

This a pre-publication, uncorrected proof and is provided for information only. The citation for the published journal paper is: Duffy, A., Dawson, D. L., & Das Nair, R. (2016). Pornography addiction in adults: a systematic review of definitions and reported impact. *The Journal of Sexual Medicine*, 13(5), 760-777.

Self-perceived pornography addiction in adults: A systematic review of definitions and reported impact

Abstract

Self-perceived ‘pornography addiction’ (SPPA) has increasingly emerged as a concept within research and popular culture, and commentators warn of the reported negative impact that it has. Despite this, ‘pornography/porn addiction’ is not a formally recognized disorder and there is disagreement amongst researchers regarding its definition, or whether it exists at all. Therefore, how SPPA is operationalized often varies, and this is likely to influence the conclusions made about the impact of SPPA. This review provides an overview of the definitions of SPPA in research investigating the impact of SPPA. We found that SPPA is most frequently operationalized as *excessive* pornography-use and *negative consequences*. As a result, researchers tended to focus on the frequency of pornography use and related impact as determinants of SPPA. SPPA is reported to impact the user and their partners in similar ways, such as increased feelings of isolation and relationship breakdowns. However, we found a number of methodological limitations of the primary studies, which limit the strength of the conclusions that can be drawn. Limitations include the lack of representative samples, and inadequate measures of self-perceived pornography addiction and its impact. In light of these findings, the review concludes with recommendations for future research.

Keywords: Pornography; addiction; review; definitions; impact

Introduction

There has been a steady increase in the study of addiction to pornography since the 1970s, with an explosion of publications following the advent of the internet and easily accessible pornography since the mid-1990s ¹. With the increase of access to pornography, there has also been an increase in the number of people seeking treatment for their perceived problematic pornography use ^{2,3}. Consequently, the concept of ‘pornography addiction’ has emerged within clinics and professional discourse ^{4,5}, has gained traction within popular culture, and is prevalent in existing online discourse.

However, there remains controversy over whether ‘pornography addiction’ as a clinical disorder exists, and certainly no agreed diagnostic criteria or recommended guidelines for ‘treatment’ have been developed. Indeed, whilst ‘pornography addiction’ has not been accepted and classified as a psychological disorder in diagnostic manuals, researchers have proposed ‘Hypersexual Disorder’, which included excessive pornography use as a symptom ⁶, for Section III of the DSM-5 which lists conditions requiring further study ⁷. However, the DSM-5 rejected the proposal of Hypersexual Disorder. Nevertheless, a growing body of research suggests that SPPA is a real phenomenon and can be devastating to the ‘sufferer’ (and their intimate partners).

In contrast, however, opponents of the construct of SPPA suggest it is a morally-constructed concept designed to maintain sexual order ⁸. Some critics suggest the function of an addiction narrative is not to provide a consensual understanding of the phenomenon, but to support the argument that society needs to be protected to stay safe and healthy ⁸, and to construct a platform from where ‘experts’ can impose sanctions for ‘our own good’. When applied to pornography viewing, an addiction narrative may serve to impose the parameters of what is considered ‘normal’ and ‘safe’ within the current moral and social context, and to discipline or treat those who transgress these.

Due to the lack of consensus regarding an operational definition of SPPA, or indeed ‘pornography’ more broadly⁹, a plethora of terms are used in this area to refer to what is considered problematic pornography usage: compulsive viewing^{9,10}, impulsive viewing¹¹, excessive viewing¹², and hypersexual disorder^{6,13,14}. However, terms that are used interchangeably render ‘pornography addiction’ “a malleable concept develop(ed) out of a melting pot of different emerging fields of knowledge”¹ (p.244). In addition, definitions differ in terms of whether the focus is on objective behavior or subjective experience¹⁵, and as a result, research pertaining to the impact of pornography addiction can be inconsistent.

For researchers to ensure they are measuring psychological phenomena and prevent subjectivity, specifications of measurable and observable conditions must be outlined. Yet how do we operationally define ‘pornography addiction’ if there is no agreed definition of pornography, and addiction is enshrouded in controversy? Furthermore, research that measures the impact of pornography addiction may be using undefined concepts. Consequently, there may be other variables that relate to the impact pornography addiction has on an individual, rather than pornography use *per se*.

Given that research influences clinical practice, policy makers and social understanding, researchers have a responsibility to minimize bias and maximize the accuracy of information that is communicated to the research community and public.

Aims

This review aimed to examine what the supposed impact of SPPA is, and how the concept is operationalized.

For the purpose of this review, the terms *pornography addiction* and *self-perceived pornography addiction* will be used. This maintains consistency and draws

upon a term popular in our culture. However, this is not to suggest that we (the authors) subscribe to the notion that this behavior is situated within a disease or diagnostic model.

Methods

Literature Searches

The following databases were searched for both quantitative and qualitative papers up to November 2015: CINAHL (2001-2015), Embase (1974-2015), Medline (1946-2015), PsychARTICLES (1980), and PsychInfo (1806-2015). Terms used were: porn*, sexually explicit material, SEM, erotic*, non-paraphilic, cyberpornography, addict*, problematic, excess*, compuls*, impuls*, impact, effec*, behav*, and cause. Terms were combined as appropriate. An asterisk after a term means that all terms that begin with that root were included in the search.

Eligibility Criteria

Quantitative and qualitative studies were included if they were available in English and published in peer-reviewed journals. Although not without the potential for political bias, peer-reviewed journals are viewed as adhering to the highest quality standard of publication¹⁶. Furthermore, peer-reviewed journals arguably have the greatest impact on research, treatment, and policy, and therefore focusing on these papers was considered important for the review given that their conclusions are likely to have the largest influence. Therefore, the following literature were excluded: books and book chapters, conference papers, policy papers, theses, and secondary literature (meta-analyses). Given that the topic is relatively contemporary, it was unlikely that a wealth of papers would be available; therefore, to minimize further restrictions, the search encompassed papers regardless of methodology.

Studies were required to reference (1) an addiction to pornography (or a variant of the term addiction), and (2) the impact of pornography addiction (or variants of). For

the purpose of this review, articles that did not include data on the impact of pornography addiction were excluded, as the relationship between the impact of pornography addiction and how it was defined was of specific interest. Articles that specifically examined the impact of pornography addiction as a disorder in its own right were included, whereas papers that detailed pornography use as a secondary behavior were not. Due to the potential limited number of studies, papers that used terms that could encompass additional behaviors, such as cybersex addiction, but where pornography use was the primary behavior described, were included. As our interest was in pornography that was considered legal in much of Western Europe and North America, papers detailing adolescent or child populations, or other illegal activities, were excluded.

Details of the search process are provided in Figure 1. A total of 9332 studies were initially identified when searching for topic only. After reviewing the titles and abstracts, 86 papers remained. Literature that were not peer reviewed journal articles were removed, leaving 51 articles. Reference lists of these articles were reviewed, identifying eight additional papers for full text review. Following a more detailed review and application of the inclusion and exclusion criteria, specifically whether articles focused on the *impact* of self-perceived pornography *addiction*, ten eligible papers were left for the review.

