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Pornography Use and Violence: A Systematic Review of the Last 20 Years

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Abstract

Pornography use is one of the factors that has been proposed to be associated with violence. We aimed to explore the literature of the last 20 years, with the objective of understanding the possible association between pornography use and violence. Two electronic databases (PsycINFO/PsycARTICLES and PubMed/Medline) were used. We included members of the general population, of any sex, age, and sexual orientation, who were direct users of pornography or have a partner who uses pornography. Only studies with pornography use and violence assessments, and that specifically evaluated the association between both factors, were included. In all, 59 studies met the inclusion criteria. An association between pornography use and nonsexual violence seems to exist, although the causality of this association remains unclear. Heterogeneity of results exists regarding the association between pornography use and intimate partner sexual assault and coercion: some studies have failed to demonstrate this association, while others have observed it partially or significantly. Contradictory results have also been observed when examining the association between pornography use, rape myths, and other beliefs/attitudes. The main limitation is the heterogeneity in the conceptualization of both constructs (pornography and violence). Multiple theoretical models, methodologies, and categorizations have been used in the studies, complicating the comparability of the findings. The association between different types of violence and pornography use requires further in-depth research to better understand the specific link between both constructs.

CRD42021259874.

Keywords

porn, pornography, violence, sexual coercion, sexual assault, sexual abuse

Introduction

Violence and sexual violence have become a major public health issues worldwide (Krahé, 2018). The internet and the technological revolution have enabled the development of new types of violence (Henry et al., 2020). On the other hand, the easy access to electronic devices has allowed the consumption of pornography to become a common practice among both young people and adults (Farré et al., 2020; Rothman et al., 2021). Some authors state that pornography represents different forms of violence against women and sexual violence (Miller & McBain, 2022; Vera-Gray et al., 2021) and that pornography use may be related to different types of violence (Tarzia & Tyler, 2021; Willis et al., 2022). However, the evaluation of these associations first requires the establishment of a conceptual and theoretical framework, included below.

Violence Conceptualization

The World Health Organization defines violence as “the intentional use of physical force or power, threatened or

actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation” (World Health Assembly, 49, 1996). However, multiple theoretical classifications have been made of the different types of violence. For example, it has been proposed that the violence may be physical, sexual, or psychological, or in the form of deprivation/neglect, and that these types of violence may occur at a self-directed, interpersonal (family/partner, community), or collective (social, political, economic) level (Krug et al., 2002).

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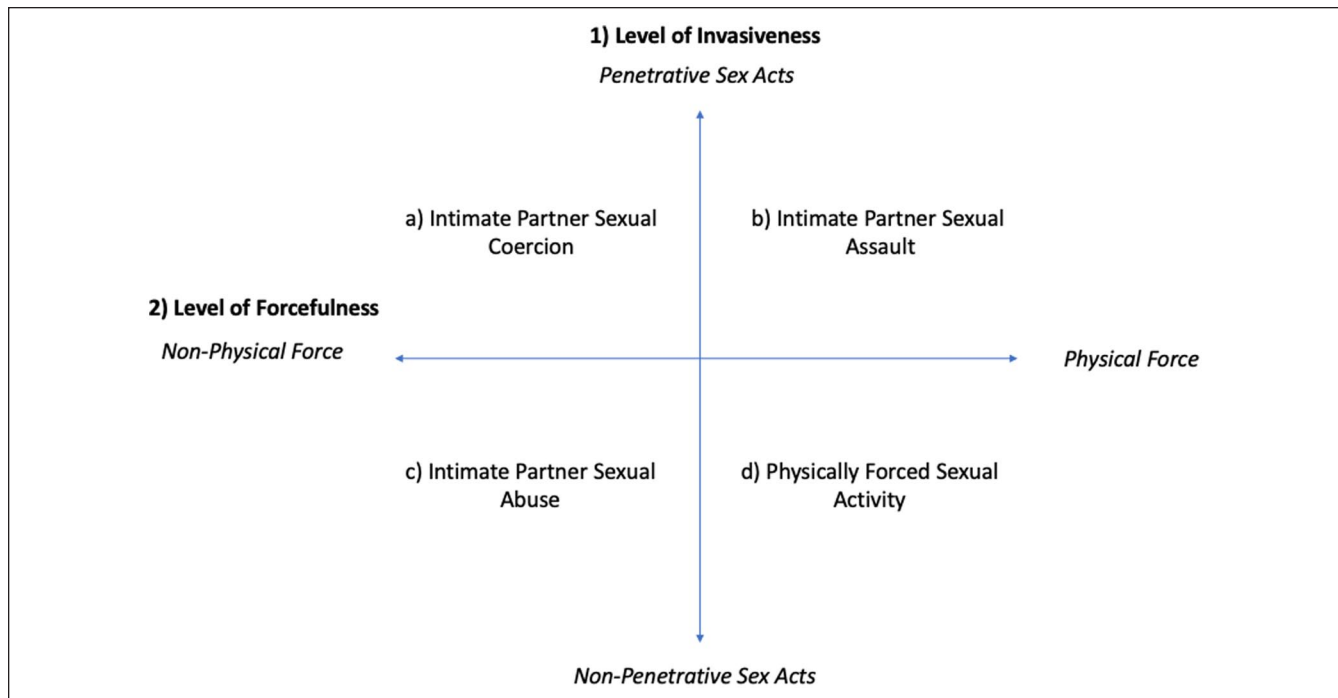


Figure 1. Typology of intimate partner sexual violence.

Source. Adapted from Bagwell-Gray et al. (2015).

Considering the heterogeneity of theoretical models of violence, this systematic review is partially focused on the taxonomy of intimate partner sexual violence proposed by Bagwell-Gray et al. (2015). This theoretical model suggests that the different types of intimate partner sexual violence may be categorized into four quadrants. These quadrants would be defined by two central axes regarding two core characteristics: (1) the level of invasiveness, according to “how invasive the type of sexually abusive act is, ranging from vaginal, oral, or anal penetration at the high end of invasive acts to unwanted touching at the low end of noninvasive acts” and (2) the level of forcefulness, “the degree of physical force used, ranging from physical violence at the high end of physical force to nonphysical manipulation at the low end of physical force.” The four quadrants have been categorized as (a) intimate partner sexual coercion (high invasiveness and low force), understood as “the use of non-physical, controlling, degrading, and manipulative tactics to obtain, or attempt to obtain, unwanted oral, vaginal, or anal intercourse, including forced penetration and sex with objects”; (b) intimate partner sexual assault (high invasiveness and high force), understood as “the use of physical violence or the threat of physical violence to obtain, or attempt to obtain, unwanted oral, vaginal, or anal intercourse, including forced penetration and sex with objects”; (c) intimate partner sexual abuse (low invasiveness and low force), defined as “the use of manipulative, psychologically abusive tactics to keep an intimate partner in submissive positions of

power; strategies include sexual degradation, noncontact unwanted sexual experiences, and reproductive and sexual control”; and (d) intimate partner forced sexual activity (low invasiveness and high force), understood as “unwanted sexual experiences involving touch but not sexual penetration, such as being kissed in a sexual way, or having sexual body parts fondled or grabbed” (Figure 1).

Pornography conceptualization

The conceptualization of the term “pornography” has not been without controversy. Multiple definitions of pornography have been proposed, although a recent Delphi Panel study has noted that the definition “sexually explicit materials intended to arouse” seems to hold some consensus among experts (McKee et al., 2020).

The emergence of the internet has promoted the use of free sexually explicit content (Cooper, 1998). It may have increased competition among producers, who would seek to generate more extreme sexually explicit content to encompass the maximum possible range of sexual desires of consumers (Carrotte et al., 2020). In order to corroborate this, Carrotte et al. (2020) systematically analyzed 23 studies that conducted a content analysis of video pornography. The authors found that “minor forms of aggression” (e.g., spanking), as well as unequal heterosexual sexual relations (in which there is often male domination of women), were relatively common, while the presence of extreme violence was rare.

Association between violence and pornography use

Different theoretical frameworks, such as cultivation theory (Gerbner et al., 1994), have advised that individuals' perceptions of reality can be influenced and/or altered by the media. In the specific case of pornography, it has been suggested that it may promote imitation behaviors, as well as observational learning and desensitization (Anderson et al., 2003; Rodenhizer & Edwards, 2019).

In this vein, pornography use is one of the factors that has been proposed to be associated with violence (Tarzia & Tyler, 2021). For decades, some authors have argued that sexually explicit content generates and reinforces sexist stereotypes, as well as the perception that violence, specifically against women, is permissible (Collins, 1993; Itzin, 1992; Russell, 1993; Willis et al., 2022). The belief that pornography objectifies and dehumanizes through scenes of abuse and violence underlies the conceptualization of pornography as a facilitator of violence (Willis et al., 2022).

The association between pornography and violence was tested during the 1980s by several laboratory studies that exposed adult men to sexually violent content (Fisher et al., 2013). It was observed that violent pornography use increased the acceptance of violence toward women, as well as fantasies about rape and the belief that women enjoy being raped (Donnerstein & Berkowitz, 1981; Malamuth, 1981, 1985; Malamuth & Check, 1981). However, the limited generalizability of these findings to contexts outside the laboratory, as well as inconsistent results and the difficulty of replicating them, generated controversy about the existence of a causal association between pornography use and violence (Ferguson & Hartley, 2009; Fisher et al., 2013).

In addition to laboratory studies, research with sex offenders and victims of violence was conducted to determine this association. However, this was also surrounded by great controversy, since it was extremely complex to determine whether the tendency toward sexual aggression was prior or subsequent to pornography use, and the retrospective design of these studies was subject to biases (Fukui & Westmore, 1994). Despite having found partial results that may confirm this association, other studies with statistical power indicate the opposite, and there is a general criticism of the methodology used in these articles and a lack of sufficient empirical evidence for this association (DeKeseredy, 2016; Ferguson & Hartley, 2022).

In addition to the interest in resolving these controversies regarding the association between pornography use and violence, there has been a need to explore this association in the context of the changes brought about by the advent of the internet (DeKeseredy, 2016). More specifically, the access to the pornographic contents through the internet and the frequency of use of these sexually explicit materials have changed substantially in recent decades (Farré et al., 2020; Grubbs & Kraus, 2021). Therefore, it is essential to systematize existing

studies to date to deepen the association between pornography and violence to facilitate a possible future consensus. In the context of this research interest in understanding the possible effects of pornography on violence, this investigation is presented. The present systematic review aimed to thoroughly explore the literature of the last 20 years, with the objective of understanding the possible association between pornography use and violence.

Methods

Protocol and Registration

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (Moher et al., 2009). It was registered in the international prospective register of systematic reviews of the National Institute for Health Research (PROSPERO; registration number: CRD42021259874; registration date: 9 July 2021; registration website: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42021259874).

Eligibility Criteria

Study characteristics. We included the following: (A) Population: (1) human beings, (2) general population, (3) any sexual orientation, (4) any sex, (5) any age (adults and adolescents), (6) being a direct user of pornography or having a partner who uses pornography; (B) Assessment: (1) articles that include standardized pornography use assessment (e.g., items or self-reported psychometric instruments), (2) articles that include violence assessment (e.g., items or self-reported psychometric instruments); and (C) Articles specifically evaluating the association between pornography use and any manifestation of violence.

Exclusion criteria included the following: (A) Population: (1) clinical samples or specific populations, such as offenders, regular prostitution users, and abused women; (2) non-pornography users or not having a partner who uses pornography; (3) child pornography users; (B) Assessment: (1) articles that do not include standardized measures of pornography use, (2) articles that do not include standardized measures of violence, (3) studies that use the term "erotic content," rather than pornography; and (C) Articles that do not specifically evaluate the association between pornography use and any violence. Those articles focused on analyzing "rough sex" in the context of a couple were discarded, since they did not specify whether there was consent from both partners.

