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SEX ADDICTION (S KRAUS, SECTION EDITOR)

Problematic and Non-problematic Pornography Use and Compulsive Sexual Behaviors Among Understudied Populations: Children and Adolescents

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Abstract

Purpose of Review The aim of the current review is to define problematic and non-problematic pornography use, and to show that this definition is dependent on the perspective that one adopts—mental health, feminist, and/or religious.

Recent Findings The definition of problematic and non-problematic pornography use among adolescents is highly dependent on perspective. Pornography use is not reliably linked with mental health problems. However, pornography use is linked with objectification processes, sexual permissiveness, and risky sexual behavior. The current review suggests that to define pornography use as problematic, we need to assess whether or not it relates to compulsive sexual behavior disorder (CSBD) but when treating CSBD, we must consider the specific perspective that the patient holds (religious, feminine, and/or mental health).

Summary There is a need for an objective definition of problematic pornography use—one that could be found in the framework of CSBD. Recent studies indicate the potential of using CSBD as an indicator of problematic pornography use for both basic understanding and therapeutic approaches.

Keywords Pornographic · Compulsive sexual behaviors · Adolescence · Problematic sexual behavior

Introduction

The internet allows instant access to a wide variety of contents among those are sexual contents. Research has indicated that approximately half of all adolescents aged 9–16 are exposed to pornography (e.g., [1] in Australia, [2] in the UK, and [3–5] in the USA). Several lines of studies that were conducted among adults have raised the existence of possible problematic effects for pornography use by revealing the links between exposure to pornography and the adoption of perceptions that equate normative sexual behavior with aggressive, risky sex, and non-relational sex [6–11]. In addition, research has indicated that pornography often present women and men as sex objects [12] and viewers of pornography tend to adopt such views [13••]. Consumption of pornography was also associated with more permissive sexual attitudes (e.g., [14, 15]) and tended to be linked with earlier occurrence of sexual intercourse (e.g., [16]), greater experience with casual sex behavior (e.g., [17]), and more sexual aggression (e.g., [18], both in terms of perpetration (i.e., sexually harassing a peer or forcing someone to have sex; e.g., [19]; sexual dominance, acceptance of rape myth [18]); and victimization, e.g., [20]).

In contrast to these studies, other works have not found any adverse consequences for pornography use [21–23] and even raise the possibility of positive effects associated with pornography viewing. For example, pornography use was linked with exploration of sexual interests and new sexual practices, understanding one's own sexual identity, and more accurate understanding of men's and women's anatomy, physiology, and sexual behavior [24, 25]. In the current paper, I argue that the mere definition of pornography use as problematic or non-problematic, specifically among adolescents, is dependent on the perspective of those who define it. One viewpoint is the mental health perspective, which defines problematic pornography use as a behavior that disrupts functioning and relates to addictive and uncontrollable behavior (such as compulsive sexual behavior disorder [CSBD]; [26, 27••]). A second perspective is the feminine, gender-related perspective, which defines problematic pornography use as one that promote

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objectification of women and/or men [13••] even if it does not damage functioning or relate to addictive and uncontrollable behavior. Pornography that does not promote objectification will be defined as non-problematic [28]. A third perspective is the cultural, religious perspective, which could define (at the extreme) any type of pornography use as problematic because it opposes morality and any behavior that contrast morality (regardless of functioning problems or objectification processes) is problematic [29].

In the current paper, I advocate the former definition and suggest that the definition of a problematic behavior should not be based on subjective values and perceptions but based on more objective measures such as whether or not a behavior negatively impacts one's functioning and is uncontrollable and/or addictive. Specifically, I would suggest that to define pornography use as problematic, we first need to assess whether or not it relates to CSBD but when treating CSBD, we must consider the specific perspective that the patient holds (religious, feminine, and/or mental health). While doing so, I will review research on pornography use among adolescents and the scarce research linking pornography use with CSBD.