Data Extraction

The definitions and impact of SPPA, and general characteristics of the studies, were extracted from each study by the primary author, with audit checking on 50% of the papers by the other authors, and are presented in Table I. Any disagreements were reviewed and discussed until consensus was reached. The studies were differentiated according to the research method employed (quantitative/qualitative) in order to assess their methodological quality appropriately, and are presented in Tables II and III, respectively.

Assessment of Methodological Quality of Studies

The methodological approach to mixed-method syntheses as proposed by the Joanna Briggs Institute (JBI; <http://www.joannabriggs.org>) was used, whereby data extraction and syntheses occurred separately before being combined in a final synthesis. Methodological quality for quantitative research was assessed using criteria adapted from the JBI Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI; <http://www.joannabriggs.org>), shown in Table II. Methodological quality for qualitative research was assessed using recommended criteria for qualitative research, shown in Table III ¹⁷.

Results

Quantitative Studies

Five studies used a quantitative methodology; four examined the impact of pornography addiction on the user ¹⁸⁻²¹ and one examined the impact of SPPA on the partner of the user ¹².

In terms of sampling, two studies specifically recruited individuals who subjectively perceived their pornography use to be problematic ^{18,20}, and four recruited from a student population and included individuals who did not meet this criteria. Two studies used male-only samples ^{19,21} and two studies included males and females ^{18,20}. Pyle and Bridges ¹² used only female partners of male individuals they perceived were addicted to pornography. Four ¹⁸⁻²¹ used a self-selecting sample, whereas Pyle and Bridges ¹² did not detail how they recruited participants. Only one study used a control group ¹⁹. All used samples from the USA, and non-heterosexuals were excluded. All four studies reported participant demographics clearly with sample sizes ranging from 37 to 1215.

Of the five studies, one did not provide a clear definition of pornography addiction²⁰ and two stated that they did not provide participants with a definition of pornography^{12,19}.

Quantitative measures were used in two ways: (1) to measure SPPA, and (2) to measure the impact of SPPA (Table I). All studies detailed the measures used, however all but one study¹⁸ included single-item measures, adapted, non-validated measures, and measures which assessed variables that were not specific to pornography use and/or addiction. Only Prause et al.²⁰ used a measure specific to pornography use (Pornography Consumption Effects Scale, PCES²²) to measure impact, although the PCES scores were not discussed in their results or discussion sections.

Single-item measures of frequency were used to assess SPPA in three of the studies^{12,19,21}, although Levin et al.¹⁹ and Twohig et al.²¹ also employed a measure of experiential avoidance (The Acceptance and Action Questionnaire-II; AAQ-II²³) and a cut off score on an outcomes scale (Cognitive and Behavioral Outcomes of Sexual Behavior Questionnaire; CBSOB²⁴) respectively. In contrast, Prause et al.²⁰ used a combination of avoidance, and sex-related measures (Behavioral Inhibition Scale/Behavioral Activation Scale; BIS/BAS²⁵; Sexual Excitation Scale/Sexual Inhibition Scale; SIS/SES²⁶; Sexual Compulsivity Scale; SCS²⁷; Sexual Desire Inventory; SDI²⁸) and Grubbs et al.¹⁸ employed the Cyber Pornography Use Inventory; CPUI-9²⁹.

Twohig et al.²¹ assessed the impact of SPPA using measures designed to assess level of impairment due to sexual behaviors (SCS) and Levin et al.¹⁹ used measures which assessed level of impairment in social functioning (Social Functioning Questionnaire; SFQ³⁰) and mood ratings (Depression Anxiety & Stress Scale-21; DASS-21³¹). Grubbs and colleagues¹⁸ measured the impact of SPPA on psychological distress

using the Centre for Epidemiologic Studies Depression Scale-10 (CES-D ³²), the Generalized Anxiety Disorder-7 ³³, the Perceived Stress Scale ³⁴, the State Anger Subscale of the State-Trait Anger Scale ³⁵, as well as measures of personality (the Neuroticism subscale of the Big Five Inventory ³⁶). Prause et al. ²⁰ measured cognitive and behavioral outcomes, such as worry and actual negative outcomes (Cognitive and Behavioral Outcomes of Sexual Behavior Scale; CBOSB), positive and negative effects of pornography consumption (PCES ²²) and emotion ratings, drawn from both the Positive and Negative Affect Rating Scale ³⁷ and combined with items from Heiman and Rowland ³⁸ to measure both general and sexuality specific affect. Pyle and Bridges ¹², Levin et al. ¹⁹, and Prause et al. ²⁰ used single-item measures to ask participants' subjective view of the effects of their or their partner's pornography use.

All studies employed a cross-sectional design, thus limiting the causality-implying assumptions that can be made from the findings; only one paper highlighted this as a limitation of their study ¹⁹. One study ¹⁸ extended their methods to include 2-wave longitudinal data from a one year follow-up using a subset of their sample (n=106).

Qualitative Studies

Five studies employed qualitative methodologies ³⁹⁻⁴³. One ³⁹ explored the impact of SPPA on the user and the remaining four ⁴⁰⁻⁴³ explored the impact of SPPA on the partner of the user. Sample sizes ranged from 14 to 302. Only female partners of perceived pornography addicts were recruited in four of the studies ⁴⁰⁻⁴³, whilst Cavaglioni ³⁹ recruited only male participants who perceived their pornography use as problematic. All studies excluded participants who were not heterosexual. Two studies used Italian samples ^{39,40}; three used North American samples ⁴¹⁻⁴³.

Only one study met the full criteria for *rich rigor*⁴². The other studies met moderate criteria for rich rigor; however all lacked a justification as to the homogeneity of the samples. In terms of *credibility*, all studies provided detail regarding their analytic method with two providing extensive information^{39,42}. Studies were mostly transparent about the challenges they faced and self-reflexive regarding their potential biases, meeting the criteria for *sincerity*. All provided some level of *resonance* and provided new insights, and in turn extended knowledge meeting the criteria for *significant contribution*. Furthermore, four studies interlinked their method and findings with their stated goals, meeting the full criteria for *meaningful coherence*. Most of the papers provided moderately sufficient detail to assess the study's *ethical clarity*.

Of the five studies, Zitzman and Butler⁴² and Bergner and Bridges⁴³ provided the most clear definition of SPPA using diagnostic characteristics of addiction, however these were subjective accounts. King⁴¹ did not provide a definition at all.

Definitions

Researchers commonly 'borrowed' from the broader psychiatric literature relating to sexual addiction to operationalize SPPA. Definitions therefore made reference to tolerance and withdrawal symptoms; appetitive behaviors, avoidance of intrusive thoughts, urges, and desires as a motivator for viewing pornography, emotional regulation, 'excessive' time spent viewing, dependency, negative outcomes of viewing, relapse cycles, and failed attempts to quit pornography use.

