornography).

Statistical analyses

We used SPSS-21 (IBM Corp., Released 2012., IBM SPSS Statistics for Windows, version 23.0, Armonk, NY) to conduct one-way analyses of variance (ANOVAs) to examine context-specific self-efficacy to avoid using pornography. To evaluate whether there were clusters of situations for which ratings of self-efficacy were correlated, we conducted a principal axis factor analysis of the contexts using a direct oblimin rotation. We employed an oblique rotation because it produces simpler solutions, assumes that any factors will correlate, and provides estimates of correlations among factors (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

Ethics

All procedures in this study were carried out in accordance with the Declaration of Helsinki. The Institutional Review Board of BGSU approved the study. All study participants were informed about the scope of the study and all provided informed consent.

RESULTS

Ratings of self-efficacy by situation and frequency of pornography use

Although we conducted 18 separate one-way ANOVAs to evaluate the association of frequency of use and self-efficacy for each situation, we did not reduce the alpha for statistical significance because we were not testing a specific hypothesis and because a Bonferroni correction is considered overly conservative in this type of exploratory study (Bender & Lange, 2001). As Table 3 reveals, lower frequency of pornography use was significantly associated with higher self-efficacy for 12 of the 18 situations. Specifically, those who typically viewed pornography once per week or less had significantly higher self-efficacy they could avoid using pornography when alone at home, experiencing different types of emotional states (e.g., stress, boredom, and happiness), feeling sexually excited, wanting to masturbate, having opportunities to use, and having easy access to pornography. As shown in Table 3, effect sizes for all significant ANOVAs were low (partial η^2 ranged from 0.05 to 0.14).

Associations of situational self-efficacy with hypersexuality and self-efficacy to employ self-initiated pornography-use-reduction

Next, we calculated Pearson's product moment correlations to examine the relationships between mean self-efficacy

to avoid using pornography in each of the 18 situations with hypersexuality (Reid et al., 2011) and with self-efficacy to employ self-initiated pornography-use-reduction strategies (Kraus, Rosenberg, et al., 2015). As the negative correlations in Table 4 (column 5) indicate, lower hypersexuality was associated with higher confidence to avoid using pornography in each of the 18 situations ($r = -.25$ to $-.43$, all p values $<.001$). As the positive correlations in Table 4 (column 6) reveal, higher confidence to employ pornography-use-reduction strategies was associated with higher confidence to avoid using pornography in each of these 18 situations ($r = .35$ – $.64$, all p values $<.001$).

Exploratory factor analysis

A principal axis factor analysis of self-efficacy in the 18 situations identified three factors with eigenvalues greater than 1.0. The first factor had an eigenvalue of 8.07 and accounted for 44.9% of the variance; the second factor had an eigenvalue of 1.96 and accounted for 10.9% of the variance; and the third factor had an eigenvalue of 1.21 and accounted for 6.7% of the variance.

Examination of the pattern matrix in Table 4 (column 2) reveals six situations that loaded 0.50 or higher on the first factor. These situations do not reflect any unified theme, but include situations in which the person experiences sexual arousal (feeling horny; wanting to masturbate; and something triggers desire), feels bored, and has various opportunities to use pornography (alone in own home and using the Internet). The second cluster was composed of seven

Table 3. Means (SDs), F ratios, and effect sizes on the 18 items of the Pornography-Use Avoidance Self-Efficacy Scale by typical weekly pornography use