Report characteristics. We included the following: (1) in-press peer-reviewed articles, (2) written in English, (3) published between 1 January 2000 and 31 December 2020, (4) cross-sectional/longitudinal design, and (5) having a quantitative methodology.

We excluded the following: (1) gray literature, books, chapters, conference papers/abstracts, or non-peer-reviewed articles; (2) non-English language publications; (3) anything published outside of the established time range; (4) case reports or case series, meta-analyses, and systematic reviews; and (5) qualitative studies. In addition, articles without an abstract, and publications that were not full articles, were excluded.

Information Sources and Search Strategy

Two electronic databases were used: PsycINFO/PsycARTICLES and PubMed/Medline. The search strategy was as follows: “(porn OR pornography OR cyberporn OR “sexually explicit”) AND (assault OR aggression OR abuse OR violence OR victimization OR rape OR perpetration OR “sexual risk behaviors” OR coercion).” The search included articles published between 1 January 2000 and 31 December 2020. References of the articles finally included in the present systematic review were also manually checked for possible additional studies to include.

Study Selection

A two-step process was used to assess the results of the search. In the first stage, two reviewers (AVM and GMB) individually screened all the potential studies, taking into account titles and abstracts, prior to the retrieval of the full text. In the next stage, those studies identified for full review were screened by the same reviewers according to the eligibility criteria of the present systematic review. Differences of opinion between the reviewers were resolved through consensus. The entire process was performed using Covidence software (Innovation, 2021).

Data Collection Process and Data Items

We extracted data including author(s) and year, country, study design, aims, type of population, sample size, participants characteristics, pornography assessment, violence assessment, assessed individuals (offenders and/or victims), type of violence, violence (taxonomy), and results.

Results

Study Selection

A total of 1,524 records were retrieved from the literature search in both databases. After removing 242 duplicates, 1,163 of the 1,282 remaining articles were excluded regarding title and abstract. In this first screening, we found a wide range of scientific literature that included clinical or criminal population and many articles that referred to legal aspects of child pornography, being topics that were outside the scope of our research. The remaining 119 studies were screened at

a full-text level. Of the 119 articles screened, 59 were finally included in the present systematic review. The remainder of the articles were excluded for reasons including meta-analytic design, offender populations or clinical samples, the use of the term “erotic” instead of “pornographic” or “sexually explicit,” not assessing violence, or not having an abstract (Figure 2).

Study Characteristics

Overview of studies and samples. Forty-four of the studies included in the systematic review had a cross-sectional design and 15 had a longitudinal design. Sample sizes ranged from 42 to 4,363. Of the studies, 6 included only females, 25 studies included only males, and 28 studies included both males and females. Most of the studies were conducted in the United States, followed by Europe (Italy, Croatia, England, Poland, Belgium, Norway, and Sweden) and Asia (Taiwan, China, and Korea). Only one study was conducted in Africa (Ethiopia).

Considering age, there was a high heterogeneity in the studies in terms of the classification of adolescents, young adults, and adults. For example, while some include high school students as young adults, others classify them as adolescents. Considering the classification carried out by the authors of the different studies, 17 studies included adolescents, 29 involved young adults, 9 included adults, and 4 comprised mixed samples. The findings have been classified into two different tables. Table 1 includes a description of studies conducted in adolescents, while Table 2 focuses on studies with an adult population.

Conceptualization and assessment of pornography use. The conceptualization of the term “pornography” was different in the included articles. Of all articles that were finally selected, only 16 included a definition/short explanation of the term “pornography” for their participants. The rest of the studies did not provide participants with any prior explanation to contextualize aspects related to pornography consumption. The main definitions included were as follows: (1) “any material which openly depicts sexual activity; material which shows naked bodies but not sexual intercourse or other sexual activity does not belong to pornography as here defined” (Dawson et al., 2019; Kohut et al., 2020); (2) “material that showed actual intercourse and other sexual acts, graphic but simulated acts, and hard-core sexual acts (e.g., bondage, S&M) contained in magazines, books, movies, and Internet Websites” (Franklin, 2013); (3) “content appearing in any mediated venue that depicted female nudity and/or graphic sexual acts involving women such as intercourse or oral sex” (Wright & Tokunaga, 2016); (4) “X-rated was defined as having content that was sexually explicit and intended to increase sexual arousal” (Simons et al., 2012); (5) “images of sexual intercourse or other sexual acts (e.g., oral sex, masturbation)” (D’Abreu & Krahé, 2014; D’Abreu & Krahé, 2016);

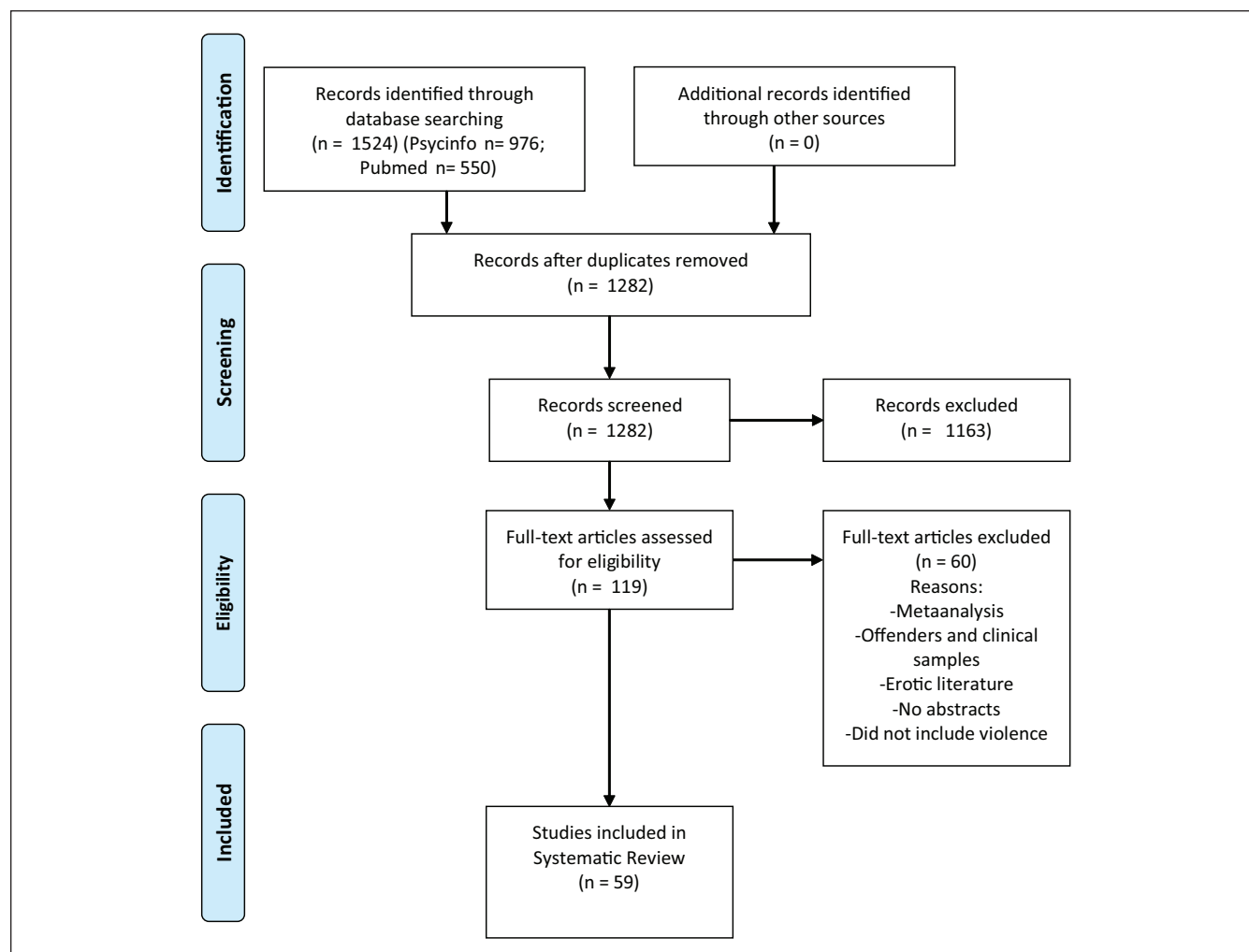


Figure 2. PRISMA flow diagram.

PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

(6) “pictures of naked people or of people having sex” (Chang et al., 2016; Wolak et al., 2007); (7) “sex photos, presentations of sexual intercourse, presentations of other sexual acts, for example, oral sex, masturbation, and films in which the man and the woman engaged in sexual activities that they both wanted” (Tomaszewska & Krahé, 2016; Tomaszewska & Krahé, 2018); (8) “sexually explicit images, videos, sound clips, or erotic fiction” (Baer et al., 2015); (9) “media consisting of graphic sex acts (including penetration) being shown or described in videos, movies, magazines, books, or online” (Foubert et al., 2011); (10) “sexually explicit media that primarily is intended to arouse the viewer sexually” (Shin & Lee, 2019); (11) “pictures/videos with clearly exposed genitals, pictures/videos in which people are having sex” (Vangeel et al., 2020); and (12) “sexually explicit texts or images, in various media, namely, ‘men’s magazines,’ pornographic books or magazines, videos, movies, Internet sites, or cell phones” (Romito & Beltramini, 2015).

Table 3 includes pornography measures in relation to access, content, and format of pornography consumption.

Other pornography-related factors assessed were age of first exposure, reasons for watching pornography, sharing pornography of self or others, pornography acceptance, and types of media watched. Another of the most frequently assessed variables was the frequency of pornography use: in the last month (Spadine et al., 2020), 6 months (Bonino et al., 2006; Dawson et al., 2019; Franklin, 2013; Goodson et al., 2020; Kohut et al., 2020, and 12 months (Brown & L’Engle, 2009; Chang et al., 2016; Foubert et al., 2011; Hagen et al., 2018; Hald & Malamuth, 2015; Herbenick et al., 2020; Kernsmith & Kernsmith, 2009; Rothman & Adhia, 2015; Simons et al., 2012; Willoughby et al., 2016; Wolak et al., 2007; Wright & Tokunaga, 2016).

Most of the studies measured all these factors by means of a few items: for example, 1 item (de Heer et al., 2020; Dong et al., 2013; Hagen et al., 2018; Kohut et al., 2020; Malamuth

Table I. Adolescents' Results.

First Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participant Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Brown (2009)	Adolescents	Longitudinal (prospective)	To examine the correlates of use of pornography and sexual attitudes.	967	Male: 49.95%; Female: 50.05%; age (M = 13.6, SD = 0.76)	Frequency of pornography use (3 items).	Progressive gender role attitudes (10 items); sexual harassment perpetration (7 items).	Aggressor	Progressive gender role attitudes; sexual harassment perpetration.	Intimate partner sexual assault	Early exposure for males predicted less progressive gender role attitudes, more permissive sexual norms, sexual harassment perpetration, and having oral sex and sexual intercourse 2 years later.
Ybarra (2011)	Adolescents	Longitudinal	To identify gaps in our understanding of pornography exposure and the etiology of sexual aggression.	1,388	Male: 49%; female: 51%; age (M = 12.6 range: 9–16)	Pornography use (1 item) and violent pornography (3 items).	Dichotomous indicator of (in-person sexual assault; technology-based sexual harassment/solicitation).	Aggressor	In-person sexual assault; technology-based sexual harassment/solicitation.	Intimate partner sexual assault	The relative odds of reporting sexually aggressive perpetration given exposure to x-rated material over the 36 months was attenuated further but the relationship remained statistically significant. Youth reporting exposure to violent x-rated material were 24 times as likely to report sexually aggressive behavior.
Chang (2016)	Adolescents (high school students)	Longitudinal	To assess the longitudinal predictors of the occurrence of youth unwanted exposure to online pornography and online sexual solicitation victimization and perpetration.	2,992	Age (range: 15–17 years old)	Pornography use (7 items).	How often they sexually harassed others. If participants answered "a few times within a year" or more frequently, they were coded as an offline sexual harassment perpetrator. Aggressor: cyberbullying victimization and perpetration were measured using 4 items each category.	Aggressor and victim	Offline sexual harassment perpetration, cyberbullying perpetration and victimization.	Intimate partner sexual assault	In male adolescents, sexually aggressive behavior showed statistically significant association with pornography exposure. Adolescents with more exposure to internet pornography were more likely to exhibit sexually aggressive behavior.
Ybarra (2018)	Adolescents	Longitudinal	To examine the emergence of sexual violence perpetration.	1,586	Male: 50%; female: 50%; age (M = 12.7, SD = 1.8)	Exposure to pornography: non-exposure; violent pornography exposure; nonviolent pornography exposure.	Sexual violence perpetration (14 items on sexual violence; nine in-person items from American Association of University of Woman and from the Adolescent Social Experiences Survey; five items of Youth Internet Safety Survey).	Aggressor	Sexual violence; sexual harassment; sexual assault.	Intimate partner sexual assault	Exposure to violent (but not nonviolent) pornography predicted each type of sexual violence. Exposure to violent (but not nonviolent) pornography was associated with a fourfold increased odds or higher, depending on the type of sexual violence, of a first perpetration of all types of sexual violence except for attempted rape, which had elevated but nonsignificant odds.
Leemis (2019)	Adolescents (middle school)	Longitudinal	To examine risk and protective factors for bullying and sexual harassment.	3,549	Male: 49.8%; female: 50.2%; age (M = 12.8, SD = 1.08)	Pornography exposure (2 items).	Dismissiveness of sexual harassment (11 items); cyber sexual harassment perpetration (three-item scale); Cyberbullying perpetration (four-item scale); an abbreviated version of the American Association of University Women Sexual Harassment Survey was used to assess sexual harassment perpetration.	Aggressor	Myths; sexual harassment; forced sexual contact.	Intimate partner sexual assault	Students who reported higher levels of anger, self-esteem, exposure to pornography, and adherence to traditional masculinity (individual-level factors), lower levels of social support and parental supervision (relational-level factors), and stronger sense of school membership (community-level factors) were found to have increased odds of belonging to the group associated with perpetrating sexual harassment.
Dawson (2019)	Adolescents	Longitudinal	To provide insights about the link between pornography use and sexual aggression.	594	Male: 100%; age (M = 15.8, SD = 0.52)	Pornography use frequency (1 item); age of first exposure (1 item).	I self-reported and validated item.	Aggressor	Sexual aggression.	Intimate partner sexual assault	Pornography use slightly increased among male adolescents who reported marginal levels of or no sexual aggression and pornography use decreased somewhat among their peers who reported moderate sexual aggressiveness.
Kohut (2020)	Adolescents (high school students)	Longitudinal	To test the association between pornography use and sexual aggression.	936	Male: 100%; age (M = 15.89, SD = 0.54)	Pornography use (1 item), and frequency of pornography use (1 item).	I item: How many times have you kissed, touched, or done anything sexual with another person when that person did not want you to do so?; 1 item of frequency (never, once, or several times); hostile masculinity (Hostility Toward Woman Scale; Impersonal sexuality (1 item; number of sexual partners and age of first intercourse).	Aggressor	Sexual aggression without consent	Intimate partner sexual assault	Pornography use, when considered on its own, but also in confluence with other risk factors for sexual aggression, was not substantially associated either with contemporaneously measured sexual aggression or changes in the probability of subsequent sexual aggression.
Vargel (2020)	Adolescents—youth adults	Longitudinal	To examine whether reciprocal relationships occur between exposure to music television or pornography, and the acceptance of gendered sexual roles.	400	Men 45.5%; woman: 54.5%; age (range: M = 21.17; SD = 1.52)	Frequency and type of pornography use (7 items).	Acceptance of gendered sexual roles (stereotypes about Males Sexuality Scale; Hyperfemininity Scale); rape myth acceptance (Rape Myth Acceptance Scale).	Aggressor	Acceptance of gendered sexual roles; rape myth acceptance.	Intimate partner sexual assault	Online pornography in V3 did not significantly predict the acceptance of gendered sexual role. The indirect relationship between pornography in V2 and rape myth acceptance in V4 was not statistically significant.
Bonino (2006)	Adolescents	Cross-sectional	To investigate the relationship between sexual harassment (passive and active) and violence with pornography use.	804	Male: 58%; female: 42%; age (range: 39% aged 14–15 and 61% aged 16–19)	Frequency of pornography use—images and videos (2 items).	Involvement in active and passive sexual violence (2 items of frequency of sexual violence).	Aggressor	Sexual violence.	Intimate partner sexual assault	The correlations between pornography and sexual violence were all positive and the majority were also significant, though they were stronger for girls.

(continued)

Table I. (continued)

First Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participant Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Wolak (2007)	Adolescents (youth internet users)	Cross-sectional	To assess the extent of unwanted and wanted exposure to online pornography among youth internet users and associated risk factors.	1,500	Male: 51%; Female: 49%; age (M = 14.24; SD = 2.09)	Unwanted/wanted pornography exposure (2 items).	Offline victimization (2 items on physical and sexual abused combined; interpersonal victimization).	Victim	Physical and sexual abuse; interpersonal victimization.	Intimate partner sexual assault	Offline interpersonal victimization were associated with higher risk of wanted exposure to pornography.
Bekele (2011)	Adolescents and adults (secondary school)	Cross-sectional	To examine a full range of sexual violence victimization experiences and investigate a broader range of risk factors.	793	Female: 100%; age (14–24 years old)	Frequency of pornography use (1 item).	Sexual violence attitude (15 items).	Victim	Sexual violence	Intimate partner sexual abuse	Watching pornography were positively associated with total victimization and each form of sexual violence victimization.
Kjellgren (2011)	Adolescents and adults (high school students)	Cross-sectional	To investigate risk/protective factors for sexual coercion by comparing females who reported being sexually abusive with those who did not.	4,363	Female: 100%; age (M = 18.1; SD = 0.63)	Viewing violent porn (yes/no) (1 item).	Burt's Rape Myths Acceptance Scale; gender stereotypic attitudes; sexual victimization and sexual coercive behavior (1 item).	Aggressor	Rape myths; gender stereotypic attitudes; sexual victimization and sexual coercive behavior.	Intimate partner sexual coercion	Having watched violent porn were more common among sexually coercive than nonsexual conduct problem females. There is no association with the other variables.
Dong (2013)	Adolescents	Cross-sectional	To explore the prevalence and risk factors of polyvictimization.	3,155	Male: 50.52%; Female: 49.48%; Age (12–18 years old)	Exposure to pornography (1 item).	Polyvictimization (Juvenile Violence Questionnaire).	Victim	Polyvictimization	Intimate partner sexual assault	Polyvictimization correlates with exposure to pornography.
Romito (2015)	Adolescents	Cross-sectional	To advance our understanding of violent/degrading pornography exposure.	702	Male: 45.44%; female: 54.56%; age (M = 18.2; SD = 0.8)	Frequency and type of pornography use (23 items).	Sexual violence (2 items); teen dating violence (9 items).	Victim and aggressor	Sexual violence and teen dating violence.	Intimate partner sexual assault	Among male students, no indicator of victimization was significantly associated with pornography exposure. For female students, being a victim of family violence, sexual violence, and of teen dating violence were all significantly associated with exposure.
Rothman (2015)	Adolescents	Cross-sectional	To explore whether adolescents dating abuse victimization status was associated with pornography use choices and experiences.	72	Male: 80%; female: 47%; age (16–17 years old)	Frequency of pornography use (3 items); pornography category and website preference (checklist options); partner behavior and pornography (2–3 items).	Dating abuse victimization (Severity of Violence Against Woman Scales).	Victim	Dating abuse victimization.	Intimate partner sexual abuse	Adolescents dating abuse victims watched pornography more frequently than nonvictimized counterparts. Dating abuse victims were also more likely to report viewing pornography with other people (rather than alone), to report that they had ever been asked to do a sexual act that they believed their partner first saw in pornography.
Holt (2016)	Adolescents (middle school)	Cross-sectional	To integrate theories models that predicts effects of online experiences.	499	Male: 49.9%; female: 50.1%; age (eighth graders at the middle school)	Frequency of pornography use (1 item).	Sexual harassment (1 item).	Victim	Sexual harassment victimization.	Intimate partner sexual assault	Sexual victimization correlated with the viewing of sexual materials.
Stanley (2018)	Adolescents	Cross-sectional	To examine the relationship between regular viewing of online pornography, sexual coercion and abuse and the sending and receiving of sexual images and messages.	4,564	Male: (58–89%); female: (53–82%); Age (M = 14.73–15.19)	Pornography use (1 item); being forced to watch pornography (1 item).	Victimization (1 item of type of sexual pressured; 1 item of type of sexual perpetration; gender equality 1 item).	Victim and aggressor	Perpetration; sexual victimization; sexual abuse or coercion; gender equality.	Intimate partner sexual abuse and intimate partner sexual coercion	Boys' perpetration of sexual coercion and abuse was significantly associated with regular viewing of online pornography. Negative gender attitudes were overlapped with regular use of pornography online.
Rostad (2019)	Adolescents	Cross-sectional	The current study examined the association of violent pornography exposure with different forms of teen dating violence.	2,880	Male: 43.6%; female: 52.3%; age (M = 15.42; SD = 0.65)	Violent pornography exposure (social norms measure) (3 items).	Rape myth acceptance (Illinois Rape Myth Acceptance Scale); dating violence (The Conflict in Adolescent Dating Relationship Inventory); gender equitable attitudes (Gender Equitable Norms Scale).	Victim and aggressor	Rape myth acceptance dating violence (perpetration and victimization); gender equitable attitudes.	Intimate partner sexual assault	Violent pornography exposure was significantly associated with greater odds of physical victimization. Exposure to violent pornography was also a marginally significant predictor of perpetration, with increasing exposure related to greater odds of physical teen dating violence perpetration. Female participants who had been exposed to violent pornography were more likely to experience sexual teen dating violence victimization. Exposure to violent pornography was not significantly related to victimization for female participants after controlling other variables.