The majority of studies provided a definition of SPPA and eight described the framework they positioned their definitions within^{12,18-21,39-43}. To this end, terms such as addiction, compulsive sexual behaviors, problematic pornography viewing and pornography-dependence were often used interchangeably in the body of text across all, except two studies^{19,20}, with most making reference to the debate regarding terms used

to describe problematic pornography viewing^{18,21,39,40,42,43}. Indeed Zitzman and Butler⁴², went so far as to reject any debate stating that “Resistance to using the term *addiction* is perhaps more a reflection of cultural sexual liberality and permissiveness than any lack of symptomatic and diagnostic correspondence with other forms of addiction” (p. 212). Different terms can imply different pathogenic mechanisms and as such infer different treatment targets, and may also elucidate the explanatory framework utilized by the authors. Nevertheless, four studies described the behavior as “addictive” and situated their understanding within a medical conceptualization, making comparisons to substance addiction^{12,19,40,42}; whereas three studies which did not utilize “addiction” in their analysis, instead drew on a behavioral conceptualization related more to “maladaptive behavior” governed by impulses and intrusions^{20,21,39}. Bergner and Bridges⁴³ drew on language commonly situated within the sex addiction discourse, however, offered that SPPA is an individual’s attempt to repair themselves “following an insult to the masculine self-image⁴⁴, to recover from explicitly sexual childhood degradations⁴⁵, or to triumph over very damaging childhood sexual indoctrinations^{46,47}” (p201).

Although the definitions of SPPA were mostly provided in articles, with the exception of Prause et al.²⁰, it was unclear whether participants were provided with a definition in five of the studies^{18,19,21,41,43}. Half of the studies relied on the participants’ own definition of SPPA^{12,39,40,42,43}. Given the subjectivity of definitions, findings may prove difficult to generalize as different studies may have formulated and measured different concepts.

Recurrent themes revealed SPPA, or variants of, to be defined in part by the amount of pornography consumed^{12,19,40,43}; an ‘excessive’ amount was posited as a measurable indicator. Themes regarding agency were also apparent in the definitions of SPPA with difficulty regulating emotions and controlling consumption of pornography

being described as both characteristics and symptoms^{20,21}. Finally, the presence of negative consequences, to both the individual and “human community”³⁹ (p.309) was commonly used to define SPPA^{12,19,43}.

Correlates and Possible Outcomes of Self-Perceived Pornography Addiction

Four studies investigated and found a negative impact on the partners of the self-perceived pornography addict⁴⁰⁻⁴³, five studies investigated and found a negative impact on the self-perceived pornography addict^{12,18,19,21,39}, and Prause et al.’s²⁰ examination of emotional dysregulation found a positive impact on the pornography user. This study found that those who reported problems with regulating their pornography consumption experienced less emotional dysregulation than those who denied problems regulating their pornography consumption (control group), in response to sexual films. In addition, they found that the control group expressed more anger in response to sexual films.

Levin et al.¹⁹ assessed the relationship between frequent viewing, experiential avoidance and a number of psychosocial outcome variables (anxiety, stress, depression, social functioning, and viewing problems). They found that frequent viewing significantly predicted all outcome variables (although with modest effect sizes), with increased viewing leading to greater problems. In addition, they found that experiential avoidance moderated the relationship between frequencies of viewing and predicted viewing problems and anxiety in individuals with clinical levels of avoidance but not in individuals with non-clinical levels. Grubbs et al.¹⁸ reported a similar relationship between frequency of viewing and psychological distress, however, this was found to be fully mediated by *perceived* addiction. These findings suggest that psychological distress may not occur as a result of the pornography use itself but may be due to the attitudes individuals hold about their pornography use.

Twohig et al.²¹ found that any viewing of pornography was associated with problems in legal/occupational, psychological/spiritual, social, physical (pain/injury and disease/pregnancy), and behavioral outcomes. They found that between 20% and 60% of participants who watched pornography found it to be problematic. However, the amount of viewing was not significantly associated with these variables; negative outcomes did not increase as viewing increased. Using mediation analysis, the researchers found that the relationship between viewing pornography and problematic behavioral outcomes was mediated by scores on the SCS, which measures an individual's attempts to control desires.

Pyles and Bridges¹² found that marijuana and pornography use were both similarly perceived, by the participants, to lower relationship satisfaction; SPPA was perceived to be as damaging as drug addiction. They also demonstrated that when a partner used pornography/marijuana, greater frequency of use, higher secrecy regarding the behavior, relationship commitment, and using in the presence of a significant other were all significantly associated with lower relationship satisfaction. The secrecy of use affected the relationship satisfaction more for partners of pornography users compared to marijuana users. The same variables were associated with perceptions of addictiveness except more so for pornography use than marijuana use.

Recurrent themes related to the negative effects of SPPA were revealed across the studies. Intrapersonal effects on the user and partners included worry²¹, loss of confidence and concentration³⁹, increase in shame and feelings of inadequacy⁴², reduction in self-esteem and identity^{39,40}, and reduced 'physical well-being'⁴⁰. Interpersonal effects included the breakdown of relationships, deterioration of trust and safety in the relationship^{12,40,42,43}, sexual problems^{39,40,43}, perceived rejection^{40,43}, and a detrimental change in how participants viewed their SPPA partners⁴³. Extrapersonal

impact occurred in relation to increased debt⁴¹ and detrimental effects in the work-place, such as lost time and resources^{19,39}.

Overall, female partners experienced more negative effects than male users, with negative effects being described as “traumatic” and “devastating”. As a result of the SPPA, how these participants viewed their partners had fundamentally changed, from being once “good” to inherently “bad”^{39,40,42,43}.

Largely, however, caution must be taken when interpreting these results given the small coefficients of determinants (0.3-.27¹⁹), varying and poor definitions of SPPA, incomplete ethical clarity and self-reflexivity, lack of objective and relevant measures, and inadequate representative samples.

Discussion

This review examined the operational definitions and impact of SPPA. Overall, the literature drew upon the existing addiction narrative, whereby similarities with substance-use disorders were highlighted, or a compulsive narrative which argues sexually-compulsive behaviors relieve anxiety and help to repair one’s self-esteem, all of which are commonly used to describe broader problematic sexual behaviors⁴⁸.

Impact of SPPA focused on either the individual with the perceived pornography addiction or their partner. Negative psychological, physical, and social effects of SPPA were cited as occurring within intrapersonal, interpersonal and extra-personal domains. Research employed different methods and measures, although two studies^{20,21} used the same two measures (SCS and CBOSB) but for different purposes. The methodological quality varied across the reviewed research. The more adequate studies conveyed mixed results regarding the impact of SPPA, offered a more balanced perspective in employing self-defined problematic pornography users, and utilized a theoretical framework for their

research. These factors should be taken into consideration when drawing conclusions made about the impact of SPPA.

Definitions

Difficulties with operationalizing SPPA were apparent within the reviewed literature. Authors tended to draw on the broader medicalized addiction framework, relating to self-perceived sex addiction (SPSA), to conceptualize SPPA, with particular attention paid to ‘excessive’ use and negative consequence variables. As a result, researchers tended to focus on the frequency of pornography use and related impact as determinants of pornography addiction.