Normative Sexual Development and Exposure to Pornography

Human beings are sexual and capable of sexual responses from childhood [30]. Adolescence marks the onset of considerable changes in sexual and reproductive maturity that coincide with significant changes in cognitive, emotional, and social functioning. Previous research has indicated that the progression of sexual events among heterosexual adolescents follows a fairly consistent sequence from kissing and holding hands to penile–vaginal intercourse, followed by less common variations, such as anal sex [31]. During this developmental phase, one of the most common sexual activity is consumption of pornography, either through intentional or accidental means [32].

Pornography is defined as professionally produced or consumer-generated videos or still pictures intended to sexually arouse viewers [33]. Pornography usually portrays a variety of sexual activities such as masturbation, oral sex, and vaginal and anal intercourse [34, 35]. In Australia, just under half (44%) of children aged 9–16 had encountered sexual images in the last month. Of these, 16% had seen images of someone having sex and 17% of someone's genitals [1]. Images of this nature were more likely to have been seen by adolescents rather than younger children. In the UK, 53% of 11–16 years old have seen online pornography at least once, with the vast majority having viewed pornography before the age of 14 [2]. In the USA, 20 to 30% of children ages 10–12 years have reported that they have been exposed to pornography [3–5].

Problematic and Non-problematic Pornography Use Among Adolescents

Research on pornography use among adolescents is scarce. Mattebo and colleagues [36] conducted a prospective study on 16-year-old adolescents and examined whether consumption of pornography at age 16 predicted psychosomatic and depressive symptoms at age 18. They found that adjusting for gender, single-parenthood, immigration, and study program (university preparation, vocational), consumption of pornography at age 16 was associated with more psychosomatic symptoms at age 18. Efrati and Amichai-Hamburger [37] also found that consumption of pornography among adolescents aged 14–18 was linked with higher perceived loneliness. In contrast, most studies on adolescents found no association between pornography use and mental health problems and/or well-being, or even found beneficial effects. For example, using a prospective cohort of 775 girls and 514 boys (aged 15 to18 at baseline; Prospective Biopsychosocial Study of the Effects of Sexually Explicit Material on Young People's Sexual Socialization and Health, PROBIOPS), Štulhofer and colleagues [21–23] found no association between the frequency of pornography use (ranging from never to several times a day) and sexual satisfaction and/or psychological well-being. Using a retrospective design, Willoughby, Young-Petersen, and Leonhardt [38] have found no differences in depressive symptoms and life satisfaction between people with different pornography use during adolescence (engagers, abstainers, experimenters [those who use pornography for a while and then cease). Mattebo and colleagues [36] also found that more frequent consumption of pornography at age 16 was linked with fewer depressive symptoms at age 18. In sum, most studies did not find adverse mental health problems among adolescents who consume pornography even regularly, and so in terms of mental health problems, pornography use among adolescents seems, on average, as non-problematic.

In contrast, the link between pornography use and sexual objectification of women among adolescents is more consistent. For example, Vandenbosch and van Oosten [13••] examined individuals aged 13–25 and found that pornography consumption in one point of time was linked with perceiving women as sex objects (e.g., an attractive woman should expect sexual advances) 2 months later. Similar results were obtained by Peter and Valkenburg [39] who used a prospective cohort of adolescents aged 13–18 (at baseline) and found that more frequent consumption of pornography in one point of time was linked with perceiving women as sex objects 1 year later. Of note, perceiving women as sex objects was also linked with an increase in pornography consumption. Ward, Vandenbosch, and Eggermont [40] have also found that consumption of pornography not only predicted objectification of women across time (sexualizing women's buttocks, breasts, belly, and body size), but also that objectification of women

affected adolescents' courtship strategies (e.g., girls often say "no" but really mean "yes"). Peter and Valkenburg [41] in a cross-sectional cohort of adolescents aged 13–18 corroborated these results. Therefore, I contend that in terms of objectification processes, specifically regarding women, pornography use among adolescents could, on average, be defined as problematic.