(continued)

Table I. (continued)

First Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participant Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Shin (2019)	Adolescents	Cross-sectional	To investigate whether social support would buffer the negative effects of internet pornography on sexually aggressive behavior	210	Male: 46.7%; female: 53.3%; age ($M=17.2$; $SD=0.78$)	Cybersex Addiction Index (20 items).	Sexually aggressive behavior (10 items).	Aggressor	Sexual aggressive behavior	Intimate partner sexual assault	In male adolescents, sexually aggressive behavior showed statistically significant association with pornography exposure. Adolescents with more exposure to internet pornography were more likely to exhibit sexually aggressive behavior
Seabrook (2019)	Adolescents and young adults (undergraduates)	Cross-sectional	To examine whether objectification of women mediates the relations between media use (TV and pornography), and attitudes and behaviors supportive of violence against women.	283	Male: 100%; age ($M=19.29$; $SD=1.23$)	Pornography exposure (1 item of frequency of pornography use).	(1 Rape Myths (Rape Myth Acceptance Scale); acceptance of objectification of women (Sexual Objectification Scale).	Aggressor	Rape myths; acceptance of objectification of women.	Intimate partner sexual abuse	Exposure to pornography was each associated with greater acceptance of objectification which, in turn, is associated with greater rape myth acceptance and more frequent acts of sexual deception among undergraduate men
Huntington (2022)	Adolescents (10th-grade students)	Cross-sectional	To unite many factors of the hostile masculinity and impersonal sex constructs in a theory-based analysis of sexual assault perpetration and its relation with several types of pornographic media.	904	Male: 100%; age ($M=15.42$; $SD=0.63$)	Violent pornography exposure (3 items from Boehringer Social Norms Measure Scale).	Perpetration of sexual aggression (14 items scale); rape myth acceptance (Rape Myth Acceptance Scale); personal perceptions of abusive behaviors (12 items scale); masculine norms in relationships; Masculinity Ideology in Relationships Scale.	Aggressor	Perpetration of sexual aggression; rape myth acceptance; personal perceptions of abusive behaviors; masculine norms in relationships.	Intimate partner sexual abuse and intimate partner sexual assault	Higher scores on the interaction of hostile masculinity and exposure to violent pornography increased the likelihood of being classified in the group that perpetrated noncontact sexual aggression. Impersonal sex orientation and violent pornography exposure were positively associated with frequency of noncontact sexual aggression in the count model. Frequency of contact sexual aggression was negatively associated with hostile masculinity and positively associated with exposure to violent pornography. The interaction of hostile masculinity and impersonal sex orientation was positively associated with frequency of contact sexual aggression, while the reverse was found for the interaction of impersonal sex orientation and violent pornography exposure. Violent pornography exposure and the interaction of hostile masculinity and impersonal sex orientation increased the frequency of recent contact sexual aggression. Violent pornography exposure was associated with perpetrating noncontact sexual aggression in the last 6 months, while violent pornography exposure and the interaction of hostile masculinity and impersonal sex orientation increased the frequency of recent contact sexual aggression.

Table 2. Adults' Results.

1 st Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participants Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Thompson (2013)	Young adults	Longitudinal (prospective)	To describe the type and extent of technology-based coercion behaviors, and to examine potential risk factors for these behaviors	795	Male 100%; age (M=18.56; SD=0.51)	Frequency of pornography use (1 item)	Technology-based coercion (5 items); hostility toward woman (Hostility Toward Woman Scale); Rape Supportive Beliefs Scale	Aggressor	Technology-based coercion behaviors; rape supportive beliefs; hostility toward woman	Intimate partner sexual abuse	Exposure to pornography is one of the significantly predicted levels of technology-based coercion behaviors 3 years later. Higher levels of technology-based coercion behaviors were predicted exposure to pornography.
D'Abreu (2014)	Young adults (college students)	Longitudinal	To investigate cognitive and behavioral aspects of consensual sexuality that may contribute to an increased risk of engaging in sexual aggression	327	Male 100%; age (M=20.4; SD=3.17)	Pornography use and frequency (8 items)	Sexual aggression (Sexual Experiences Survey)	Aggressor	Sexual aggression	Intimate partner sexual assault	Nonaggressive men scored significantly lower in pornography use than the severe aggression group. Pornography use correlates as a predictor of perpetration of sexual aggression.
Thompson (2015)	Young adults (college men)	Longitudinal	To determine if changes in risk factors for sexual aggression were related to changes in sexual aggression likelihood	795	Male 100%; age (M=18.56; SD=0.51)	Frequency of pornography use (1 item)	Rape supportive beliefs (Rape Supportive Beliefs Scale); hostile attitudes toward women (8 item scale adapted from Hostility Toward Women Scale); peer pressure to have sex (3 items); peer approval of forced sex (6 items)	Victim and aggressor	Rape supportive beliefs; hostile attitudes toward women; peer pressure to have sex; peer approval of forced sex	Intimate partner sexual assault and physically forced sexual activity	Men who increased levels of sexual aggression are related to increases in pornography use, men who show reduction in sexual aggression shows less increase in pornography use.
D'Abreu (2016)	Young adults (college students)	Longitudinal and cross-sectional	To address experiences of sexual victimization and combined cross-sectional and prospective analyses	541 (Cross-sectional and 250 longitudinal)	Cross-sectional (Male: 48.61%; female: 51.39%; age (M=20.1; SD=2.3); longitudinal (male=48.6%; female=56.4%)	Pornography use, type and frequency (2 items)	Sexual victimization (Sexual Experiences Survey)	Victim	Sexual victimization	Intimate partner sexual assault	Cross-sectional = A significant indirect effect was found from pornography consumption to sexual victimization through risky scripts and sexual behavior. Longitudinal = For women, a significant direct path was found from risky behavior at T1 to sexual victimization at T2. For men, indirect paths were found from pornography use via risky scripts, risky behavior, and T1 victimization to sexual victimization at T2.
Tomaszewska (2018)	Young adults (university students)	Longitudinal	To examine risk factors for sexual aggression perpetration and vulnerability factors for sexual aggression victimization	318	Male 32.70%; female 67.3%; age (M=19.7; SD=1.03)	Pornography use (4 items)	Sexual aggression perpetration and victimization (Sexual Aggression and Victimization Scale); attitudes toward sexual coercion (14 items)	Victim and aggressor	Sexual aggression (perpetration and victimization); attitudes toward sexual coercion	Intimate partner sexual assault	Pornography use indirectly increased the odds of sexual aggression victimization in the last year via more risky sexual scripts, more risky sexual behavior, and the experience of victimization since the age of 15 until a year ago. Pornography use was directly linked to perpetration since the age of 15 until a year ago but not to perpetration in the last year. Pornography use indirectly predicted sexual aggression victimization, via risky scripts and risky sexual behavior. More frequent pornography use was related to more risky sexual scripts, which predicted risky sexual behavior, which in turn increased the odds of sexual aggression victimization.
Hagen (2018)	Adults	Longitudinal	To test two hypotheses on the mediational roles of peer norms, pornography consumption, and promiscuity in linking religiosity to sexual aggression and technology-based coercive behavior	795	Male 100%; age (M=18.58)	Frequency of pornography use (1 item)	Revised Sexual Experiences Survey; 3 items of technology-based coercion	Victim and aggressor	Perpetration and victimization; technology-based sexually coercive behaviors	Intimate partner sexual abuse	More pornography use also prospectively predicted higher levels of technology-based coercion behaviors. Pornography use correlates with sexual aggression and technology-based coercion.
Huntington (2020)	Adults (unmarried but in romantic relationship)	Longitudinal	To assess pornography viewing habits, and variables representing relationship functioning	1,234	Male 36.5%; female 73.5%; Age (M=26.2; SD=5.22)	Frequency of viewing erotic websites, magazines or movies (2 items)	Items from the Revised Conflict Tactics Scale (psychological and physical aggression perpetration and victimization)	Victim and aggressor	Physical and psychological	Intimate partner sexual abuse	Participants who watch more pornography together would report more psychological aggression and that increased in watching together and alone would be associated with increases in psychological aggression. For physical aggression, no pornography-related terms were significantly associated with perpetration.

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Table 2. (continued)

1 st Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participants Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Malamuth (2000)	Adults	Cross-sectional	To model the relationship between pornography consumption and aggression in naturalistic settings	2,972	Male 100%; age (M=21)	Frequency of pornography use (1 item)	Sexual aggression (10-item scale of Koss and Oros 1982); Hostility toward woman (20 item Hostility Toward Woman Scale); hostile masculinity (personality measure)	Aggressor	Sexual aggression; hostility toward woman	Intimate partner sexual assault	There is a direct path between pornography use and coercion (pornography as a cause), which was statistically significant. There is a direct path between coercion into pornography use (pornography as a symptom), which was statistically significant. Pornography exposure is not associated for the majority of American men with high levels of sexual aggression, but those at the highest "predisposing" risk level for sexual aggression, and are very frequent pornography users have higher levels of sexual aggression. Results revealed no significant main effects or interactions.
Goode (2000)	Young adults (college students)	Cross-sectional	To investigate the effects of degrading themes and explicitness in videotapes	83	Male 100%; age (at least 18 years old)	4 videos (15'); sexual explicitness, degradation of women	Rape supportive attitude (Rape Supportive Scale); attitudes toward woman (Attitudes Toward Woman Scale); hypermasculinity (Hypermasculinity Index); Sex Callousness Scale	Aggressor	Rape supportive attitude; attitudes toward woman; hypermasculinity and sexual callousness	Intimate partner sexual abuse	
Carr (2004)	Young adults (undergraduates)	Cross-sectional	To measure the constellation of risk factors of sexual aggression in a sample of college men	99	Male 100%; age (M=20; SD=1.6)	Pornography use (5 item)	Sexual Experiences Survey; Hostility Toward Woman Scale; Likelihood of Raping (item 1 item); sexual victimization as boys (items of childhood sexual experiences); beliefs associated with male sexual aggression (The Burr's Rape Myth Acceptance Scale)	Victim and aggressor	Sexual coercion; hostility toward woman; likelihood of raping; sexual victimization; rape myths and sexual aggression beliefs	Intimate partner sexual assault	Pornography consumption was predictive of sexual aggression. Pornography use was a predictor for sexual violence.
Taylor (2006)	Young adults (undergraduates)	Cross-sectional	To explore association between reading pornography magazines and sexual attitudes and beliefs	68	Male 100%; age 18-24 (M=19.40; SD=1.16)	Frequency of pornographic magazines (1 item)	Burt's Rape Myths Acceptance Scale (male dominance and aggression); Burt's Rape Myths Acceptance Scale (Blame—The Victim Subscale); Men's Sexual Self-Schema Scale (Powerful-Aggressive sub-scale)	Aggressor	Myths and beliefs; violent attitudes	Intimate partner sexual abuse	More frequent pornographic magazine readership was associated with expectations of greater variety of intimate behaviors and attitudes favoring permissiveness but not aggression.
Lam (2007)	Young adults	Cross-sectional	To examine whether psychosocial correlates were associated with cyberpornography use	229	Male 100%; age (M=21.5; SD=1.82)	Online pornography use (8 item scale)	Sexual Harassment Proclivity Scale; Aggressor items on perceptions of sexual harassment	Aggressor	Sexual harassment proclivity; sexual harassment perception	Intimate partner sexual assault	Online pornography use was associated with higher sexual harassment proclivity and higher tolerance to sexual harassment. The association between online pornography use and perception of sexual harassment did not reach a significant level. The final model, with both online and offline pornography viewing in the equation, $R^2=0.37$, $F(2, 226)=17.69$, $p<.001$, accounted for 13.5% of variance of sexual harassment proclivity. The variable of particular focus in this research, pornography consumption, was strongly correlated with sexual aggression. Based on the hierarchical model, despite the use of statistical controls, the fact that the data are correlational requires caution about any causal conclusions. The pornography variable predicted sexual aggression. Although the current study is also limited in that it used a convenience sample.
Vega (2007)	Young adults (college students)	Cross-sectional	To examine the unique contribution (if any) of pornography consumption to men's sexually aggressive behavior	102	Male 100%; age (first year of introductory course of psychology)	Frequency of pornography use (1 item)	Sexual aggression (Sexual Experiences Survey for Male); hostility toward woman (Hostility Toward Woman Scale); rape myth acceptance (rape myth Acceptance Scale; Acceptance of Interpersonal Violence Scale for males)	Aggressor	Sexual aggression; hostility toward woman; rape myth acceptance; acceptance of interpersonal violence	Intimate partner sexual assault	Pornography use is positively related to total sexual coercion, extortion=bargaining, sweet talk=deceit, obligation, and the use of emotional manipulation. In these four models, it is notable that pornography use has quite a strong and consistent relationship to the coercion measures, betas (4 18-.24) especially when one considers the relatively large number of control variables included in these models. One coercion sub-scale, the use of physical force and intimidation was not significantly related to pornography use.
Kernsmith (2009)	Young adults (college undergraduate students)	Cross-sectional	To examine the relationship between use of pornography and female sexual aggression	512	Female 100%; Age (M=19)	Frequency of pornography use (4 items)	Five sub-scales of sexual coercive behaviors (extortion behaviors; deceit behaviors; obligation behaviors; emotional manipulation and force and intimidation)	Aggressor	Sexual coercion; (extortion behaviors; deceit Behaviors; obligation Behaviors; emotional manipulation and force and intimidation)	Intimate Partner Sexual Coercion	