However, researchers often used an arbitrary measure of ‘excessive pornography use’ as equivalent to SPPA, at times without any theoretical justification. For example, Twohig et al.²¹ determined ‘high viewing’ as viewing pornography more than 10 times in three months and used this metric as an indicator of SPPA. Conversely, Pyle and Bridges¹² stated daily use was representative of high pornography viewing, the equivalent of viewing pornography around 90 times in a three-month period. Both studies included the frequency of pornography viewing in their definitions of SPPA, yet differed vastly in their definition of ‘frequent’. This reflects broader difficulties in operationalizing SPPA and raises the question as to how the concept can be adequately studied when researchers have different understandings of the variables which they claim characterize it. Therefore, findings provided in research that includes frequency of use in the definition of SPPA should be interpreted with caution.

Furthermore, frequency of viewing alone may not be a sufficient indicator of SPPA. Twohig et al.²¹ and Levin et al.¹⁹ found that attempts to control thoughts and avoidance of pornography, respectively, influenced the impact of pornography viewing. Both identified additional variables which may have contributed to the occurrence of

SPPA but only one ²¹ included them in their definition. Furthermore, Grubbs et al. ¹⁸ concluded that the perception of pornography use is likely to contribute towards the development of SPPA, rather than high amounts of viewing. Conversely, Pyle and Bridges ¹² found that higher frequency of viewing did lead to greater problematic outcomes for the partner; perceived relationship satisfaction decreased with increased viewing. Therefore, it cannot be concluded from the current literature whether frequency of viewing alone can account for negative impact. Perhaps the differences in how variables are operationalized account for these mixed results. Therefore, caution must be taken when findings are collated and used to direct treatment and policy. Furthermore, the relationship between variables operationalized in the definition of SPPA and negative impact may not be a linear one and conceivably, other non-measured factors that contribute to the identified interactions and moderations should be investigated.

Other definitional themes identified included that of *agency*; whether the self-perceived pornography addict had control of their behavior and was responsible for their actions. Within the disease model, control and responsibility are impaired following the introduction of an external chemical (i.e., drugs and alcohol). When applied to SPPA, the external chemical is replaced with an internal pathological reaction to the ‘toxin’ of pornography ⁴⁹. Critics argue that anti-pornists are invested in this affiliation in order to propagate the belief that SPPA is comparable to substance addiction so as to warrant the sanctions they impose ⁸.

In an attempt to create an addiction conceptualization that does not persecute the individual user, researchers convey the individual as not to blame but vulnerable; the behavior (i.e. pornography use) is the ‘bad guy’. Pornography allows the user to satiate his (or her) “need to negate his partner’s identity...which makes (him) feel power, strength and satisfaction... (and is) achieved by controlling, humiliating, and decreasing the worth

of women in general”⁴⁰. The ‘dangers of pornography’ are extended beyond the user, where the man is seen to commit the behavior to the woman’s detriment.

However, pornography use has long been entrenched in morality⁵⁰, and SPPA is no exception. When a disease conceptualization is enveloped in morality, stark contrasts become apparent. For example, Zitzman and Butler⁴² initially refer to “compulsive pornography viewing (as) an impulse-control disorder scalable to addictive proportions” (p. 212) and situate the behavior within a neurophysiological framework. However, they provide a definition of pornography which suggests that pornography use is an act of infidelity, threatens relationship security, and convey this as “pornography use combined with concomitant deception” (p. 210) – omitting the terms ‘compulsive’ and ‘addictive’ in their results and discussion, instead referring to the behavior as “single minded” and “self-indulgent”. Such a premise is likely to lead to a biased conclusion; its value-laden narrative insinuates that “healthy sex cannot be about casual recreation or self-gratification”⁸ (p.138), and negates the physiological addictive components, implicit within a medical framework.

Moreover, using negative outcomes to define SPPA can lead to biases. Levin et al.¹⁹ suggested that a partner using pornography, when the spouse was available for sexual relations, was more indicative of an addiction than if the spouse were out-of-town. This assumes ‘healthy’ individuals should only seek sexual satisfaction with partners and that to do otherwise is not ‘normal’. The qualitative literature has several instances of similar inferences, such that any sexual act committed outside of marital sex is a direct attack on the relationship; pornography use and a healthy relationship are suggested to be mutually exclusive⁴⁰⁻⁴³. Interestingly, only one of the studies made reference to the suggestion that people may watch pornography together to augment their sex lives⁴². Given that moralistic persuasions can risk normal behavior being pathologised²⁹, it is

important to take into account the authors' stance on SPPA when considering their research and its implications.

Only Prause et al.²⁰ stated participants were provided with a definition of pornography addiction. This is important to maximize validity and ensure that participants are responding to the concept the researchers intended. Participants may have a very different notion of what pornography is and what it means to be addicted, compared to other participants or the researchers, and so the validity of the conclusions may be compromised. For example, in one study¹², 69% of participants claimed to have never viewed pornography and were not provided with a definition of pornography or pornography addiction. Therefore, their understanding of pornography and pornography addiction may have been very different to participants who had viewed pornography. Alternatively, those participants may have been reluctant to admit to using pornography due to feeling embarrassed or ashamed. If this was the case, held attitudes and perceptions about pornography and its users may have influenced their answers, which the study did not capture.

The current definitions of SPPA are not adequate or sufficient to develop a valid diagnostic category. For example, some researchers have defined self-perceived pornography addicts as individuals who cannot regulate their emotions, but Prause et al.²⁰ found that self-perceived pornography addicts displayed better emotional regulation than non-addicts. This finding directly contradicts this element of the definition and suggests that current definitions of SPPA are not grounded in robust evidence. Similarly, findings are mixed regarding the relevance of frequency of pornography use in addiction. Relating specifically to treatment, reasons individuals attend for treatment have not yet been discovered because it is unlikely to be just viewing alone which leads to SPPA. Instead, other variables such as avoidance, attitudes, and values may be involved. Before

we can provide appropriate treatment (if intervention is warranted) these other variables should be investigated, as some may be more appropriate targets for treatment than only attempting to stop the behavior (watching pornography).

This review highlighted the difficult positions researchers find themselves in: in order to empirically add to the literature base for investigating SPPA, researchers must draw on existing validated measures and theoretical understandings. However, currently, there is a distinct lack of measures specifically relating to self-perceived *pornography* addiction and so researchers are having to use the next best thing; measures related to broader sexually-related disorders. Difficulties that arise from this mean that assessment tools, such as the SCS, which measure all sexual behaviors, may fail to identify outcomes relating to pornography use specifically, instead results may be unclear and confounded with the addition of broader sexual behaviors.

Correlates and Possible Outcomes of Self-Perceived Pornography Addiction

The studies reviewed examined the possible impact of SPPA on users or their partners using cross-sectional designs, with one study also employing longitudinal research methods. Of course, retrospective cross-sectional designs cannot be used to draw causal conclusions⁵¹ about any associations between SPPA and potential outcomes given that they are measured simultaneously; it may be difficult to ascertain whether individuals perceived their pornography use to be problematic before or after they experienced negative outcomes. Moreover, the longitudinal study used a 2-wave design and a much smaller subset (n=106) of their original sample (n=1215) which substantially limits causality-related analyses and so findings are likely to be tentative at best.