Variable	Typical weekly pornography use			F score	Partial η^2
	Once a week or less M (SD)	2–3 times a week M (SD)	4+ times per week M (SD)		
Alone in your house/apartment	52.0 (33.4) ^{a,b}	36.0 (33.7) ^a	27.5 (32.5) ^b	10.63**	0.09
Feeling sad	64.0 (32.4) ^{c,d}	44.0 (30.7) ^c	47.4 (37.5) ^d	5.39**	0.05
Alone in your workplace	78.4 (32.9)	78.5 (31.6)	70.2 (37.1)	1.58	0.01
You want to masturbate	48.9 (33.1) ^{e,f}	34.7 (32.6) ^e	26.8 (28.5) ^f	10.11**	0.08
Feeling stressed	63.3 (32.0)	45.3 (27.6)	39.3 (34.6)	10.00**	0.08
Upset with a romantic partner	58.3 (37.4)	55.1 (30.8)	51.3 (38.2)	0.74	0.01
Feeling sexually excited (i.e., horny)	44.4 (34.7) ^{g,h}	28.1 (31.5) ^g	23.3 (30.7) ^h	8.53**	0.07
Feeling bored	53.1 (34.4) ⁱ	43.0 (32.4) ^j	29.9 (30.7) ^{ij}	10.67**	0.09
You are at a friend's house	81.5 (28.8)	82.6 (28.7)	79.5 (31.0)	0.20	0.0
After driving by adult bookstores or strip clubs	73.6 (34.1)	71.9 (35.2)	69.3 (36.2)	0.31	0.0
You have been drinking alcohol	65.3 (35.6)	62.1 (32.6)	55.6 (37.8)	1.55	0.01
Someone offers you the opportunity to use it	68.9 (33.9) ^k	62.3 (36.2)	49.9 (38.3) ^k	5.62**	0.05
You see other people using it	66.9 (32.4) ^l	57.5 (35.8)	46.3 (38.6) ^l	6.41**	0.05
You are using other drugs besides alcohol	67.3 (34.2)	66.0 (33.9)	61.1 (41.6)	0.59	0.01
You use the Internet	67.1 (28.3) ^{m,n}	45.3 (30.1) ^m	36.6 (32.1) ⁿ	18.75**	0.14
Something triggers you to want to use it	49.8 (30.7) ^{o,p}	32.3 (29.9) ^o	30.4 (31.4) ^p	7.88**	0.07
Feeling happy	81.8 (26.5) ^q	73.7 (29.5)	58.7 (33.9) ^q	11.64**	0.09
You are thinking about how good it would feel if you used it	58.6 (35.4)	45.5 (33.9)	42.4 (35.1)	4.15*	0.04

Note. Partial η^2 statistics were calculated for continuous variables where 0.2 = small, 0.13 = medium, and 0.26 = large effect. Superscript letters are used to denote means that are significantly different ($p < .05$) within each situation using least significant difference. For each situation, means that do not contain superscript letters are not significantly different ($p < .05$) from each other. SD : standard deviation. * $p < .05$. ** $p < .01$.

Table 4. Factor loadings on the Pornography-Use Avoidance Self-Efficacy Scale and correlations of self-efficacy with hypersexuality and self-initiated pornography-use-reduction self-efficacy

How confident are you that you COULD AVOID using pornography when . . .	Factor loadings			Correlations with HBI, <i>r</i>	Correlations with SIP-URSQ, <i>r</i>
	1	2	3		
Alone in your house/apartment	0.70	–	–	–.32**	.64**
You use the Internet	0.66	–	–	–.35**	.61**
Something triggers you to want to use it	0.78	–	–	–.34**	.57**
Feeling sexually excited (i.e., horny)	0.89	–	–	–.28**	.53**
Feeling bored	0.57	–	–	–.35**	.56**
You want to masturbate	0.65	–	–	–.27**	.52**
Alone in your workplace	–	0.49	–	–.26**	.39**
You are at a friend's house	–	0.64	–	–.27**	.35**
After driving by adult bookstores or strip clubs	–	0.69	–	–.30**	.45**
Someone offers you the opportunity to use it	–	0.80	–	–.32**	.52**
You see other people using it	–	0.71	–	–.32**	.50**
You are using other drugs besides alcohol	–	0.56	–	–.25**	.41**
You have been drinking alcohol	–	0.58	–	–.30**	.44**
Upset with a romantic partner	–	–	0.55	–.39**	.50**
Feeling stressed	–	–	0.71	–.41**	.54**
Feeling sad	–	–	0.58	–.43**	.57**
You are feeling happy	–	–	–	–.29**	.52**
You are thinking about how good it would feel if you used it	0.49	0.43	–	–.33**	.56**
Eigenvalue	8.07	1.96	1.21		
Percent variance	44.85	10.86	6.71		
Mean inter-item correlation	0.61	0.45	0.58		