Finally, research on pornography use among adolescents has found links to actual sexual behavior. Collins and colleagues [42] conducted a longitudinal study on 1792 adolescents aged 12–17 years and found that exposure to sexual content on TV (other than pornography) was linked with higher likelihood to initiate vaginal intercourse and progress to more advanced noncoital sexual activities (e.g., oral sex) during the subsequent year. Chandra and colleagues [43] have also found in a national longitudinal survey on adolescents aged 12–17 that exposure to sexual content on TV (other than pornography) was linked with higher likelihood of pregnancy. Brown and L'Engle [44] conducted a longitudinal study on 967 adolescents aged 13–14 years and found that exposure to pornography per se was linked with more permissive personal sexual norms (e.g., "sex before marriage is OK if you are in love"), more sexual harassment perpetrations (e.g., "grabbed or pulled at a schoolmate's clothing in a sexual way"), and higher likelihood of oral sex and/or sexual intercourse 2 years later. In another prospective study on 296 girls aged 14–16, Mass, Bray, and Noll [45] found that those who consume more pornography reported more HIV risk behaviors (e.g., had intercourse without a condom) than those who did not and that this link was significant even after controlling for maltreatment history. Finally, in a cross-sectional study on 433 adolescents aged 12–22, Braun-Courville and Rojas [46] found similar results such that exposure to pornography was linked with more lifetime sexual partners, higher likelihood to have sex with more than one partner in the past 3 months, use alcohol and/or drugs in the last sexual encounter, have anal sex, and have higher score on the high-risk sexual behavior index (i.e., based on the Center for Disease Control and Prevention Youth Risk Behavior Surveillance System). In sum, pornography use among adolescents may be linked, on average, with more permissive sexual behavior and riskier sexual activities.

Summarizing the associations between pornography use and possible problematic and non-problematic outcomes among adolescents reveals that pornography use is not reliably linked with mental health problems. However, pornography use may be linked with objectification processes, sexual permissiveness, and risky sexual behavior among adolescents. Therefore, is pornography use problematic or not, and to whom? I contend that the answer depends on the perspective that each one of us adopts.

Different Perspectives on Pornography Use Among Adolescents

One common perspective for defining pornography use as problematic (and/or as non-problematic) is the religiosity perspective. Religiosity imposes explicit moral standards for thinking and behaving that are inculcated by influential authority figures (e.g., the Jewish rabbi and/or a priest), and includes the possibility of severe punishment (e.g., banishment and death). The 10th commandment from the Bible, for example, forbids coveting (i.e., wishing to have) another person's wife (Exodus, 20:17; "You shall not covet your neighbor's wife…"), masturbation (Genesis, 38: 9–10; "But Onan, knowing that the seed would not count as his, let it go to waste… what he did was displeasing to the LORD, and He took his life"), and specifically states "ye go not about after your own heart and your own eyes, after which ye use to go astray" (Numbers, 15: 39). Therefore, for a religious adolescent, any type of pornography use is problematic, regardless of its consequences. Grubbs and colleagues [29] acknowledged that perception and suggested the *pornography problems due to moral incongruence* (PPMI) model according to which some people experience problems related to pornography use because of misalignment between moral values and actual behavior. They argue that "pornography use might lead to problems in users' lives, even in the absence of dysregulation, compulsivity, or addiction" ([29]; p. 461). Research has indicated that although pornography consumption increases during adolescence, this increase is *less* prominent among religious individuals than secular ones [47]. Of note, Efrati [48, 49] found that the level of compulsive sexual behavior among religious adolescents is higher than among secular ones, yet this level was not examined in relation to pornography use. The religious perspective of pornography use and its definition as problematic (or not) is highly subjective and dependent on specific religious commandments. In keeping with Grubbs and colleagues [29], I argue that moral incongruence is a strong predictor for possible problematic outcomes for pornography use; yet, I propose that pornography use is problematic only if it hinders one's functioning, evokes distress, and/or manifest itself in compulsive sexual behavior disorder in accordance with ICD-11 [27••]. Efrati [48, 49] highlighted the possibility that religious adolescents might be at higher risk for developing CSBD than secular ones, but the vast majority of religious adolescents do not have compulsive sexual behavior disorder. Therefore, although several religious adolescents consume pornography, and although they uphold religious values, most of them would not suffer from the negative consequences of pornography use (i.e., compulsive sexual behavior disorder) and so most adolescents would not seek sexual-related treatment. In contrast, I do contend that when treating adolescents with CSBD, one must take the religious perspective (and/or any other