Nine of the ten studies reported evidence that SPPA had a detrimental impact on individuals or their partners. However, a number of important methodological issues must be considered. Firstly, SPPA and its impact were often assessed using a single-item

measure which research suggests are an adequate measure of complex constructs^{4,52}. If an individual's experience is multi-dimensional (i.e. physiological, behavioral, and cognitive), it may be challenging for them to convey this using a single item, and assumptions can be made which omit potentially important information. Secondly, a number of studies used under-defined concepts and definitions, for example, Levin et al.¹⁹ used a single-item measure to assess impaired functioning resulting from SPPA, but did not provide a definition of functioning, and so it is uncertain whether the researchers are measuring the same construct for all participants.

Thirdly, three of the studies^{18,20,21}, suggested that an individual's values and morals associated with their pornography use may have contributed to their perceived pornography addiction, and Prause et al.²⁰ further suggested that conflict with their held values may have led to their distress. Therefore, SPPA may actually result from a conflict in values rather than pornography use *per se*.

Research that examined the impact of SPPA on the partners of self-perceived pornography addicts found that they experienced a number of negative effects such as feelings of betrayal, shame, and isolation. These effects were attributed to the behavior of the self-perceived pornography addict. However, research investigating the effects of pornography use has shown that women who attribute their partners' pornography use to an inadequacy about themselves experience a greater level of distress⁵³. None of the studies reviewed considered the characteristics of the partners of self-perceived pornography addicts, yet it is possible that negative outcomes are affected by factors such as thinking styles and attitudes (e.g. how we perceive information), which may lead to these feelings of inadequacy.

There were also concerns regarding the measures used to make conclusions about the impact of SPPA. Many relied on adapted and non-validated measures that were not

necessarily theoretically driven, and were derived from a non-clinical sample, and thus are difficult to generalize findings. For example, Twohig et al.²¹ used a median cut-off (58%) from a non-clinical sample to determine an arbitrary level of problematic cognitive and behavioral outcomes of SPPA.

Of the six validated measures employed, only two related to SPPA as a distinct behavior (PCES, CPUI-9), with the remaining five related to sexual addiction (SCS; SIS/SES; SDI; CBOSB). Furthermore, half were evaluated using a student sample (CBOSB, CPUI-9, PCES and SIS/SES), only two were evaluated using a representative sample of mixed sexual orientations (heterosexual, homosexual, bisexual and lesbian; PCES and SCS), and only three with more than one gender (male and female) (PCES, SDI and SCS).

Furthermore, all of these measures were self-report instruments which, whilst they did allow for a subjective perspective, are also susceptible to socially-desirable responding, particularly given the topic and as such have been suggested as inappropriate in measuring this population^{20,48}. With this in mind, it is important to note that only Grubbs et al.¹⁸ employed a measure of socially desirable responding (Marlow-Crowne Social Desirability Scale⁵⁴), and found that their results remained significant even after controlling for this.

In relation to the design of the studies, only one employed a longitudinal design with follow-up assessments¹⁸, and only one other noted this as a limitation¹⁹. Instead, despite the cross-sectional limitations, such as difficulty making causal inferences, the majority of studies assumed a 'severe and on-going' causal effect and suggested that marital, financial, and employment problems exist *because of* SPPA. None of the authors considered that individuals may turn to pornography because of pre-existing problems. Therefore, it is unclear as to whether the psychological and behavioral factors said to be

outcomes of SPPA existed prior to the study, or indeed whether people used pornography more when they were unhappy in those areas of their lives.

All of the studies employed heterosexual, Western samples with participants from either America or Italy. Most studies only considered self-perceived pornography addicts to be male, and female participants were considered as partners of male self-perceived pornography addicts. However, findings from two of the reviewed studies indicated that people who perceived their pornography use to be problematic were not a homogenous group^{20,39}. Moreover, Cavaglioni³⁹ found that their sample characteristics differed to those previously cited as 'typical' for this population, as participants did not have previous trauma, high comorbidity, or other addictions. Women are often excluded from samples with researchers citing evidence to suggest they view pornography less frequently than men⁵⁵, however, evidence for this is often based on methodologically poor research. Furthermore, evidence is mixed as to whether frequency is indicative of SPPA¹ and, as evident in the review, even males who use pornography infrequently may report their viewing as problematic. Therefore, this suggests that the homogenous samples often used in research are inadequate to represent what is increasingly evidenced to be a diverse population.

Limitations

The terminology used within this area is value-laden, confusing and jargonistic, and without an agreed conceptualization, authors can choose their own descriptions and as such can differ vastly between papers. Therefore, the terminology searched for in this review may have omitted articles significant to understanding how SPPA is defined and the impact it may or may not have on addicts and others. Moreover, the exclusion of papers detailing 'illegal activities' may be a shortcoming. Some authors may identify illegal activities as potential 'outcomes' of SPPA. Therefore, excluding papers that refer

to these activities may have selectively biased our conclusions about the impact of SPPA. However, we were clear at the outset that we were only interested in pornography considered legal in most of the Western world. Furthermore, the review excluded literature that was not published within a peer-reviewed journal. Whilst justification for this was to ensure a quality threshold, peer-reviewed journals are vulnerable to their own biases ⁵⁶. Therefore future reviews may benefit from including literature from other sources.

Finally, the review found a lack of studies that considered the positive impact of SPPA. Nine of the ten studies focused solely on negative outcomes. This may suggest that there are no positive effects, or perhaps suggests a specific research-focus and publication bias. Therefore, limited conclusions can be drawn regarding any positive impact of SPPA.

Conclusions and Recommendations for Future Research

In summary, there still exists a debate regarding the definition and etiology of SPPA as distinct from SPSA. Indeed, both concepts remain highly controversial. Even for those who are in support of the concept of sexual behavior disorders, there is a lack of consensus regarding their etiology ⁶. As such, the research landscape is shaped by differing theoretical perspectives such as the addiction model ⁷, behavioral addictions ⁴⁹, impulsivity disorders⁵⁷, obsessive-compulsive spectrum disorders ⁵⁸, ‘out-of-control’ excessive sexual behaviors ⁵⁹, and sexually motivated disorders ⁶⁰. Difficulties which may arise when applying an addiction model to self-perceived problematic pornography use include the risk of pathologising behaviors which are legal and consensual, distracting attention from deeper issues such as thinking styles and feelings of shame, and disguising an individual’s choice and responsiveness ⁶¹. Furthermore, without evidence to suggest one theoretical position as superior to another, clinicians may be at risk of recommending

treatment which is in line with their theoretical perspective (or personal biases) but at odds with the motivations driving an individual to engage in particular sexual behaviors. For example, a fundamental difference between impulsive and compulsive sexual behaviors, is that a compulsion is driven by a need to reduce anxiety, whereas an impulsion is an urge which demands immediate gratification ⁶². Therefore different treatment approaches would be needed. Moreover, recommended treatment will likely address the underlying core assumptions but without a unifying framework, clinicians may be unable to access consistent and reliable research pertaining to assessment and treatment ⁶³. With this in mind, future research may focus on constructing and testing a unified operational definition and underlying theoretical framework.

