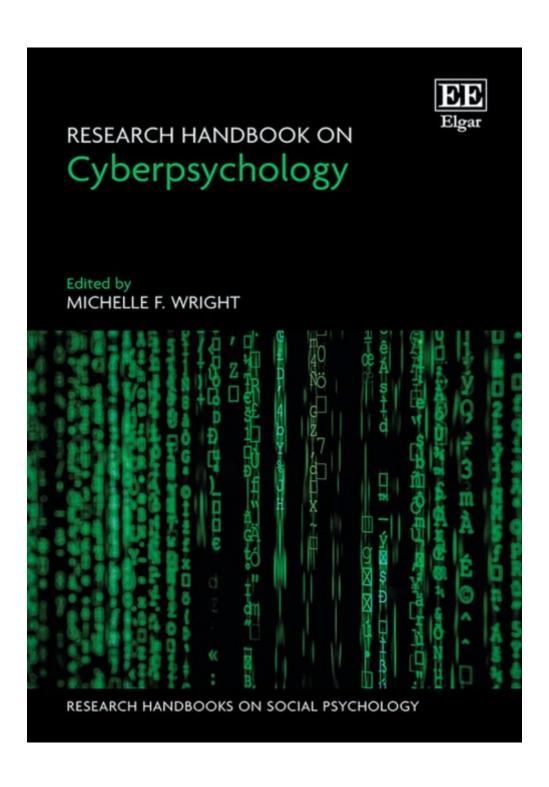
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5. Cyberpornography

Nicola Döring, Thuy Dung Le and Dan J. Miller

INTRODUCTION

The internet and digital media are widely used for the production, distribution, marketing, and consumption of pornography. It could even be said that *cyberpornography* (also known as online pornography or digital pornography) has become a ubiquitous phenomenon, accessible anywhere, anytime, and by almost anyone. Studies show that cyberpornography is regularly consumed by large segments of the global population, including people of all genders and sexual orientations. Many users begin accessing pornography in early adolescence. The most frequently reported motivations for actively using online pornography are sexual pleasure and curiosity. Unwanted or accidental exposure to cyberpornography is also common. The ubiquity of cyberpornography has led researchers to describe it as "a common, perhaps normal, part of modern sexuality" (Grubbs et al., 2023, p. 24).

The normalization of cyberpornography has raised serious concerns in the field of psychology and beyond. From a clinical psychology perspective, problematic online pornography use (also referred to as internet pornography use disorder or internet pornography addiction) is a major concern (de Alarcón et al., 2019). Other concerns relate to the potentially harmful effects of pornography, such as sexism and sexual aggression, epidemiologically risky sexual behavior, body and sex-life dissatisfaction, and relationship conflict. Some researchers and policymakers, such as lawmakers in the US state of Utah, have even described the spread of cyberpornography as a "major public health crisis" (Nelson & Rothman, 2020). While previous research has principally focused on negative effects, there is now a growing body of research that also explores and confirms the positive effects of cyberpornography use (e.g., in terms of sexual exploration, identity validation, open couple communication, sexual satisfaction, and stress reduction (Döring, 2009; Kohut et al., 2017; Litsou et al., 2021).

While psychological research tends to focus on the uses and effects of cyberpornography, from a media and communication perspective, it is also relevant to examine the content of cyberpornographic material across subgenres (Döring & Miller, 2022a; Miller & McBain, 2022). Finally, the production of cyberpornography, by both professionals and amateurs, raises aesthetic, ethical, legal, economic, social, and psychological issues. Therefore, this chapter will provide a multidimensional and interdisciplinary literature review that follows the logic of the communication process: We address the production of cyberpornography, then describe its subgenres and their contents, before characterizing its users and uses, and finally, its positive and negative effects. Interventions to mitigate harm from cyberpornography are also discussed. However, to provide context to this later discussion we first provide a definition of cyberpornography and a brief introduction to psychological approaches to cyberpornography research.

DEFINITION OF AND RESEARCH REVIEWS ON **CYBERPORNOGRAPHY**

How is cyberpornography defined? And how has the state of cyberpornography research been summarized in previous research reviews?