Note. Item loadings in boldface indicate loading on the factor. Rating scale ranged from 0% (“not at all confident”) to 100% (“completely confident”) in 10% increments. Factor loadings below 0.40 were removed from the table for clarity of presentation. The current principal axis factor analysis used a direct oblimin (oblique) rotation. HBI: Hypersexual Behavior Inventory; SIP-URSQ: Self-initiated Pornography-Use-Reduction Strategies Self-Efficacy Questionnaire.

** $p < .001$.

situations, all of which loaded 0.49 or higher on this factor (Table 4, column 3). These situations include three types of contexts, one reflecting intoxication (using drugs or alcohol), a second reflecting locations in which one could be tempted to view pornography (alone at workplace; at friend's house), and a third reflecting easy access to pornography (driving by an adult bookstore; offered an opportunity to use pornography; and seeing others viewing pornography). The third cluster was composed of three situations, all of which loaded 0.55 or higher on this factor (Table 4, column 4). These situations reflect negative emotions (feeling stressed; feeling sad; and feeling upset with romantic partner). One of the remaining two situations (feeling happy) did not load above 0.40 on any of the three factors and the other remaining situation (thinking about how good it would feel to use pornography) cross-loaded on two factors.

DISCUSSION

Based on previous research showing that self-efficacy to avoid drinking, using drugs, and gambling varies by context and frequency of engaging in the addictive behavior (Casey et al., 2008; Oei et al., 2005), we tested whether pornography users' confidence that they could avoid using pornography

varied in each of 18 situations as a function of the typical frequency with which they used pornography. To examine this question, we developed the PASS and administered the questionnaire to men who had sought or considered seeking professional help for their use of pornography.

Those who used pornography once per week or less reported significantly higher self-efficacy in situations such as feeling sexually aroused, being alone at home, using the Internet, and experiencing sadness, boredom, or stress. However, even those men who used pornography once per week or less reported relatively low self-confidence (approximately 50% or lower on average) that they could avoid using pornography when they felt sexually excited, wanted to masturbate, or something triggered them to want to use it. The present findings also suggest that these men had notably high confidence (average self-efficacy scores 70% or higher) that they could avoid using pornography at their workplace, at a friend's house, and after driving by an adult bookstore or strip club, regardless of how often they typically used pornography each week.

As a follow-up analysis, we also conducted a principal axis factor analysis to determine whether there were clusters of situations for which ratings of self-efficacy were correlated. Because only one of the three clusters reflected a consistent theme (relating to negative emotions), we do not recommend averaging self-efficacy within or across

clusters composed of different types of situations. Instead, we recommend the PASS to be used to identify each of the specific situations in which clients or research participants perceive they would have difficulty avoiding use of pornography.

In addition to examining whether self-efficacy varied by context, we found that confidence to employ specific strategies to reduce one's use of pornography (Kraus, Rosenberg, & Tompsett, 2015) was significantly positively correlated with self-efficacy to avoid using pornography in each of the 18 situations. However, the size and range of coefficients, which varied from 0.35 to 0.64 across the 18 situations, indicates that assessing how confident these men felt about avoiding use of pornography in each of these contexts was associated only moderately with their confidence to employ specific strategies to reduce how often and for how long they use pornography. This suggests that knowing how confident men are that they can employ specific strategies is different from knowing their confidence that they can refrain from use in specific situations. In addition, because one of the underlying characteristics of hypersexuality is difficulty controlling one's sexual behavior (Kafka, 2010), it lends credibility to the ratings of self-efficacy that scoring higher on hypersexuality was associated with having lower self-efficacy to avoid using pornography when tempted by external or internal cues.