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Table 2. (continued)

1 st Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participants Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Romito (2011)	Young adults (12th grade in high school and vocational training 18-25 years)	Cross-sectional	To analyze the links between having experienced psychological and physical family violence and/or sexual violence and pornography use	303	Male 50.8%; female 49.2%; age (18-25 years old)	Watching pornography for the first time (age of first exposure, reasons for watching and types of media watched) and currently (reasons for watching, type of media watched, contents of the material with a list of possible contents). Variable about "Violence against women" with degrading content.	Respondents were asked three different questions about whether they had ever experienced: Physical violence, psychological violence, and sexual violence	Victim	Physical violence, family psychological violence, and sexual violence	Intimate partner sexual assault	For female adolescents, there were strong relationships between family psychological violence and sexual violence and pornography use, both in bivariate and in multivariate analyses (victimization). For male students, analyses were performed only on current pornography use. No significant relationships were found between the experiences of victimization and current use of pornography. Among girls watching pornography those who experienced family psychological violence were more likely than those without family psychological violence to watch material that included violence against the woman.
Foubert (2011)	Young adults (fraternity)	Cross-sectional	To study the impact of mainstream pornography, sadomasochistic pornography, and rape pornography on likelihood of raping, likelihood of committing sexual assault, rape myth acceptance, bystander willingness to help, and bystander efficacy	787	Male 100%; age (M=20.3; SD=1.3)	Type of pornography use (1 item)	Likelihood of raping and sexual assault (items of Attraction to Sexual Aggression Scale), rape myth acceptance (Illinois Rape Myth Acceptance Scale)	Aggressor	Likelihood of raping and sexual assault; rape myth acceptance	Intimate partner sexual assault	Men who saw mainstream pornography scored significantly higher on self-reported likelihood of raping ($p < .01$) and likelihood of committing sexual assault ($p < .01$) than men who did not see mainstream pornography during the last 12 months. An independent t-test revealed that viewers of sadomasochistic pornography scored significantly higher on likelihood of raping ($p < .05$), likelihood of committing sexual assault ($p < .01$) and rape myth acceptance. Men who viewed rape pornography scored significantly higher on likelihood of raping, likelihood of committing sexual assault and rape myth acceptance.
Yoon (2011)	Young adults (university campus)	Cross-sectional	To identify potential perceptual biases in the processing of sexual material in sexually coercive men	42	Male 100%; age (-)	60 images visual sexual stimuli; pornography use (10 items scale)	Sexual coercion (Sexual coercion Scale), expressive aggression toward woman (10 item scale), hostility toward women (12 items)	Aggressor	Sexual coercion; expressive aggression toward woman; hostility toward women	Intimate partner sexual coercion	Men who admitted sexually coercive behavior showed increased response latency only in the condition in which they were required to withdraw their attention from sexual stimuli to perform a cognitive task. A follow-up comparison between sexually coercive and noncoercive men in the sexual stimuli task condition indicated significantly increased interference among sexually coercive men. Pornography use does not show any association with sexual coercion.
Simons (2012)	Young adults (undergraduates)	Cross-sectional	To investigate the extent to which exposure to harsh parenting practices and sexually explicit materials contributes to perpetration and victimization.	2,088	Male 15.04% and female 84.96%; age (M=19.5)	Frequency of pornography use (2 items)	Perpetration of sexual coercion (Sexual Coercion Scale); victim of sexual coercion (Sexual Coercion Scale adapted for Victim); harsh corporal punishment (items for the harsh and supportive marital interaction scales)	Victim and aggressor	Male sexual coercion and female sexual victimization	Intimate partner sexual assault	Men who use pornography are more likely to be perpetrators of sexual coercion toward a female partner, and women who view pornography were more likely to be victims of sexual coercion by a male partner. There is no significant association between harsh parenting and perpetration of sexual coercion when pornography use is low. The regression lines indicate that women who regularly consume pornography, regardless of their level of exposure to father's hostility, report high amounts of sexual victimization.
Yang (2012)	Young adults (undergraduates)	Cross-sectional	To confirm that exposure to pornography can influence laboratory aggressive behavior through three main objectives	120	Male 100%; age (M=21.54; SD=2.22)	Stimulus condition of pornographic material (neutral, nonviolent sexual, sadomasochistic and violent sexual)	Aggressive behavioral tendencies (dare-throwing decision task)	Aggressor	Aggressive behavioral tendencies	Intimate partner sexual assault	We found that exposure to pornography increased dare-throwing at human faces, which is correlated with aggressive tendencies. The aggressive tendencies differed according to the pornographic materials' content. That is, the aggressive tendencies depended on whether the pornographic acts were consensual and whether they were violent. Specifically, pornography depicting violent sexual interaction (i.e., the sadomasochism and violent-sexual conditions) revealed a higher frequency of dare-throwing at human faces than nonviolent pornography.

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Table 2. (continued)

1 st Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participants Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Malamuth (2012)	Young adults (high school)	Cross-sectional	To examine if individual differences in risk for sexual aggression moderate the association between pornography use and attitudes supporting violence against women	2,972	Male 100%; age (M=21; SD=3.88)	Frequency of pornography use (1 item)	Attitudes supportive of violence against women summing three scales (Interpersonal Violence Scale; Adversarial Sexual Beliefs, and Rape Myth Acceptance Scale)	Aggressor	Attitudes supportive of violence against woman	Intimate partner sexual assault	The overall sample correlation between pornography consumption and attitudes supportive of violence was significant. Higher pornography use was predictive of greater attitudes supportive of violence. Pornography use was predictive of differing levels of acceptance of sexual violence depending upon men's risk levels. Those who reported the two highest levels of pornography use ("Very frequent" and "Somewhat frequently") were found to hold significantly higher acceptance of sexual violence than those who "never" consumed pornography.
Franklin (2013)	Adults (undergraduates in Northwestern Public University)	Cross-sectional	To fill a gap in the literature on danger cue recognition and sexual victimization	257	Female 100%; age (M=20.68);	Frequency of pornography use (6 items)	Risk Perception Survey; Delayed behavioral response to sexual threat; rape myths	Victim	Rape myth	Intimate partner sexual abuse	Frequency of pornography consumption was positively and significantly related to delayed behavioral response. Increases in the regularity of pornography use produced increased time lag between the point at which the female respondents indicated that they would exit a sexually risky scenario, once discomfort had been established.
Baer (2015)	Adults	Cross-sectional	To examine the association of hostile masculinity, sexual promiscuity, and pornography use	183	Male 100%; age (M=27.2; SD=9.5)	Frequency of pornography use and type of content (1 item)	Hostile masculinity (hostile masculinity toward woman); sexual coercion (Sexual Experiences Survey)	Aggressor	Hostile masculinity and sexual coercion	Intimate partner sexual coercion	In the first step of the hierarchical regression, hostile masculinity, sexual promiscuity, and pornography were used as main effect predictors of sexual coercion. Pornography use was associated with sexual coercion, but particularly among men who were relatively high in both hostile masculinity and sexual promiscuity. No differences between individuals who reported watching either violent or degrading Online Sexually Explicit Material Survey and individuals who failed to report watching this type of material with respect to sexually coercive behavior. Sexually aggressive individuals reported viewing a greater range of Online Sexually Explicit Material Survey content and engaging in a broader range of Online Sexually Explicit Material Survey behaviors compared to those who engaged in less sexual coercion.
Gonzales (2015)	Young adults (undergraduates)	Cross-sectional	To examine whether the viewing habits of pornography related to self-reported sexual aggression	237	Male 100%; age (M=20.02; SD=2.17)	Online Sexually Explicit Material Survey	Social Experiences Questionnaire	Aggressor	Sexual coercion	Intimate partner sexual coercion	For women and men higher past pornography consumption significantly predicted acceptance of sexual violence against women. For men, the impact of experimental exposure to pornography was significant only for men with low agreeableness
Hald (2015)	Young adults	Cross-sectional	To investigate the effects of a personality trait (agreeableness), past pornography consumption, and experimental exposure to nonviolent pornography on attitudes supporting violence against women	201	Male 50%; female 50%; age (male age: M=24.64; SD=3.76); (female; age M=24.39; SD=3.72)	Pornography Consumption Questionnaire and Experimental Exposure to Pornography	Attitudes Supportive of Violence scales (The Acceptance of Interpersonal Violence Scale and The Rape Myth Acceptance Scale)	Aggressor	Attitudes supportive of violence against woman	Intimate partner sexual assault	There were a positive indirect association between pornography use and attitudes condoning sexual coercion, operating through participants' risky sexual scripts
Tomaszewska (2016)	Young adults (high school)	Cross-sectional	To examine the links between cognitive representations of consensual sex and attitudes toward sexual coercion	542	Male 49.6%; female 50.4%; age (female; M=19.1; SD=0.77); male (M=19.4 years; SD=0.87)	Pornography use and frequency (5 items)	Attitudes toward sexual coercion (14 items); risky sexual aggression scripts (14 items)	Aggressor	Attitudes toward sexual coercion; risky sexual aggression scripts	Intimate partner sexual abuse	Associations were in the expected directions with a greater difference in pornography use being associated with more relational aggression, also once controls were entered into the model at step 2.
Willoughby (2016)	Adults (mixed-sex couple pairs)	Cross-sectional	To examine how different patterns of pornography use between romantic partners may be associated with relationship outcomes	1,755	Male 50%; female 50%; age (M=28.8; SD=8.76)	Frequency of pornography use (1 item), pornography acceptance (individual and as a couple) (6 items)	Relational aggression (7 items from Aggressor couples relational aggression and victimization scale)	Aggressor	Relational aggression and victimization	Intimate partner sexual assault	The results demonstrated that the paths from pornography exposure to objectification of women were at the significance threshold. Therefore, the relationship between objectifying media exposure and attitudes supportive of violence against women was fully mediated by notions of women as sex objects. The results indicated that the notions of women as sex objects mediated the relationship between pornography exposure and attitudes supportive of violence.
Wright (2016)	Young adults (undergraduates)	Cross-sectional	To measure men's exposure to sexual objectifying media and to provide insight into the hypothesis that objectifying but sexual assault absent media affects men's acceptance of sexual violence via their notions of women as sex objects	187	100% male; age (M=20.86; SD=2.08)	Frequency of pornography use (1 item)	Attitudes supportive of violence against women (five items); notions of women as sex objects (four items)	Aggressor	Attitudes supportive of violence against women; notions of women as sex objects	Intimate partner sexual assault	

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Table 2. (continued)