Definition

Some approaches to defining pornography highlight its content, while others highlight its intended function. The following widely accepted definition includes both of these elements: pornography is an umbrella term for media depictions of sexual acts and genitals (sexual content criterion) that are produced and used primarily to elicit sexual arousal in the audience (sexual intention or function criterion, e.g., Hald & Malamuth, 2008, p. 616; Peter & Valkenburg, 2016, p. 510). For researchers, lawmakers, and laypeople, it can be difficult to make a clear distinction between hardcore pornographic material, such as pornographic films (which typically are banned from being broadcast on free TV), and softcore depictions, such as erotic films (which may be allowed on free TV). Accordingly, some researchers prefer the more inclusive term sexually explicit material (SEM), as it encompasses both pornography and erotica.

In the digital age, most pornographic material in circulation is in digital form, and hence can be referred to as cyberpornography, online pornography, or digital pornography. To include both hardcore pornographic and softcore erotic digital material, the term sexually explicit internet material (SEIM) is also used in the literature.

The digitalization of pornography means that older pornographic content may now come in a new form. For example, pornographic films that were first distributed in the 1980s on VCR (video cassette recorder) tape, then later on DVD (digital video disc), may now be available for download or streaming on websites. But the digitalization of pornography also means that completely new forms of pornography have developed, such as computer-generated animated pornography, VR (virtual reality) pornography—which allows for three-dimensional immersion with a headset display—and AI (artificial intelligence) generated pornography, which makes it possible to generate pornographic material of any person based on a facial photograph alone. In addition, digital technology allows laypeople with minimal equipment (e.g., nothing more than a smartphone) to produce high-quality pornographic content. In the literature, this is referred to as user-generated pornography, DIY (do it yourself) pornography, selfpornography, or amateur pornography (in contrast to professionally produced pornography).

These technological developments have led researchers to add an additional criterion to the established definition of (cyber)pornography, namely the consent criterion (Ashton et al., 2019, p. 144). According to this understanding, the term (cyber)pornography is reserved to refer to the production, distribution, and use of (digital) pornographic material among adults, based on the informed consent of all individuals involved. Non-consensual pornography (e.g., child pornography, revenge pornography, deepfake pornography) would therefore not be referred to as pornography at all, but rather would be labeled as acts of consent violation and violence. Instead, terms like depictions of sexual violence and/or image-based sexual abuse are used (e.g., Eaton & McGlynn, 2020). For example, increasingly research and media reporting employs the term images of child sexual abuse in place of child pornography. The current chapter focuses primarily on consensual practices, rather than sexual violence. However, issues of consent are still relevant in the context of the production, contents, users, and effects of cyberpornography.

Finally, it is important to recognize that cyberpornography is not a homogeneous media genre. Pornographic material exists in various media formats (text, photo, animation, game, audio, video), with video pornography being the most popular format (Solano et al., 2020). There are also different subgenres of cyberpornography that appeal to different audiences, offer different content, and are produced under different conditions. Historically, maleoriented mainstream video pornography has received the bulk of the research attention. This subgenre is aimed primarily at heterosexual male audiences. It privileges male pleasure and often depicts women as sexual objects for the male gaze, passively subjected to men's actions, demands, and aggressions (Williams, 1999). Traditionally, the larger production studios have focused on producing male-orientated mainstream content. Since the home video boom of the 1980s, female-oriented non-mainstream video pornography has developed many subvariations (e.g., heterosexual women's and couples' pornography, feminist pornography, authentic lesbian pornography, and queer pornography), often being produced by small indie studios (Liberman, 2015; Taormino et al., 2013). Within each subgenre different content rubrics or categories are to be found (e.g., "Big Tits", "Small Tits", "Bisexual Male", "Solo Male" on PornHub).

Research Reviews

Given the large and growing number of empirical studies on the production, contents, uses, and effects of cyberpornography, research synthesis is important. Studies on selected psychological topics within cyberpornography research have been summarized in research reviews, for example, on the contents of mainstream pornography (e.g., synthesis of 28 content analysis studies: Miller & McBain, 2022) or on the prevalence of withdrawal-like symptoms in problematic pornography use (e.g., synthesis of 14 studies with N = 31,009 participants: Roza et al., 2024a).

For some topics, such as adolescent pornography use and sexting, there are several research reviews that have been summarized in a meta-review or "review of reviews" (overview of 11 reviews: Raine et al., 2020). There are also several meta-analyses that provide aggregations of comparable statistical parameters identified in previous studies, such as correlation coefficients between pornography use on the one hand and measures of aggression on the other (e.g., Wright et al., 2016; Ferguson & Hartley, 2022) or measures of body and relationship satisfaction (Wright et al., 2017). Research reviews and meta-analyses can usually provide some consensus, but often also reveal inconsistent results. In the area of research synthesis, deficits in conceptual clarity and lack of standardization of measures are common concerns.