Theoretically, self-efficacy (Bandura, 1977) may be construed as both a relatively stable trait-like sense of confidence in one's ability to avoid pornography and a waxing and waning state that may vary considerably as a function of one's mood, the intensity of craving to use pornography, the amount of time that has passed since one last used pornography, and whether one is trying to stop using pornography. Additional research could evaluate the stability over time of self-efficacy in high-risk situations, whether craving or deprivation is associated with one's confidence to avoid using pornography in these various contexts, and the relationship of avoidance self-efficacy with compulsive use.

Limitations

This study has several limitations. First, the use of self-report measures depends on respondents' recollection of and their willingness to disclose their sexual and pornography-related behavior. However, use of an online data collection procedure and the promise of anonymity may have encouraged disclosure rather than underreporting of sexual behaviors by participants. Second, our findings may not generalize to individuals who do not use the Internet to access pornography (e.g., those concerned with privacy issues or those without Internet access). Third, the 18 situations on the PASS are not an exhaustive list of contexts in which one might use pornography. Therefore, clinicians and researchers might include an open-ended question to measure self-efficacy in additional situations (e.g., after seeing an online advertisement for pornography, when one's sexual partner is currently unavailable, and when one is having difficulty becoming sexually aroused) to enhance the content validity of the scale. In addition, because this is the first study to evaluate context-specific avoidance

self-efficacy, we are unable to compare our findings with those obtained from other samples of treated or untreated pornography users, or among those wishing to abstain completely from pornography. Another potential limitation was the exclusive recruitment of men, primarily because more men use pornography than women (Morgan, 2011; Ross et al., 2012; Rosser et al., 2013; Traeen et al., 2014; Wright, 2013) and because men are more likely to seek treatment for problematic use of pornography (Kraus, Potenza, et al., 2015; Reid et al., 2012). We recommend additional research with women who are contemplating or seeking treatment for problematic use of pornography.

CONCLUSIONS

These limitations notwithstanding, we believe there are several possible applications of the scale. First, assessing clients' confidence that they could avoid using pornography in different contexts could enhance treatment planning and relapse prevention training. Depending on the specific situations they identify as difficult, clients could be taught and encouraged to employ self-control coping skills (Kraus, Rosenberg, et al., 2015) to help them avoid using pornography in situations where they have little confidence. Second, the questionnaire could be used as a therapy outcome measure to evaluate the degree to which therapeutic interventions increase a client's self-confidence to avoid using pornography. Third, researchers could use the questionnaire to test hypotheses about the associations of avoidance self-efficacy in specific situations with personality (e.g., non-sexual sensation-seeking or impulsivity) and environmental factors (e.g., accessibility of Internet pornography; time spent alone vs. with others), which may predict problematic use of pornography.

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Authors' contribution: SWK (Principal Investigator) and HR contributed to the initial study design, data collection, interpretation of results, and drafted the original manuscript. SM, MNP, and CN contributed to the interpretation of the results, manuscript development, and final draft approval. SWK had final responsibility for the decision to submit for publication. All authors had full access to the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