cultural perspective) into account and here Grubbs and colleagues' [29] model is highly relevant; one key component in the therapeutic process could be the need to address the moral incongruence that religious adolescents might feel.

Recently, Kraus and Sweeney [50] suggested a second perspective by which pornography should be deemed as problematic or non-problematic—the mental health perspective. They suggested that one ought to objectively determine the degree to which a person can control his or her sexual behavior—i.e., whether a person is distressed because of numerous failed efforts to avoid a behavior (such as pornography use), continue the behavior despite deriving little pleasure from it, and experience negative and/or adverse consequences as a result. To do so, one should determine whether a person is suffering from compulsive sexual behavior. Although this behavior is well-defined among adults (e.g., ICD-11), its definition is more obscure among adolescents.

Compulsive Sexual Behavior

The World Health Organization (WHO), in the 11th edition of the International Classification of Diseases (ICD-11), has included compulsive sexual behavior as a disorder (now called CSBD; classification number 6C72). CSBD is an impulse control disorder characterized by a repetitive and intense preoccupation with sexual fantasies, urges, and behaviors, leading to clinically significant distress or impairment in social and occupational functioning and to other adverse consequences (ICD-11; [51•, 52, 53•]). Professionals, however, are still grappling with the definition of excess sexual behavior during adolescence and specifically with CSBD [54, 55]. Adelson [54, 55] and De Crisce [56] were the first to address hypersexuality among adolescents (a term often associated with CSBD). Adelson and colleagues [54] argued that "in defining hypersexuality [among adolescents], it is crucial to acknowledge the challenges to establishing norms of child and adolescent sexual development and the complexity of variables that influence it." (p. 483). They defined hypersexuality as (1) a marked increase in sexual behavior as compared with others in similar age, sex, and gender, (2) which causes clinically significant distress or dysfunction, and (3) that is marked by compulsive, impulsive, and/or inappropriate sexual behavior. De Crisce [56] suggested to perceive hypersexuality among adolescents as a behavioral addiction and to use Kafka's definition for hypersexuality among adults when assessing hypersexuality among adolescents.

Recently, Efrati and Mikulincer [57••] tried to empirically identified facets of CSB among adolescents and to examine whether they are in keeping with the definition of CSBD among adults and that with findings among adults (e.g., [58, 59•, 60, 61]). They identified the following four facets that also marked CSBD among adults: (1) *unwanted consequences because of sexual fantasies*—how sexual fantasies, urges, and behaviors carry harm to oneself [62] and/or to one's close others such as family members [63], colleagues, and peers [64]; (2) *lack of behavioral control*—constant uncontrolled engagement with sexual fantasies, urges, and behaviors with numerous unsuccessful efforts to significantly reduce repetitive sexual behavior; (3) *negative affect*—negative feelings and distress accompanied by guilt and shame because of sexual fantasies, urges, and behaviors; and (4) *affect regulation*—escape to sexual fantasies, pornography, and sexual behaviors because of pain, stress, and distress.

Later, Efrati and Mikulincer [57••] described two aspects of CSB—individual-based and partnered. Individual-based CSB refers to inner conflicts of individuals who constantly engage in sexual fantasies, compulsive sexual thoughts, and masturbation. Partnered CSB includes unfulfilling interpersonal sexual conquests and repeated infidelity and/or preoccupation with sexual activity within romantic relationships that is driven by a need for escapism and source of solace and not with intimacy. Among adolescents, individual-based CSB is more prevalent than partnered CSB as most of the experiences during adolescence do not include partnered (dyadic) intimacy [65].