Operationalized variables currently measured to assess the presence of SPPA are inadequate and simplistic, and as a result can be misleading. The same problems exist in regards to operationalizing and measuring impact. Furthermore, the structured instruments used to measure SPPA and impact are often inappropriate. As a result, complex experiences are reduced to simplistic constructs and vital information regarding the mechanisms of SPPA is likely to be missed. Therefore, future research would benefit from including measures related to SPPA, perhaps illuminating new theoretical premises to the conceptualization of SPPA. It may be that what is being defined as SPPA is different to the individuals' experience of pornography addiction.

To this end, future research may benefit from continuing to develop, evaluate, and utilize purpose-developed measures related to pornography use. New measures, such as the multi-dimensional Pornography Craving Questionnaire, (PCQ ⁴ and CPUI-9 ²⁹ have recently been developed, however, as is often the case, the measure was developed using a male student sample and is therefore limited in its generalizability. Therefore, the

literature base would benefit from a measure developed using a representative sample or from validating existing measures using more varied samples.

Currently research relies on homogenous samples, and therefore limits the generalizability of findings. A representative sample would include all genders, with different sexual orientations, and from diverse cultural and ethnic backgrounds. In doing so, research would further our understanding of the behavior of pornography use and SPPA and go further to elucidate its controversies.

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Figures and Tables.

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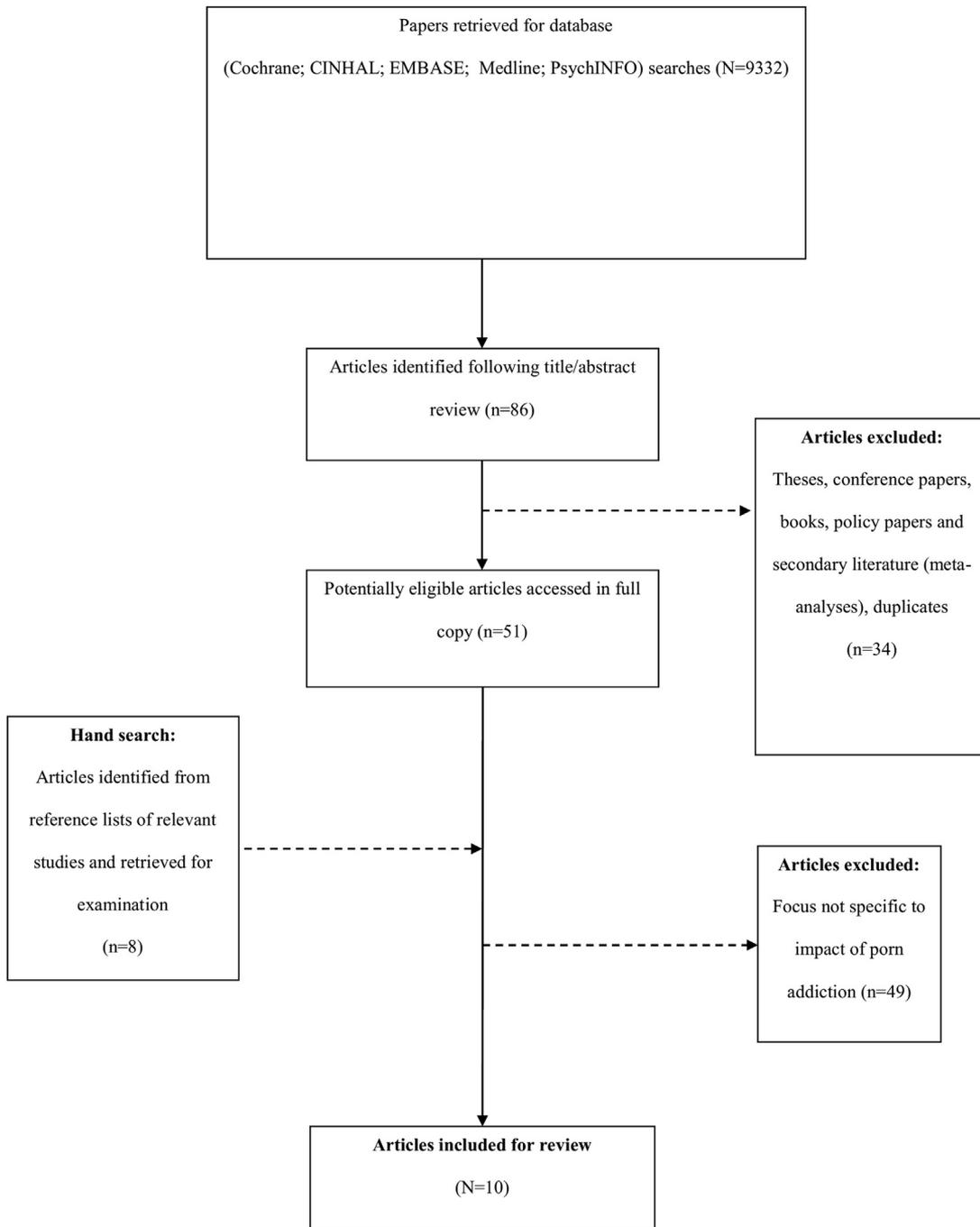


Figure 1. Quorum diagram illustrating the selection method.

Table 1. General characteristics, definitions and impact of studies reporting the impact of SPPA (n = 8)

Study (year), location	Methodology	Sample characteristics	Measurements	Key findings (definition of SPPA and reported impact)
Zitzman and Butler (2009), USA	Qualitative: interviews	Gender: women (N = 14)	SPPA: N/A	Definition
	Analysis: NS	Age: 18–55 y (mean NS)	Impact: N/A	<p>“An impulse control disorder scalable to addictive proportions in some individuals” (p 212)</p> <p>(i) a neurophysiologic and psychological phenomena; (ii) producing an intense, highly preoccupying altered state of conscious awareness and experience; (iii) incapacitating escape from reality and/or escape into fantasy; (iv) which represents a maladaptive coping strategy; (v) due to pairing proximal, visceral reinforcers with distal, more abstract punishments; (vi) thereby setting up a double approach-avoidance dynamic; (vii) with a definable cycle of relapse; (viii) associated with failure or inability to avoid high-risk behavior in the pursuit of the experience (eg, viewing pornography at work); (ix) and producing personal, relationship, and work impairment; (x) leading to repeated failed attempts to quit; (xi) development of physical and/or psychological tolerance or desensitization leading to diminishing returns; (xii) and physical and/or psychological dependency or entrapment with an associated existential experience of powerlessness</p>
		Population: conservative Christian religious affiliation		Impact
				Development of an attachment fault line in the relationship stemming from perceived attachment infidelity, followed by a widening attachment rift arising from wives’ sense of distance and disconnection from their husbands, culminating in attachment estrangement from a sense of being emotionally and psychologically unsafe in the relationship
Twohig et al (2009), USA	Quantitative: online survey	Gender: men (n = 84)*	SPPA	Definition
	Analysis: inferential correlations	Age: 18–56 y (mean = 22)	Self-report frequency of use	“Problematic internet pornography viewing”

(continued)