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REFERENCES

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. doi:10.1037/0033-295X.84.2.191
- Bender, R., & Lange, S. (2001). Adjusting for multiple testing—When and how? *Journal of Clinical Epidemiology*, *54*(4), 343–349. doi:10.1016/S0895-4356(00)00314-0
- Bridges, A. J., & Morokoff, P. J. (2011). Sexual media use and relational satisfaction in heterosexual couples. *Personal Relationships*, *18*(4), 562–585. doi:10.1111/j.1475-6811.2010.01328.x
- Casey, L. M., Oei, T. P., Melville, K. M., Bourke, E., & Newcombe, P. A. (2008). Measuring self-efficacy in gambling: The Gambling Refusal Self-Efficacy Questionnaire. *Journal of Gambling Studies*, *24*(2), 229–246. doi:10.1007/s10899-007-9076-2
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, *4*(3), 272–299. doi:10.1037/1082-989X.4.3.272
- Gola, M., & Potenza, M. (2016). Paroxetine treatment of problematic pornography use: A case series. *Journal of Behavioral Addictions*, *5*(3), 529–532. doi:10.1556/2006.5.2016.046
- Gola, M., Wordecha, M., Sescousse, G., Lew-Starowicz, M., Kossowski, B., Wypych, M., Makeig, S., Potenza, M. N., & Marchewka, A. (2017). Can pornography be addictive? An fMRI study of men seeking treatment for problematic pornography use. *Neuropsychopharmacology*, *42*(10), 2021–2031. doi:10.1038/npp.2017.78
- Hald, G. M., & Malamuth, N. M. (2008). Self-perceived effects of pornography consumption. *Archives of Sexual Behavior*, *37*(4), 614–625. doi:10.1007/s10508-007-9212-1
- Hodgins, D., Peden, N., & Makarchuk, K. (2004). Self-efficacy in pathological gambling treatment outcome: Development of a Gambling Abstinence Self-Efficacy Scale (GASS). *International Gambling Studies*, *4*(2), 99–108. doi:10.1080/14459790412331296947
- Kafka, M. P. (2010). Hypersexual disorder: A proposed diagnosis for DSM-V. *Archives of Sexual Behavior*, *39*(2), 377–400. doi:10.1007/s10508-009-9574-7
- Kohut, T., Fisher, W. A., & Campbell, L. (2017). Perceived effects of pornography on the couple relationship: Initial findings of open-ended, participant-informed, “bottom-up” research. *Archives of Sexual Behavior*, *46*(2), 585–602. doi:10.1007/s10508-016-0783-6
- Kor, A., Zilcha-Mano, S., Fogel, Y. A., Mikulincer, M., Reid, R. C., & Potenza, M. N. (2014). Psychometric development of the Problematic Pornography Use Scale. *Addictive Behaviors*, *39*(5), 861–868. doi:10.1016/j.addbeh.2014.01.027
- Kraus, S., & Rosenberg, H. (2014). The Pornography Craving Questionnaire: Psychometric properties. *Archives of Sexual Behavior*, *43*(3), 451–462. doi:10.1007/s10508-013-0229-3
- Kraus, S. W., Martino, S., & Potenza, M. N. (2016). Clinical characteristics of men interested in seeking treatment for use of pornography. *Journal of Behavioral Addictions*, *5*(2), 169–178. doi:10.1556/2006.5.2016.036
- Kraus, S. W., Meshberg-Cohen, S., Martino, S., Quinones, L. J., & Potenza, M. N. (2015). Treatment of compulsive pornography use with naltrexone: A case report. *The American Journal of Psychiatry*, *172*(12), 1260–1261. doi:10.1176/appi.ajp.2015.15060843
- Kraus, S. W., Potenza, M. N., Martino, S., & Grant, J. E. (2015). Examining the psychometric properties of the Yale-Brown Obsessive-Compulsive Scale in a sample of compulsive pornography users. *Comprehensive Psychiatry*, *59*, 117–122. doi:10.1016/j.comppsy.2015.02.007
- Kraus, S. W., & Rosenberg, H. (2016). Lights, camera, condoms! Assessing college men’s attitudes toward condom use in pornography. *Journal of American College Health*, *64*(2), 139–146. doi:10.1080/07448481.2015.1085054
- Kraus, S. W., Rosenberg, H., & Tompsett, C. J. (2015). Assessment of self-efficacy to employ self-initiated pornography use-reduction strategies. *Addictive Behaviors*, *40*, 115–118. doi:10.1016/j.addbeh.2014.09.012
- Kraus, S. W., Voon, V., & Potenza, M. N. (2016). Should compulsive sexual behavior be considered an addiction? *Addiction*, *111*(12), 2097–2106. doi:10.1111/add.13297
- Lee, N. K., & Oei, T. P. (1993). The importance of alcohol expectancies and drinking refusal self-efficacy in the quantity and frequency of alcohol consumption. *Journal of Substance Abuse*, *5*(4), 379–390. doi:10.1016/0899-3289(93)90006-W
- Maddux, J. E. (2009). Self-efficacy: The power of believing you can. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (pp. 335–343). New York, NY: Oxford University Press.
- Martin, G. W., Wilkinson, D. A., & Poulos, C. X. (1995). The Drug Avoidance Self-Efficacy Scale. *Journal of Substance Abuse*, *7*(2), 151–163. doi:10.1016/0899-3289(95)90001-2
- Miller, P. J., Ross, S. M., Emmerson, R. Y., & Todt, E. H. (1989). Self-efficacy in alcoholics: Clinical validation of the Situational Confidence Questionnaire. *Addictive Behaviors*, *14*(2), 217–224. doi:10.1016/0306-4603(89)90052-X
- Morgan, E. M. (2011). Associations between young adults’ use of sexually explicit materials and their sexual preferences, behaviors, and satisfaction. *Journal of Sex Research*, *48*(6), 520–530. doi:10.1080/00224499.2010.543960
- Oei, T. P., Hasking, P., & Phillips, L. (2007). A comparison of general self-efficacy and drinking refusal self-efficacy in predicting drinking behavior. *The American Journal of Drug and Alcohol Abuse*, *33*(6), 833–841. doi:10.1080/00952990701653818
- Oei, T. P., Hasking, P. A., & Young, R. M. (2005). Drinking Refusal Self-Efficacy Questionnaire – Revised (DRSEQ-R): A new factor structure with confirmatory factor analysis. *Drug and Alcohol Dependence*, *78*(3), 297–307. doi:10.1016/j.drugalcdep.2004.11.010
- Poulsen, F. O., Busby, D. M., & Galovan, A. M. (2013). Pornography use: Who uses it and how it is associated with couple outcomes. *Journal of Sex Research*, *50*(1), 72–83. doi:10.1080/00224499.2011.648027
- Reid, R. C., Carpenter, B. N., Hook, J. N., Garos, S., Manning, J. C., Gilliland, R., Cooper, E. B., McKittrick, H., Davtian, M., & Fong, T. (2012). Report of findings in a DSM-5 Field Trial for hypersexual disorder. *The Journal of Sexual Medicine*, *9*(11), 2868–2877. doi:10.1111/j.1743-6109.2012.02936.x
- Reid, R. C., Garos, S., & Carpenter, B. N. (2011). Reliability, validity, and psychometric development of the Hypersexual Behavior Inventory in an outpatient sample of men. *Sexual Addiction & Compulsivity*, *18*(1), 30–51. doi:10.1080/10721062.2011.555709
- Ross, M. W., Mansson, S. A., & Daneback, K. (2012). Prevalence, severity, and correlates of problematic sexual Internet use in