1 st Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participants Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Mikorski (2017)	Young adults (undergraduates)	Cross-sectional	To examine the relations between three dimensions of traditional masculine gender role adherence and likelihood to sexually objectify women via body evaluation and making unwarranted sexual advances	329	Male 100%; age (M=18.9; SD=1.57)	Pornography Use Scale (7 item subscale)	Masculinity norms (the playboy, power over women, and violence subscales of the CMNI-46); sexual Objectification of woman (Interpersonal Sexual Objectification Scale)	Aggressor	Masculinity norms; violence; sexual objectification	Intimate partner sexual abuse	Pornography use was positively related to making unwanted sexual advances toward women. Higher levels of pornography use emerged as unique predictors of more body evaluation of women. Men's pornography use is also harmful to women by promoting men's perpetration of body evaluation and unwanted sexual advances toward women on the screen as well as in real life.
Emmers-Sommer (2018)	Young adults	Cross-sectional	To examine the associations among gender and reasons for pornography consumption as well as attitudinal impact	143	100% Male; age (M=20.86; SD=2.08)	Frequency of pornography use (1 item)	Adversarial attitudes toward woman (adversarial sexual beliefs); rape myth acceptance (rape myth acceptance scale)	Aggressor	Adversarial attitudes toward woman; rape myth acceptance.	Intimate partner sexual assault	Men who currently consume pornography hold significantly higher adversarial beliefs and higher rape myth acceptance than those of current female consumers.
Gainsbury (2019)	Adults (internet users)	Cross-sectional	To investigate the commonalities between negative online consequences to construct meaningful subgroups and to find the relation of these subgroups to specific online activities that may place individuals at risk	1,773	Male 45.2%; female 54.8%; age (M=42.26; SD=16.95)	Frequency of pornography use (1 item)	Abuse online (1 item)	Victim	Abuse/harassment	Intimate partner sexual abuse	Accessing pornography was related to experiencing abuse/harassment.
Hughes (2020)	Young adults (college undergraduate students)	Cross-sectional	To investigate the influence of pornography use and narcissistic and histrionic personality traits on four types of sexual coercion	142	Female 100%; age (M=24.23; SD=7.06)	Cyber Pornography Use Inventory	Sexual coercion (Post-refusal Sexual Persistence Scale)	Aggressor	Sexual coercion	Intimate partner sexual assault	Positive associations between the nonverbal sexual arousal form of sexual coercion, both pornography interest and effort were found. Pornography effort was the only individual predictor significantly associated with this form of sexual coercion. Pornography effort is the only significant individual predictor of emotional manipulation and deception.
Palermo (2019)	Young adults (undergraduate students)	Cross-sectional	To develop a better understanding of multiple perpetrator rape	295	Male 100%; age (M=20.31; SD=2.76)	Pornography History Questionnaire	The Multiple-Perpetrator Rape Interest Scale, the Likelihood to Rape Scale, the Rape Supportive Cognitions Scale, the Sexual Experiences Survey-Tactics First Revised	Aggressor	Multiple perpetrator rape interest; rape supportive cognitions; proclivity of engaging in sexually aggressive behaviors; likelihood to rape	Intimate partner sexual assault	There were no significant relationships found between any proclivity measures and the use of violent pornography. Pornography use was not significantly related to rape proclivity.
de Heer (2020)	Young adults (university)	Cross-sectional	To explore female sexual victimization and its relationship with pornography consumption and alcohol use	483	Female 100%; age (M=19)	Frequency of pornography use (1 item)	Acceptance of modern myths about sexual aggression; Sexual Experiences Survey Short Form Victimization	Victim	Rape myths and sexual victimization	Intimate partner sexual assault	Acceptance of Modern Myths About Sexual Aggression was not significantly correlated with pornography consumption. Pornography consumption and alcohol usage were both significant predictors of victimization when entered as covariates. Those who consumed some pornography and those who consumed much pornography were significantly more likely to experience victimization compared with those who consumed no pornography.
de Heer (2020)	Young adults (undergraduate)	Cross-sectional	To further investigate the relationship between pornography consumption, masculinity, and sexual aggression	152	Male 100%; age (18-20 years old)	Frequency of pornography use (1 item) and type of content (1 item)	Sexual aggression (Sexual Experiences Survey-Perpetration Form); Likelihood of Sexual Force questionnaire	Aggressor	Sexual aggression	Intimate partner sexual assault and physically forced sexual activity	Male-dominant pornography preference was significantly correlated with likelihood of sexual force. More pornography consumption was a significant predictor of higher likelihood of sexual forced in both regression models.
Goodson (2020)	Adults (college students)	Cross-sectional	To examine the relation between participation in high-profile, HS team sports, informational support, maladaptive attitudes, alcohol consumption, gender role traditionality, pornography consumption frequency, and sexual assault perpetration	305	Male 100%; age (M=20.9; SD=1.91)	Frequency in different content of pornography (6 items)	Likelihood to rape and sexual assault perpetration (Likelihood to Rape Scale; Sexual Experiences Survey); Informational support for woman abuse (7 items)	Aggressor	Likelihood to rape and sexual assault perpetration; informational support for woman abuses; attitudes toward woman.	Intimate partner sexual assault	A significant positive relation between likelihood to rape and pornography consumption frequency; also between pornography consumption frequency and sexual assault perpetration. Frequency of pornography consumption was a significant predictor of likelihood to rape.

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Table 2. (continued)

1 st Author and Year	Type of Population	Study Design	Aim	Sample Size (N)	Participants Characteristics	Pornography Assessment	Violence Assessment	Assessed Individuals (Offenders and/or Victims)	Type of Violence	Violence (Taxonomy)	Outcome Data
Herbenick (2020)	Adults	Cross-sectional	To describe the association between past year pornography use frequency and dominant/target sexual behaviors; and the associations between lifetime range of pornography use and dominant/target sexual behaviors	2,227	Men 48.27%, woman 51.73%, age (18–60 years)	Viewing violent porn (yes/no) (1 item)	Dominant Sexual Behavior (1 item of frequency of different behaviors); target sexual behavior (1 item of frequency of different behaviors)	Victim and aggressor	Dominant sexual behavior; target sexual behavior	Intimate partner sexual abuse	In unadjusted models, we observed that more frequent past-year pornography use and a greater lifetime range of pornography accessed were significantly associated with engaging in both dominant and target sexual behaviors among all participants. After adjusting for age, age at first porn exposure, and current relationship status, the associations between pornography use and sexual behaviors, although attenuated, remain statistically significant. Among males, the frequency of use is significantly correlated with the two-item verbal coercion likelihood scale and with the likelihood of illegal coercion scale. Among men, pornography use frequency appears to be related to increased arousal to the explicit video and increased likelihood of each kind of coercion. Among the sub-sample of women, however, neither frequency of pornography use nor rape myth acceptance were directly related to increased verbal coercion likelihood.
Marshall (2020)	Young adults (undergraduates)	Cross-sectional	To examine whether sexual arousal mediates the relationship between the frequency of pornography use and sexual coercion	745	Male 36.60%, female 63.4%, age (M=21.6; SD=5.1)	Frequency of pornography use (1 item)	Illinois Rape Myth Acceptance Scale; Sexual Victimization (Sexual Experiences Scale)	Aggressor	Rape myths; sexual victimization	Intimate partner sexual coercion and intimate partner sexual assault	One unique finding from our study is that with each additional increase in pornography frequency score, the odds of reporting emotional abuse increased nearly 17%.
Spadine (2020)	Young adults (undergraduate students)	Cross-sectional	To investigate whether established risk factors for intimate partner violence also explain emotional abuse specifically	1,346	Male 44.4%, female 55.3%, (age: M=19.85; SD=2.23)	Frequency of pornography use (1 item)	Emotional abuse	Victim	Emotionally/verbally abuse	Intimate partner sexual abuse	

Table 3. Pornography Measures.

Category	Sub-Category	Number of Studies	References
Type of pornography	Magazine/book	25	Bonino et al. (2006); Brown and L'Engle (2009); Carr and VanDeusen (2004); Chang et al. (2016); D'Abreu and Krahé (2014); D'Abreu and Krahé (2016); Franklin (2013); Goodson et al. (2020); Hagen et al. (2018); Herbenick et al. (2020); Huntington et al. (2021); Kernsmith and Kernsmith (2009); Malamuth et al. (2000, 2012); Marshall et al. (2020); Mikorski and Szymanski (2017); Romito and Beltramini (2015); Taylor (2006); Thompson et al. (2015); Thompson and Morrison (2013); Tomaszewska and Krahé (2018); Tomaszewska and Krahé (2016); Vega and Malamuth (2007); Willoughby et al. (2016); Ybarra et al. (2011)
	Internet pornography	31	Brown and L'Engle (2009); Carr and VanDeusen (2004); Chang et al. (2016); D'Abreu and Krahé (2014); D'Abreu and Krahé (2016); de Heer et al. (2020); Franklin (2013); Gainsbury et al. (2019); Gonsalves et al. (2015); Goodson et al. (2020); Hagen et al. (2018); Herbenick et al. (2020); Huntington et al. (2020); Kernsmith and Kernsmith (2009); Lam and Chan (2007); Marshall et al. (2020); Mikorski and Szymanski (2017); Romito and Beltramini (2015); Rothman and Adhia (2015); Shin and Lee (2019); Simons et al. (2012); Stanley et al. (2018); Thompson et al. (2015); Thompson and Morrison (2013); Tomaszewska and Krahé (2018); Tomaszewska and Krahé (2016); Vangeel et al. (2020); Willoughby et al. (2016); Wolak et al. (2007); Ybarra et al. (2011)
Pornography access	Differentiation between wanted and unwanted pornography	2	Chang et al. (2016); Wolak et al. (2007)
Pornography Content	Specifically explored violent pornography	11	Baer et al. (2015); de Heer et al. (2020); Gonsalves et al. (2015); Goodson et al. (2020); Herbenick et al. (2020); Huntington et al. (2020); Kjellgren et al. (2011); Romito and Beltramini (2015); Rostad et al. (2019); Ybarra et al. (2011); Ybarra and Thompson (2018).
Type of measurement of pornography (some examples)	1 item	7	de Heer et al. (2020); Dong et al. (2013); Hagen et al. (2018); Kohut et al. (2020); Malamuth et al. (2012); Spadine et al. (2020); Wright and Tokunaga (2016)
	2 items	4	Huntington et al. (2020); Leemis et al. (2019); Simons et al. (2012); Stanley et al. (2018)
	3 items	2	Brown and L'Engle (2009); Huntington et al. (2020)
	4 items	2	Kernsmith and Kernsmith (2009); Tomaszewska and Krahé (2018)
	5 items	1	Carr and VanDeusen (2004)
	6 items	2	Franklin (2013); Goodson et al. (2020)
	7 items	2	Chang et al. (2016); Mikorski and Szymanski (2017)
	8 items	3	D'Abreu and Krahé (2014); D'Abreu and Krahé (2016); Lam and Chan (2007)
	46 items	1	Gonsalves et al. (2015)
	Validated instruments of pornography use and violent pornography	7 studies	Hald and Malamuth (2015); Hughes et al. (2020); Huntington et al. (2021); Mikorski and Szymanski (2017); Palermo et al. (2019); Rostad et al. (2019); Shin and Lee (2019)

et al., 2012; Spadine et al., 2020; Wright & Tokunaga, 2016), 2 items (Huntington et al., 2021; Leemis et al., 2019; Simons et al., 2012; Stanley et al., 2018), 3 items (Brown & L'Engle, 2009; Huntington et al., 2022), 4 items (Kernsmith & Kernsmith, 2009; Tomaszewska & Krahé, 2018), 5 items (Carr & VanDeusen, 2004), 6 items (Franklin, 2013; Goodson et al., 2020), 7 items (Chang et al., 2016; Mikorski & Szymanski, 2017), or 8 items (D'Abreu & Krahé, 2014; D'Abreu & Krahé, 2016; Lam & Chan, 2007), with one outlier assessing 46 items (Gonsalves et al., 2015). Seven studies

used validated instruments to assess the use of pornography or violent pornography (Hald & Malamuth, 2015; Hughes et al., 2020; Huntington et al., 2022; Mikorski & Szymanski, 2017; Palermo et al., 2019; Rostad et al., 2019; Shin & Lee, 2019).

Conceptualization and assessment of violence. Both the conceptualization and the assessment of violence used by the different studies have used multiple labels and methodologies, which are classified in Table 4.

Discussion

The findings of the different studies are classified in the present systematic review according to partial consideration of the taxonomy of intimate partner sexual violence proposed by Bagwell-Gray et al. (2015).