Table 1. Continued

Study (year), location	Methodology	Sample characteristics	Measurements	Key findings (definition of SPPA and reported impact)
		Population: undergraduate students	SCS	“Currently, there is no agreement on how to describe/conceptualize this behavior when it is problematic, but the similarities in the ‘borrowed’ criteria offer clues to the nature of the problem. For example, the characteristics of the disorders to which it is compared (ie, obsessive compulsive disorder, impulse control, substance use) would suggest that problematic viewing can be triggered by a variety of events or experiences, most likely involves intrusive and persistent thoughts, and is influenced by powerful impulses or urges to view. It is also likely that it is difficult to stop viewing as the viewing is appetitive and can function to regulate unwanted emotion just as substance use or compulsive behaviour can function to regulate unwanted emotion.” (p 224)
			Impact: CBOSB	Impact Measured cognitive problems (eg, worry) and experienced negative consequences (eg, damaged important relationships) due to sexual practices in past year if participants scored above the median on the CBOSB subscales, they were considered to be experiencing problematic outcomes as a result of their behavior
Cavaglion (2009), Italy	Qualitative: 2,000 messages Analysis: narrative and interpretative	Gender: men (N = 302) Age: 18–56 y (mean = 20.6)	SPPA: N/A Impact: N/A	Definition “Thus cyber-porn dependence, as reported by Italian participants in the self-help group, may indicate a maladaptive behaviour which interferes with functioning and is self-defeating, since its outcomes, which are long-lasting and severe, impinge on the continued well-being of the individual and that of the human community of which the individual is a member.” (p 309)
		Population: online self-help groups for “porn addicts”		Impact “Implications for personal well-being, social adaption, work, sex life and family relations.” (p 295)
				Progressive: lack of confidence in ability to manage own life
				Progressive: lack of concentration at work or school
				Progressive: isolation, dissociation
				Breakdown of self-esteem
				Sexual problems
				Shame
Cavaglion and Rashty (2010), Italy	Qualitative: 1,130 messages	Gender: women (N = NS)	SPPA: N/A	Definition

(continued)

Table 1. Continued

Study (year), location	Methodology	Sample characteristics	Measurements	Key findings (definition of SPPA and reported impact)
	Analysis: narrative and interpretative	Age: NS	Impact: N/A	Cyber-porn dependents' as defined by users
		Population: online self-help groups for partners and friends of "porn addicts"		"Porndependents, many of whom can be defined as addicted and excessively busy and preoccupied with their online and offline emotional and sexual activities." (p 277)
				Impact
				"Major patterns of distress primarily related to ambivalent emotions and the formation of an ambiguous loss are discussed as well as their implications on interpersonal, conjugal, and sexual life." (p 270)
				Eroded sense of integrity, inadequacy, mental (trauma), and physical well-being
				Ambiguous loss—not being allowed to move on
				Rejection, guilt, shame and self-esteem
King (2003), USA	Qualitative: online survey	Gender: women (N = 40)	SPPA: N/A	Definition
	Analysis: unknown	Age: 25–55 y (39% 25–35; 34% 36–45; 21% 46–55; <5% >55)	Impact: N/A	None
		Population: wives of pastors addicted to porn		Reference to sexual addiction and compulsion but only referred to the use of porn
				Impact
				Loss (of relationships, debt, and identity)
				Isolation
				Helplessness or hopelessness, confusion, guilt, shame or blame, failure
				Devastating, trauma
Levin et al (2012), USA	Quantitative: online survey	Gender: Males (N = 143)	SPPA: Self-report frequency of use	Definition

(continued)

Table 1. Continued

Study (year), location	Methodology	Sample characteristics	Measurements	Key findings (definition of SPPA and reported impact)
	Analysis: descriptive statistics and 0-order correlations for each variable, hierarchical regression	Age: 20.68 y (mean)	Impact	"One approach has been to conceptualize problematic viewing as a form of addictive behaviour, in which individuals spend an excessive amount of time engaging in compulsive viewing despite negative consequences and attempts to abstain from the activity (Cooper et al, 1999). A distinction can thus be made between more common recreational users, where viewing has minimal costs and can even have positive effects, and the subsample of compulsive users, where viewing can be particularly harmful (Cooper et al, 1999)." (p 169)
		Population: undergraduate students	AAQ-II	Impact
			DASS-21	"Viewing" and "avoidance" related to anxiety, problems (social, family, romantic relationships, values, responsibilities, etc), and poor social functioning
			SFQ	
			self-reported impact	
Pyle and Bridges (2012), USA	Quantitative: experimental	Gender: women (N = 186)	SPPA: self-report frequency of use	Definition
	Analysis: inferential statistics	Age: ≥18 y (mean = 19.04)	Impact: self-reported impact	"... hypersexual disorder, a sexual desire disorder with an impulsivity component and no accompanying paraphilic behaviour ('sex addiction'), is being considered for inclusion in the DSM-V (Kafka, 2010). One subset of this proposed disorder specifies that the disordered behaviour is associated with excessive pornography use ('pornography addiction')." (p 171)
		Population: pastors' wives		"In terms of hypersexual disorder specifically, individuals often engage in sexual behaviours for an excessive amount of time while disregarding the risk for physical or emotional harm to self or others (APA 2010)." (p. 171)
				Impact
				Perceived partner addictive porn use impacts perceived relationship satisfaction = treatment need
Prause et al (2013), USA	Quantitative: experimental	Gender: men and women (N = 50; gender ratios unclear)	SPAA	Definition
	Analysis: inferential statistics	Age: >18 y (mean unclear)	BIS/BAS	VSS-P—those who report problems regulating their consumption of visual sexual stimuli
		Population: Undergraduate Students	SES/SIS	"Men and women who ... reported problems down-regulating their use of VSS (VSS-P)." (p. 106)
			SDI	Impact

(continued)

Table 1. Continued

Study (year), location	Methodology	Sample characteristics	Measurements	Key findings (definition of SPPA and reported impact)
			SCS	Found no impact on emotional regulation
			Impact	
			CBOSB	
			PCES	
			Emotion Ratings Scale	
Grubbs et al	Quantitative: online survey	Gender: study 1: men and women (N = 713; 338 women, 370 men, 5 other/prefer not to say)	SPPA: CPUI-9	Definition
	Analysis: descriptive and inferential statistics	Gender: Study 2: time point 1: men and women (N = 1,215; 619 women, 422 men, 6 other/prefer not to say), time point 2: men and women (N = 106; 39 women, 67 men)	Impact	“Perceived addiction to Internet pornography refers to the propensity of the individual to label the self as addicted to pornography, regardless of the accuracy of such a self-diagnosis.” (p. 2)
		Age: study 1: >18 y (mean unclear); study 2: >18 y (mean unclear)	CES-D	Impact
		Population: Study 1: Adult Internet users in the United States registered with Amazon’s Mechanical Turk (MTurk) workforce database; Study 2: Undergraduate Students	GAD-7	“Perceived addiction to Internet pornography predicted psychological distress above and beyond pornography use itself and other relevant variables (eg, socially desirable responding, neuroticism)” (p. 1). This relationship was found in a longitudinal follow-up with a subset of the sample (n = 106)
			Perceived Stress Scale	
			State Anger Subscale of State-Trait Anger Scale	
			Neuroticism Subscale of the Big Five Inventory	
Bergner and Bridges (2002,) USA		Gender: women (N = NS)	SPPA: N/A	Definition