- Swedish men and women. *Archives of Sexual Behavior*, 41(2), 459–466. doi:[10.1007/s10508-011-9762-0](https://doi.org/10.1007/s10508-011-9762-0)
- Rosser, B. R. S., Smolenski, D. J., Erickson, D., Iantaffi, A., Brady, S. S., Grey, J. A., Hald, G. M., Horvath, K. J., Kilian, G., Træen, B., & Wilkerson, J. M. (2013). The effects of gay sexually explicit media on the HIV risk behavior of men who have sex with men. *AIDS and Behavior*, 17(4), 1488–1498. doi:[10.1007/s10461-013-0454-8](https://doi.org/10.1007/s10461-013-0454-8)
- Sklar, S. M., Annis, H. M., & Turner, N. E. (1997). Development and validation of the Drug-Taking Confidence Questionnaire: A measure of coping self-efficacy. *Addictive Behaviors*, 22(5), 655–670. doi:[10.1016/S0306-4603\(97\)00006-3](https://doi.org/10.1016/S0306-4603(97)00006-3)
- Stevens, A. K., Littlefield, A. K., Blanchard, B. E., Talley, A. E., & Brown, J. L. (2016). Does drinking refusal self-efficacy mediate the impulsivity-problematic alcohol use relation? *Addictive Behaviors*, 53, 181–186. doi:[10.1016/j.addbeh.2015.10.019](https://doi.org/10.1016/j.addbeh.2015.10.019)
- Traeen, B., Hald, G. M., Noor, S. W., Iantaffi, A., Grey, J., & Rosser, B. R. S. (2014). The relationship between use of sexually explicit media and sexual risk behavior in men who have sex with men: Exploring the mediating effects of sexual self-esteem and condom use self-efficacy. *International Journal of Sexual Health*, 26(1), 13–24. doi:[10.1080/19317611.2013.823900](https://doi.org/10.1080/19317611.2013.823900)
- Weinberg, M. S., Williams, C. J., Kleiner, S., & Irizarry, Y. (2010). Pornography, normalization, and empowerment. *Archives of Sexual Behavior*, 39(6), 1389–1401. doi:[10.1007/s10508-009-9592-5](https://doi.org/10.1007/s10508-009-9592-5)
- Wright, P. J. (2013). US males and pornography, 1973-2010: Consumption, predictors, correlates. *Journal of Sex Research*, 50(1), 60–71. doi:[10.1080/00224499.2011.628132](https://doi.org/10.1080/00224499.2011.628132)
- Young, R. M., Hasking, P. A., Oei, T. P., & Loveday, W. (2007). Validation of the Drinking Refusal Self-Efficacy Questionnaire – Revised in an adolescent sample (DRSEQ-RA). *Addictive Behaviors*, 32(4), 862–868. doi:[10.1016/j.addbeh.2006.07.001](https://doi.org/10.1016/j.addbeh.2006.07.001)
- Young, R. M., Oei, T. P. S., & Crook, G. M. (1991). Development of a Drinking Self-Efficacy Questionnaire. *Journal of Psychopathology and Behavioral Assessment*, 13(1), 1–15. doi:[10.1007/BF00960735](https://doi.org/10.1007/BF00960735)