To date, only a few studies examined CSB among adolescence. Efrati [66] examine among 310 high school adolescents whether CSB is a unique psychological phenomenon or whether it is a mere reflection of more global types of psychopathology constructs, such as mood disorders. Using five different models, he found that CSB is an independent disorder. Later, Efrati and Dannon [67] tried to distinguish between normative sexual behavior and compulsive sexual behavior among adolescents. They found that adolescents with clinical CSB (using the clinical cutoff of the I-CSB measure; [57••]) had more severe psychopathologies than nonclinical ones and were unable to utilize resilience factors (i.e., low negative affectivity, high effortful control, and/or attachment security). Their conclusions were that low and moderate levels of CSB seem to be part of the normal development of sexuality among adolescents; clinical CSB, however, seems to be a deviation from this normal development.

Finally, Efrati and Gola [68] tried to detect different profiles of CSB among adolescents and found the following three profiles: abstainers (those with low levels in all CSB clusters and who are not sexually active), sexual fantasizers (those high in lack of control relating to sexual fantasies and sex-related negative affect, and low in thoughts on unwanted consequences and affect regulation), and individuals with CSB (those high in all clusters). Adolescents with CSB had a profile marked by external locus of control, anxious attachment, greater loneliness, higher frequency of pornography use, and more sex-related online activities than the other groups.

Table 1 Summary of empirical studies examining problematic pornography use and CSB among adolescents

Author(s) (year published)	Topic	Sample characteristic	Sample size	Methods	Measure
Efrati [66]	CSB	Israel	310 high school students (183 boys, 127 girls) age 16 to 18 years (M = 16.94, SD = 0.65)	Cross-sectional	I-CSB
Efrati [69]	CSB	Israel	274 adolescents (131 boys and 143 girls), aged 14–18 (M = 16.84, SD = 1.29)	Cross-sectional	I-CSB
Efrati [48]	CSB	Israel	Study 1: 661 Israeli adolescents (329 boys and 332 girls), ages 14 to 18 (M = 16.84, SD = 1.29) Study 2: 522 Israeli adolescents (227 boys and 295 girls), ages 14 to 18 (M = 16.84, SD = 1.29) Study 3: 317 Israeli adolescents (157 boys and 160 girls), ages 14 to 18 (M = 17.84, SD = 4.23)	Cross-sectional	I-CSB
Efrati and Dannon [67]	CSB	Israel	311 high school students (184 males and 127 females) aged 16–18 years (mean = 16.94 years, SD = 0.65)	Cross-sectional	I-CSB
Efrati and Gola [68]	CSB	Israel	Study 1: 1182 Israeli school students, consisting of 500 boys (42.30%) and 682 girls (57.70%) who aged 14–18 years (M = 16.68, SD = 1.54). Study 2: 618 Israeli adolescents (341 boys and 277girls), aged 14–18 years (M = 16.69, SD = 1.16)	Cross-sectional	I-CSB
Efrati and Gola [70]	CSB	Israel	275 Israeli families (N = 825 individuals), [triad of mothers (age = 30–63 years, M = 45.48, SD = 5.46), fathers (age = 36–83 years, M = 48.33, SD = 6.63), and one adolescent (48.2% boys, 51.1% girls; age = 14–18 years, M = 16.23, SD = 1.18)]	Cross-sectional	I-CSB
To et al. [71]	CSB	Hong Kong	144 young Chinese males in Hong Kong. The mean age of the participants was 15.99 (SD = 2.59).	Cross-sectional	Sexual Compulsivity Scale
Dawson et al. [72]	PPU	Croatian	594 male Croatian high school sophomore students (M age at baseline = 15.8 years, SD = 0.52)	Longitudinal	Sexual aggression
Bonino et al. [19]	PPU	Italy	804 adolescents between the ages of 14 and 19 years (39% aged 14–15 and 61% aged 16–19)	Cross-sectional	Sexual violence
Bekele et al. [20]	PPU	Ethiopia	764 female secondary school students from eastern Ethiopia	Cross-sectional	Sexual violence
Doornwaard et al. [73]	PPU	Dutch	331 Dutch boys (M age = 15.16 years, range 11–17)	Longitudinal	Compulsive use of sexually explicit material
Mattebo et al. [36]	PPU	Sweden	462 Sweden senior high school classes, 224 boys (47%) and 238 girls (60%) participated	Longitudinal	Psychosomatic and depressive symptoms
Mass et al. [45]	PPU	USA	296 female adolescents (49% maltreated; aged 14–16 years)	Longitudinal	HIV risk and sexual violence
Alexandraki et al. [74]	PPU	Greek	648 adolescents, wave 1: mean age = 15.75 years, SD = 0.57 years, boys = 301 (46.4%), girls = 347 (53.6%). Wave 2: mean age = 17.75 years, SD = 0.54 years, boys = 181 (49.9%), girls = 182 (50.1%)	Longitudinal	Internet pornography viewing (IPV) and Internet Addiction Test (IAT)
Milas et al. [22]	PPU	Croatian	Panel sample of 775 female and 514 male Croatian high school students (M age at baseline = 15.9 years, SD = 0.52)	Longitudinal	Pornography Use and Sexual Satisfaction
Borgogna et al. [75]	PPU	USA	520 men, age (M = 25.46, SD = 11.99), age of first pornography viewing (M = 13.39, SD = 2.92)	Cross-sectional	Problematic Pornography Use Scale