Table 1. Continued

Study (year), location	Methodology	Sample characteristics	Measurements	Key findings (definition of SPPA and reported impact)
		Age: NS	Impact: N/A	In broad terms, this view is that the sexually compulsive person, whether he or she is involved with pornography, paraphilic acts, relentless cruising, or other activities, is in the business of repairing his or her self-esteem. Sexual acting out, which in many cases is more pronounced after a blow to the individual's self-esteem, is on various accounts an attempt to restore one's sense of personal worth after an insult to the masculine self-image, to recover from explicitly sexual childhood degradations, or to triumph over very damaging childhood sexual indoctrinations.
		Population: online self-help groups for partners of "porn addicts"		<p>Impact</p> <p>New view of the relationship with negative effects relating to themes of exclusivity, sexual desire, intimacy and inclusion, investment in well-being of beloved, understanding, living a lie</p> <p>New view of self with negative effects relating to themes of sexually undesirable, worthless, and weak and stupid</p> <p>New view of partner with negative effects relating to themes of liar, unloving or selfish, inadequate father and husband, sick or bad?: a critical dichotomy</p>

AAQ-II = Acceptance and Action Questionnaire-II; BIS/BAS = Behavioral Inhibition Scale/Behavioral Activation Scale; CBOSB = Cognitive and Behavioral Outcomes Scale; CES-D = Center for Epidemiologic Studies Depression Scale-10; CPUI-9 = Cyber Pornography Use Inventory-9; DASS-21 = Depression Anxiety Stress Scale-21; GAD-7 = Generalized Anxiety Disorder-7; N/A = not applicable; NS = not significant; PCES = Pornography Consumption Effects Scale; SCS = Sexual Compulsivity Scale; SDI = Sexual Desire Inventory; SES/SIS = Sexual Excitation Scale/Sexual Inhibition Scale; SFQ = Social Functioning Questionnaire; SPAA = self-perceived pornography addiction.

*Twohig et al excluded 140 women (mean age = 20.6 years) from all analyses due to "low rate of viewing by female participants."

Table 2. Methodological characteristics of quantitative studies (n=4) adapted from the Joanna Briggs Institute

Study	Clear definition of SPPA*	Participant demographics†	Representative sample‡	Objective and relevant measurements§	Other sources of potential bias
Pyle and Bridges (2012), USA	Yes	Yes	No	No	Vignette design Student sample (only women) Homosexual sample excluded
Twohig et al (2009), USA	Yes	Yes	No	Moderate	Self-selecting sample (online survey) Student sample (only men) SCS items measure broad and general sexual behaviors Arbitrary cutoff score used to demonstrate problematic outcomes
Levin et al (2012), USA	Yes	Yes	No	Moderate	Self-selecting sample (online survey) Student sample (only men) Measurements did not provide operational definition of pornography (the article did) Incomplete sample (omitted without details of subjects' responses) Approximately half the sample did not view porn, small sample of "frequent viewers" (n = 11)
Prause et al (2013), USA	No	Yes	Moderate	Moderate	Experimental design Non-treatment-seeking sample; therefore, possibly difficult to generalize findings to a treatment-seeking sample Self-selecting sample (advertisement) Neutral and sexual films were not counterbalanced; therefore, participants who watched a sexual film first could have remained aroused when watching a neutral film No accepted measurement of level of "coactivation" of positive and negative emotions
Grubbs et al	Yes	Yes	Moderate	Yes	Cross-sectional and longitudinal design Self-selecting sample (online survey) Student sample (men and women) Non-treatment-seeking sample; therefore, possibly difficult to generalize findings to treatment-seeking sample, but did include participants who perceived themselves as addicted to pornography

SCS = Sexual Compulsivity Scale; SPAA = self-perceived pornography addiction.

*Moderate = a partial or incomplete definition of SPPA (or variant of) has been provided; no = no definition of SPPA (or variant of) has been provided; yes = a clear definition of SPPA (or variant of) has been provided.

†Moderate = participant demographics information is limited; no = participant demographics are not reported sufficiently; yes = participant demographics are reported clearly.

‡Moderate = there is limited information regarding whether the sample represents individuals who perceive themselves as addicted to pornography; no = there is not enough information to assess this sufficiently; yes = sample represents individuals who are self-perceived porn addicts.

§Moderate = study made some attempt to use relevant and objective measurements of SPPA and/or impact; no = study did not use relevant and objective measurements of SPPA and/or impact; yes = study used relevant and objective measurements of SPPA and/or impact.

Table 3. Methodological characteristics of qualitative studies (n=4) adapted from Tracy (2010)

Study	Clear definition of porn addiction*	Rich rigor [†]	Credibility [‡]	Sincerity [§]	Resonance	Significant contribution [¶]	Ethical clarity [#]	Meaningful coherence ^{**}
Zitzman and Butler (2009), USA	Yes	Yes	Yes	Moderate	Moderate	Yes	Moderate	Yes
Cavaglion and Rashty (2010), Italy	Moderate	Moderate	Moderate	No	Yes	Yes	Moderate	Yes
Cavaglion (2009), Italy	Moderate	Moderate	Yes	Moderate	Yes	Yes	Moderate	Yes
Bergner and Bridges (2002), USA	Yes	Moderate	Moderate	Moderate	Yes	Yes	Moderate	Yes
King (2003) USA	No	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

*Moderate = partial or incomplete definition self-perceived pornography addiction (or variant of) has been provided; no = no definition of self-perceived pornography addiction (or variant of) has been provided; yes = clear definition of self-perceived pornography addiction (or variant of) has been provided.

†Moderate = study offers limited information regarding its method and analyses; no = study does not provide enough information to assess this sufficiently; yes = study offers appropriate and sufficient descriptions and explanations for its method and analyses.

‡Moderate = research might be trustworthy and credible but there are limited descriptions of the methodology and findings; no = study does not provide enough information to assess this sufficiently; yes = research appears trustworthy and plausible in light of authors' descriptions.

§Moderate = authors offered limited self-reflexivity and transparency regarding their biases and challenges; no = authors do not provide enough information to assess this sufficiently; yes = authors were self-reflexive and transparent regarding their biases and challenges.

||Moderate = research provides limited insight and impact to the reader; no = study does not provide enough information to assess this sufficiently; yes = research provides insight and findings that affect the reader.

¶Moderate = extension of knowledge in this area is limited; no = study does not extend knowledge in this area; yes = research extends knowledge in this research area.

#Moderate = there is limited consideration of the ethical implications of the authors' practices and findings; no = authors did not provide enough information to assess this sufficiently; yes = authors considered the ethical implications of their practices and findings.

**Moderate = research attempted to interconnect methods with stated goals; no = study did not provide enough information to assess this sufficiently; yes = research used methods coherently to achieve its stated goals.