APPENDIX: PORNOGRAPHY-USE AVOIDANCE SELF-EFFICACY SCALE (PASS)

Directions: Please indicate your current confidence on a scale from 0% (“not at all confident”) to 100% (“completely confident”) that you COULD avoid using pornography in each of the following listed situation:

We are *not asking* whether you WOULD avoid using pornography in these situations. Rather, *we are asking* how confident you are that you COULD avoid using porn in these situations.

0% (not at all confident)	to	100% (completely confident)
How confident you are that you COULD . . .		
1. Avoid using porn when alone in your house/apartment		_____ %
2. Avoid using porn when alone in your workplace		_____ %
3. Avoid using porn when you are at a friend’s house		_____ %
4. Avoid using porn when feeling stressed		_____ %
5. Avoid using porn when feeling sexually excited (e.g., horny)		_____ %
6. Avoid using porn when feeling bored		_____ %
7. Avoid using porn when upset with a romantic partner		_____ %
8. Avoid using porn when feeling sad		_____ %
9. Avoid using porn when you plan to masturbate		_____ %
10. Avoid using porn when feeling happy		_____ %
11. Avoid using porn after driving by adult bookstores and strip clubs		_____ %
12. Avoid using porn when you are thinking about how good it would feel if you used it		_____ %
13. Avoid using porn when you have been drinking alcohol		_____ %
14. Avoid using porn when you have been using other drugs besides alcohol		_____ %
15. Avoid using porn when someone offers you the opportunity to use it		_____ %
16. Avoid using porn when you see other people using it		_____ %
17. Avoid using porn when you log into the Internet		_____ %
18. Avoid using porn when something “triggers” you to want to use it		_____ %