Association Between Pornography Use and Nonsexual Violence

Reading pornographic magazines does not seem to be associated with the presence of aggressive attitudes toward women (Taylor, 2006). However, multiple studies have observed an association between pornography use and nonsexual violence. For example, Huntington et al. (2021) observed that couples' joint viewing of pornography was associated with physical aggression victimization. This could be because couples who view pornography may be normalizing violence, and even carrying it out in nonsexual contexts, and also due to the effect that pornography can have on reducing intimacy and loss of emotional connection (Ashton et al., 2018). From a psychological perspective, DeKeseredy (2016) suggested that antisocial personality traits may motivate individuals to view pornography and harm the people they love or socially interact with (DeKeseredy, 2016).

An association between pornography use and harassment (Gainsbury et al., 2019), and between pornography use and polyvictimization/emotional abuse victimization has also been described (Dong et al., 2013; Spadine et al., 2020), although the possible existence of causality is unknown. One of the explanations provided by the authors for this finding is the fact that having experienced emotional abuse may produce a lower desire to engage in sexual relations, which could lead to a greater use of sexually explicit content (Spadine et al., 2020). Pornography use may, therefore, be a maladaptive coping strategy to cope with the negative emotions of victimization (Dong et al., 2013).

In this vein, Yang and Youn (2012) observed that exposure to sexually explicit content had an influence on aggressive behavior in a laboratory setting. More specifically, violent pornography was associated with greater aggressive behavior compared to nonviolent pornography, and this aggressive behavior resembled that derived from viewing sadomasochistic sexual content.

Association Between Pornography Use and Intimate Partner Sexual Assault and Coercion

Due to the heterogeneity in the conceptualization of sexual violence, the present systematic review has taken into account the taxonomy of intimate partner sexual violence suggested by Bagwell-Gray et al. (2015), which proposes considering as intimate sexual assault the following: "intimate partner sexual violence, forced sex, rape, sexual assault,

sexual coercion, sexual aggression, sexual victimization, and being made to penetrate someone else." Therefore, all studies that have evaluated any of the above factors have been included in this section.

Heterogeneity of results exists regarding the association between pornography use and intimate partner sexual assault and coercion. On the one hand, some articles failed to demonstrate this link. For example, a longitudinal study was unable to demonstrate a causal association between pornography use and sexual aggression (Kohut et al., 2020).

On the other hand, other studies partially support the association between pornography use and sexual aggression (Malamuth et al., 2000; Vega & Malamuth, 2007). More specifically, pornography use may have little predictive value in those men with a reduced risk of engaging in sexual aggression, whereas it would increase the risk of sexual aggression in those men with general and specific risk characteristics (Malamuth et al., 2000; Vega & Malamuth, 2007).

Finally, other studies support the existence of a significant association between these factors. For example, some studies argue that pornography use is associated with (and even predictive of) sexual aggression, teen dating violence, and experiences of sexual victimization (Carr & VanDeusen, 2004; D'Abreu & Krahé, 2016; Rostad et al., 2019; Shin & Lee, 2019). In this vein, other studies have specifically highlighted the link between violent/sadomasochistic pornography, the frequency of sexual aggression (Huntington et al., 2022; Ybarra et al., 2011), and the likelihood of raping (Foubert et al., 2011). Therefore, the association between pornography use and sexually aggressive behaviors seems to be driven by the violent content of the pornographic material (Ybarra et al., 2011). These associations may be due to male peer support theory (understood as the attachments to male peers and the resources they provide that perpetuate and legitimize various type of violence against women) (DeKeseredy & Schwartz, 2013). Following this reasoning, pornography may serve to legitimize violence through peer and sexual violent knowledge transmitted among men.

Regarding sexual coercion, it has been reported that women who use pornography more frequently are more likely to be sexually coercive (Hughes et al., 2020; Kernsmith & Kernsmith, 2009). In fact, pornography use appears to be associated with the female perpetration of all forms of coercion except intimidation and physical force (Kernsmith & Kernsmith, 2009). In the specific case of men, it has also been described that those who report regular consumption of pornography are more likely to report perpetration of sexually coercive behaviors and abuse (Simons et al., 2012; Stanley et al., 2018). It has been suggested that this may be due to the perception of women as sex objects promoted by pornography (Simons et al., 2012). Other authors have stressed that the association between pornography use and sexually coercive acts is modest (Baer et al., 2015). Regarding technology-based sexual coercion, it has been linked with exposure to pornography, as well as with earlier reports of

Table 4. Conceptualizations of Violence.

General Construct	Specific Construct	Assessment	References
Online violence	Technology-Based Coercion Behaviors	Technology-based coercion behaviors (3 items, 5 items, or dichotomous indicator)	Thompson and Morrison (2013); Hagen et al. (2018); Ybarra et al. (2011)
	Online abuse	Abuse online (1 item)	Gainsbury et al. (2019); Palermo et al. (2019)
	Cybersexual harassment/perpetration	Cybersexual harassment/perpetration (3-item scale)	Leemis et al. (2019)
Rape myths, and other beliefs/attitudes	Rape-supportive beliefs	The Rape-Supportive Beliefs Scale Burt's Rape Myths Acceptance Scale The Rape-Supportive Cognitions Scale	Thompson and Morrison (2013); Thompson et al. (2015); Palermo et al. (2019)
	Rape myths	Burt's Rape Myths Acceptance Scale Burt's Rape Myths Acceptance Scale (Blame-The-Victim Subscale) Illinois Rape Myth Acceptance Scale Rape Myth Acceptance Scale-Short Form Rape Myths Scale (7 items)	Taylor (2006); Vega and Malamuth (2007); Foubert et al. (2011); Emmers-Sommer (2018); Goodson et al. (2020); Marshall et al. (2020); Vangeel et al. (2020); Kjellgren et al. (2011); Rostad et al. (2019); Seabrook et al. (2019); Huntington (2020)
	Sexual aggression beliefs	Burt's Rape Myths Acceptance Scale	Carr and VanDeusen (2004)
	Sexual harassment perception	Dismissiveness of sexual harassment (11 items)	Leemis et al. (2019)
	Personal perceptions of abusive behaviors	Personal perceptions of abusive behaviors (12 items)	Huntington (2020)
	Acceptance of modern myths about sexual aggression	Acceptance of Modern Myths about Sexual Aggression	de Heer et al. (2020)
	Informational support for woman abuse	Informational support for woman abuse (7 items; informational support index)	Goodson et al. (2020)
	Attitudes supportive of violence against woman	Attitudes Supportive of Violence Against Women (5 items)	Wright and Tokunaga (2016)
	Attitudes toward sexual coercion	Attitudes toward sexual coercion (14 items)	Tomaszewska and Krahé (2016); Tomaszewska and Krahé (2018)
	Violent attitudes	Men's Sexual Self-Schema Scale (Powerful-Aggressive subscale)	Taylor (2006)
Violent attitudes	Acceptance of interpersonal violence.	Acceptance of interpersonal violence scale for males	Vega and Malamuth (2007)
	Peer approval of forced sex	Peer approval of forced sex (6 items)	Thompson et al. (2015)
	Adversarial attitudes toward woman	Adversarial Sexual Beliefs	Emmers-Sommer (2018)
	Multiple perpetrator rape interest	The Multiple-Perpetrator Rape Interest Scale	Palermo et al. (2019)
	Hypermasculinity	Hypermasculinity Index	Golde et al. (2000)
	Hostile masculinity	Personality measure	Malamuth et al. (2000)
	Masculinity norm	The playboy, power over women, and violence subscales of the Conformity to Masculine Norms Inventory (46 items)	Mikorski and Szymanski (2017)
	Acceptance of gendered sexual roles	Stereotypes about Males Sexuality Scale Hyperfemininity Scale	Vangeel et al. (2020)
	Gender stereotypic attitudes	Burt's Rape Myths Acceptance Scale	Kjellgren et al. (2011)
	Progressive gender role attitudes	Progressive gender role attitudes (10 items) Burt's Rape Myths Acceptance Scale	Brown and L'Engle (2009); Kjellgren et al. (2011)
Gender stereotypes	Gender equality	Gender equality (1 item)	Stanley et al. (2018)
	Gender equitable attitudes	Gender Equitable Norms Scale	Rostad et al. (2019)
	Sexual objectification	Sexual Objectification Scale Interpersonal Sexual Objectification Scale Notions of Women as Sex Objects (Four items)	Wright and Tokunaga (2016); Mikorski and Szymanski (2017); Seabrook et al. (2019)
	Aggressive behavioral tendencies	Aggressive Behavioral Tendencies (Dart-throwing decision task)	Yang and Youn (2012)
	Proclivity of engaging in sexually aggressive behaviors	The Likelihood to Rape Scale	Palermo et al. (2019)
	Likelihood of raping	Likelihood of Raping item (1 item) Items of Attraction to Sexual Aggression Scale Likelihood to Rape Scale	Carr and VanDeusen (2004); Foubert et al. (2011); Palermo et al. (2019); Goodson et al. (2020)
	Likelihood of sexual force	Likelihood of Sexual Force Questionnaire	de Heer et al. (2020)
	Sexual harassment proclivity	Sexual Harassment Proclivity Scale	Lam and Chan (2007)
	Hostility toward woman	Hostility Toward Woman Scale 8-item scale adapted from Hostility toward Women Scale Hostility Toward Women (12 items)	Malamuth et al. (2000); Carr and VanDeusen (2004); Vega and Malamuth (2007); Yoon and Knight (2011); Thompson and Morrison (2013); Thompson et al. (2015); Goodson et al. (2020)
	Dominant sexual behavior	Dominant Sexual Behavior (1 item of frequency of different behaviors)	Herbenick et al. (2020)
Sexual violence perpetration			

(continued)

Table 4. (continued)

General Construct	Specific Construct	Assessment	References
	Sexual coercion	Sexual Experiences Survey Five subscales of sexual coercive behaviors (Extortion behaviors; Deceit Behaviors; Obligation Behaviors; Emotional Manipulation and Force and intimidation); Sexual coercion Scale; Post-refusal Sexual Persistence (PSP) Scale	Carr and VanDeusen (2004); Kernsmith and Kernsmith (2009); Yoon and Knight (2011); Simons et al. (2012); Kjellgren et al. (2011)
	Sexual callousness	Hypermasculinity Index	Golde et al. (2000)
	Sexual violence	1 item of sexual violence 14 items on sexual violence 9 in-person items from American Association University of Woman and from the Adolescent Sexual Experiences Survey 5 items of Youth Internet Safety survey 2 items of frequency of sexual violence Sexual Violence Attitude (15 items) Sexual Violence (2 items)	Bonino et al. (2006); Romito and Beltramini (2011); Bekele et al. (2011); Ybarra and Thompson (2018); Romito and Beltramini (2015)
	Expressive aggression toward woman	Expressive Aggression Toward Woman (10 item scale)	Yoon and Knight (2011)
	Sexual aggression (perpetration)	Sexual Aggression (10-item scale of Koss and Oros 1982) Sexual Aggression and Victimization Scale Revised Sexual Experience Survey 4 items of sexual perpetration 14 items on sexual violence 9 in-person items from American Association University of Woman and from the Adolescent Sexual Experiences Survey 5 items of Youth Internet Safety Survey 1 item of type of sexual perpetration Perpetration of sexual aggression (14 items) Items from the Revised Conflict Tactics Scale	Malamuth et al. (2000); Vega and (2007); D'Abreu and Krahé (2014); Chang et al. (2016); Ybarra and Thompson (2018); Tomaszewska and Krahé (2018); Hagen et al. (2018); Stanley et al. (2018); Dawson et al. (2019) Huntington (2020); de Heer et al. (2020); Kohut et al. (2020)
	In-person sexual assault	Dichotomous indicator of in-person sexual assault	Ybarra et al. (2011)
	Physical and sexual abuse	2 items on physical and sexual abused combined	Wolak et al. (2007)
	Teen dating violence	The Conflict in Adolescent Dating Relationship Inventory Severity of Violence against Woman Scales Teen Dating Violence (9 items)	Romito and Beltramini (2015); Rothman and Adhia (2015); Rostad et al. (2019)
Victimization	Sexual harassment perpetration	Sexual Harassment one item	Holt et al. (2016)
	Polyvictimization	Juvenile Violence Questionnaire	Dong et al. (2013)
	Interpersonal victimization.	2 items on interpersonal victimization	Wolak et al. (2007)
	Sexual harassment victimization	Sexual Harassment (1 item)	Holt et al. (2016)
	Sexual aggression (victimization)	Items from the Revised Conflict Tactics Scale 1 item of type of sexual pressured	Huntington (2020); Stanley et al. (2018)
Other types of violence	Familiar violence	1 item of familiar violence	Romito and Beltramini (2011)
	Psychological violence	1 item of psychological violence	Romito and Beltramini (2011)
	Relational aggression	7 items from Couples Relational Aggression and Victimization Scale	Willoughby et al. (2016)
	Risky sexual aggression scripts	Risky Sexual Aggression Scripts (14 items)	Tomaszewska and Krahé (2016)
	Physical violence	1 item of physical violence	Herbenick et al. (2020)
	Peer pressure to have sex	Peer pressure to have sex (3 items)	Thompson et al. (2015)
	Emotional abuse	Emotional abuse (1 item)	Spadine et al. (2020)

higher levels of rape-supportive beliefs, peer approval of forced sex, and a high number of sexual partners (Thompson & Morrison, 2013).