Conclusions and Future Directions

To draw accurate conclusion and direct future research on problematic pornography use among adolescents, I first gathered all studies on problematic pornography use and compulsive sexual behavior and the links with risky sexual behavior (sexual aggression and violence, HIV risk) and psychopathology among adolescents. To do so, I took studies from Peter and Valkenburg's [35] review and use PsycINFO and google scholar to locate studies published after Peter and Valkenburg's review. Overall, I found 16 papers on problematic pornography use and compulsive sexual behavior among adolescents (see Table 1).

First, although recent studies are promising, much research is needed to establish a clear definition of CSBD and/or problematic pornography use among adolescents, and accordingly to develop clear and robustly used measures to estimate these phenomena. For example, most studies on CSBD among adolescents used the I-CSB scale [57••], which is based on the definition of CSBD in ICD-11 in adults. Problematic pornography use was defined and measured differently in most studies. I recommend that *problematic* pornography use should be defined as such if a person is suffering from CSBD. If one is not meeting the diagnostic criteria for CSBD, then the study is on the outcomes of pornography use (such as moral incongruence and objectification) but the behavior itself (i.e., the use of pornography) should not be defined as problematic by researchers of pornography use.

Second, all studies on CSBD among adolescents used cross-sectional design and almost all were conducted on one culture (Israel; one study was conducted in Hong Kong). Studies on problematic pornography use are more diverse such that most used longitudinal design (6 out of 9 studies), and were conducted in various cultures (East and West Europe, USA, Ethiopia). Because in the current paper I recommended to define pornography use as problematic only if one suffers from CSBD, longitudinal and cross-cultural research projects are warranted to understand the phenomenon in-depth.

Third, aside from the use of longitudinal studies to establish the link between problematic pornography use and CSBD, these studies are needed to detect the bidirectional links between problematic pornography use and CSBD and development of personality, cognitive tendencies, and psychopathology. For example, it might be the case that certain personality dispositions pre-dispose a person to develop problematic pornography use and CSBD and/or that problematic pornography use and CSBD promote the development of certain personality dispositions. Deciphering these links would allow the development of novel interventions to prevent and treat problematic pornography use and CSBD.

Finally, longitudinal studies are needed to carefully distinguish between the natural sexual development during adolescence and development that deviates toward problematic pornography use and CSBD (also see [76]). In such studies, triggers, risk, and resilience factors could be revealed that would direct the development of novel interventions to prevent and treat problematic pornography use and CSBD even further.

Compliance with Ethical Standards

Conflict of Interest The author declares that there is no conflict of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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