Other authors have described an association between unwanted exposure to pornography and sexual harassment perpetration (Chang et al., 2016). For instance, Lam and Chan (2007) reported a link between online pornography use and sexual harassment proclivity (Lam & Chan, 2007). In addition, qualitative research has also observed increased levels of aggression and loss of temper following pornography use in male college students (Razzaq & Rafiq, 2019).

From the victim's perspective, pornography use appears to be associated with having experienced sexual violence in the case of women (Romito & Beltramini, 2011; Simons et al., 2012). One of the possible explanations suggested by the authors for this finding is that women resort to sexually explicit content to understand or even normalize the sexual violence they were previously victims of. Similarly, Tomaszewska and Krahé (2018) have described an indirect association between pornography use and sexual aggression victimization (Tomaszewska & Krahé, 2018). That is, a higher frequency of use of sexually explicit content appears

to be related to more risky sexual scripts and behaviors that, in turn, increase the likelihood of sexual aggression victimization.

In analyzing the role of peers, it has been suggested that sexually coercive females are more likely to have friends who like to watch violent pornography (Kjellgren et al., 2011).

Results revealed the salient role of pornography consumption frequency as a significant predictor of likelihood of rape in adults (Goodson et al., 2020), where men who watched mainstream pornography scored significantly higher on self-reported likelihood of raping (Foubert et al., 2011). In adolescents, pornography consumption is associated with the attempt to rape, but with nonsignificant odds (Ybarra & Thompson, 2018).

Finally, regarding teen dating violence, Rostad et al. (2019) suggested that exposure to violent pornography may be a significant correlate of all types of teen dating violence perpetration and victimization, especially for boys. More specifically, they observed that those girls exposed to violent pornography were more than 1.5 times as likely to perpetrate physical and threatening teen dating violence, while boys exposed to violent pornography were three times as likely to perpetrate sexual teen dating violence. For girls, exposure to violent pornography was marginally associated with sexual teen dating violence victimization, whereas boys exposed to this type of pornography were twice as likely to experience teen dating victimization, both sexual and physical, compared to boys not exposed to this type of pornography.

Association Between Pornography Use, Rape Myth, and Other Beliefs/Attitudes

The rape myth has been described as “the belief in stereotypical rape myths that endorse rape” (e.g., “a woman who goes to the home or apartment on their first date implies that she is willing to have sex”) (Taylor, 2006), and has been widely explored in terms of its association with pornography use. Some studies have reported that pornography use is associated with greater acceptance of objectification of women, which, in turn, is associated with greater acceptance of rape myths (Seabrook et al., 2019). Moreover, differences have been described between men and women, according to motivations, for consuming pornography in terms of rape myth acceptance. It has been suggested that women who use pornography for masturbation are less accepting of rape myths than men. Furthermore, both men and women who use pornography for masturbation appear to be less accepting of rape myths than those who use pornography for other purposes (Emmers-Sommer, 2018). However, other authors did not find, in the case of adolescence and emerging adulthood, that the use of online pornography was a predictor of rape myth acceptance, or of gendered sexual roles (Vangeel et al., 2020).

In addition to the acceptance of the rape myth, some studies have evaluated aspects such as attitudes supporting

violence against women or attitudes toward sexual coercion, also finding contradictory results. On the one hand, some authors have suggested that, for both young men and women, past pornography use significantly predicts attitudes supporting violence against women (Hald & Malamuth, 2015). In addition, in the case of men, it has been described that this association between pornography use and attitudes supporting violence against women is mediated by the perception of women as sex objects (Wright & Tokunaga, 2016). That is, men who consume pornography more frequently are more likely to perceive women as objects, and men with this perception are more likely to report attitudes supporting violence against women. It could be hypothesized that certain “hyper-erotic” subcultures such as pornography produce exaggerated sexual aspirations (DeKeseredy & Schwartz, 2013), and this may favor these gender hierarchies where women are perceived as objects and men are required to be dominant. In fact, some women’s perceptions of the effects of pornography focus on sexual objectification (Ashton et al., 2018).

Tomaszewska and Krahé (2016) did not find a direct association between pornography use and attitudes toward sexual coercion in high school students. However, the authors observed that pornography use was indirectly associated with attitudes condoning sexual coercion through its link with risky sexual scripts.

Both pornography use and rape-supportive attitudes can be understood as predictors of the use of verbal coercion tactics in the case of men (Marshall et al., 2020).

Other authors have failed to find a significant association between pornography use and rape proclivity in young adults (Palermo et al., 2019). Taylor (2006) did not find an association between reading pornographic magazines and the presence of more aggressive sexual self-schema. Moreover, the acceptance of modern myths about sexual aggression was not significantly correlated with pornography consumption (de Heer et al., 2020).

Limitations and Future Studies

The main limitations of the studies included in the review were the following: (1) several articles did not provide participants with a specific definition of pornography, which can lead to bias; (2) the assessment of pornography use was carried out in multiple studies only through isolated unvalidated dichotomic items that have not taken into account either the modality (e.g., online, magazines) or the category (e.g., violent pornographic contents) of pornographic materials and, therefore, it is imprecise and questionable; (3) assessments were self-reported, with the consequent desirability bias that this entails, especially taking into account that two constructs that may be considered as socially undesirable behaviors by certain participants were evaluated (pornography use and violence); (4) both pornography use and violence are multifactorial constructs and most studies did not consider possible

associated factors; (5) a cross-sectional design did not allow for establishing a causal relationship between pornography use and violence; (6) many studies included small sample sizes, so the results are neither representative nor generalizable; (7) since most of the included studies were conducted in the United States with Caucasian participants, there is a notable cultural bias and caution is needed when generalizing the findings to individuals from other cultures; and (8) the lack of a comprehensive and consensus-based theoretical framework on pornography and violence hinders the comparison of findings from different studies.

More longitudinal studies with larger sample sizes and more representative international samples are needed to enable the generalization of the results. It is also essential that future research attempts to unify the various theoretical frameworks that currently exist on pornography use and types of violence. Furthermore, considering that there is currently a vast amount of sexually explicit material, future studies should explore in depth the specific contents and whether there are differences between them in their association with violence.

In addition to the limitations of the different studies, the limitations of the present systematic review should be highlighted. The central limitations were as follows: (a) specific populations were not considered, such as women who had sought help for abuse or offenders who were in prison, and therefore the association between pornography use and violence in these populations should be explored in depth; (b) violence was categorized following the theoretical model proposed by Bagwell-Gray et al., (2015) although there are multiple theoretical models and there is still no absolute consensus on which of them is the most accurate and comprehensive; and (c) publications that were not in English and qualitative studies were discarded so that possible relevant contributions in other languages and designs were omitted.

To summarize, we believe that for future studies addressing the association between pornography use and violence it would be of interest to (1) use a clear definition of pornography based on international consensus (McKee et al., 2020); (2) differentiate between pornography use and Problematic Pornography Use using scales that are already standardized such as the Problematic Pornography Consumption Scale (Böthe et al., 2018); (3) establish a clear conceptualization of the concepts of violence and use a validated scale that measures the construct; (4) use standardized scales instead of self-made items; (5) design longitudinal studies; and (6) delve into more specific populations such as clinical populations, studies only with women, non-heterosexual persons, and sexual aggressors.

Conclusions

There have been various studies conducted in recent years regarding the association between pornography use and violence, but the results should be interpreted with caution. Several longitudinal and cross-sectional studies have suggested an association between pornography and violence, although the heterogeneity of methodologies and conceptualizations used greatly hinders the comparison of results. Therefore, the association between different types of violence and pornography use requires further in-depth research to unify pornography use and violence conceptualizations and categorizations. This could help us to better understand the specific link between the two constructs and to promote prevention and intervention plans addressing these factors.

Implications

- This review offers a unified view of the conceptualization of pornography and violence, with the aim of establishing standardized protocols for measures to be used in studies in this field, with more robust properties.
- The use of pornography and the increase in sexual violence is a topic of debate at an international level, and this review helps to clarify the association between these two variables.
- The findings of this review can serve as a starting point for the establishment of prevention and intervention programs regarding the possible link between pornography and different types of violence.

Critical Findings

Association Between Pornography Use and Nonsexual Violence

- Pornography use appears to be related to non-physical violence.
- The use of pornography in couples can normalize violence even in nonsexual contexts.
- The use of pornographic magazines does not seem to be related to aggressive attitudes toward women.
- The use of violent pornography (specifically sadomasochistic content) is associated with an increased tendency to aggressive behavior.

Association Between Pornography Use and Intimate Partner Sexual Assault and Coercion

- A great heterogeneity is observed in the existing results associating pornography use and intimate partner sexual assault and coercion.
- Cross-sectional studies showed that pornography use is associated with (and even predictive of) sexual aggression, teen dating violence, and experiences of sexual victimization.
- Regarding sexual coercion, it has been reported that women who use pornography more frequently are more likely to be sexually coercive.
- Longitudinal studies do not demonstrate a causal relationship between pornography use and sexual aggression.
- Exposure to pornography has been linked to sexual coercion, as well as higher levels of rape-supportive beliefs, peer approval of forced sex, and a high number of sexual partners.
- Men who watched mainstream pornography scored significantly higher on self-reported likelihood of raping.

Association Between Pornography Use, Rape Myth, and Other Beliefs/Attitudes

- Pornography use may interfere with cognitive schemas about gender roles and perceived sexual hierarchies.
- Pornography use is associated with greater acceptance of objectification of women.
- Other studies did not find, in the case of adolescence and emerging adulthood, that the use of online pornography was a predictor of rape myth acceptance, or of gendered sexual roles.
- Pornography use and rape-supportive attitudes can be understood as predictors of the use of verbal coercion tactics in the case of men.

Limitations and Future Studies

- The research to date has methodological shortcomings that need to be addressed in future research.
- Both pornography use and violence are multifactorial constructs, and most studies did not consider possible associated factors.
- There are mediating factors such as male hostility, insensitivity, and/or alcohol use that will be interesting to consider in the association between pornography use and violence.

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