This chapter is neither a statistical meta-analysis nor a systematic review of a selected topic. Instead, the current narrative review takes a scoping approach, attempting to cover a broad range of issues and integrate evidence from heterogeneous fields of research. By combining broad cross-study descriptions with details from selected studies, we hope to provide readers with an accessible overview of cyberpornography research.

PSYCHOLOGICAL APPROACHES TO CYBERPORNOGRAPHY

Cyberpornography is a multifaceted phenomenon, and therefore its scientific investigation takes place across different academic disciplines, including literary and film studies, gender and queer studies, philosophy, criminology, sociology, education, computer science, public health, and psychology. This section briefly outlines the theoretical, methodological, and practical approaches to cyberpornography research rooted in psychology.

Theoretical Approaches

There is no single psychological theory that can explain all aspects of cyberpornography. Instead, different psychological theories are relevant to the study of different dimensions of cyberpornography. Selected key theories are mentioned below.

- Production and producers of cyberpornography: Psychological theories of selfpresentation and impression management (Leary, 1996) can be used to analyze the motives of those who produce and disseminate sexualized images of themselves in the course of sexting, online dating, or self-pornography.
- Subgenres and content rubrics of cyberpornography: Psychological theories of gender stereotyping (Fiske et al., 2002) and social gender roles (Eagly & Wood, 2013) can be applied to the analysis of cyberpornographic content from different genres (e.g., malecentric mainstream pornography versus feminist pornography) to examine the extent and characteristics of gender stereotyping (e.g., regarding the degree to which pornographic content affirms cultural notions of men as active sexual partners, initiating and leading sexual interactions, and women as passive sexual partners).
- Users and uses of cyberpornography: To explore the motivations of solitary and partnered cyberpornography consumption, uses and gratifications theory of media use (Haridakis & Humphries, 2019; Katz et al., 1973) can be applied. This framework allows researchers to examine pornography use through the lens of psychological needs (e.g., need for information, identity validation, entertainment, social comparison, escapism).
- Positive and negative effects of cyberpornography: The most popular general theory of media effects, social cognitive theory (Bandura, 2001)—which predicts that media users will imitate media role models under certain conditions—is often applied to pornography. Sexual script theory (SST; Gagnon & Simon, 1973; Simon & Gagnon, 2003) posits that the course of sexual interactions follows certain "scripts" and that these scripts are socially constructed. Under SST, it could be predicted that repeated exposure to pornographic scripts will shape viewers' scripts. The Acquisition, Activation, and Application Model of Media Sexual Socialization (3AM) was developed as a specification of SST to the influence of media (Wright, 2011). According to 3AM, sexually explicit media content shapes cognitive schemas about sexuality in three ways: Pornography can promote the creation of new schemas (schema acquisition), it can prime existing schemas (schema activation), and it can facilitate the use of existing schemas to inform attitudes and behaviors (schema application).

Methodological Approaches

A wide range of qualitative and quantitative research approaches established in psychology and related disciplines are applied in cyberpornography research. Selected key methodologies are outlined below:

- Production and producers of cyberpsychology: To explore self-pornographers' use of sexualized photos and videos for self-presentation and impression formation, quantitative surveys can be administered. To study the physical and psychological well-being of professional pornography performers, ethnographic field research, including qualitative observations and interviews, can be conducted with performers working for production companies of various sizes across various nations.
- Subgenres and content rubrics of cyberpsychology: Methods of quantitative and qualitative manual media content analysis can be used to extract the manifest content and latent meanings from samples of pornographic material (e.g., several hundred videos). Automated image and text analysis methods can be applied to study extremely large samples of digital pornography, such as several hundred thousand pornographic stories from a story server (so-called big data).
- Users and uses of cyberpsychology: Both qualitative interviews and quantitative surveys can be used to examine patterns of use. The degree of bias within this kind of self-report data is debated. Objective information about the time and duration of pornography use. preferred genres, or order of content reception can be obtained through digital trace data such as server logs. In addition, mobile research apps are being developed that allow smartphone users to anonymously donate their web browsing data to researchers.
- Positive and negative effects of cyberpsychology: Qualitative interviews and quantitative survey studies can be used to explore users' subjective experiences of the effects (both negative and positive) of their cyberpornography use. However, only longitudinal and experimental research designs can demonstrate cause-effect relationships. Effect measures in such designs can be standardized psychometric scales but also measures of physiological response (e.g., heart rate, eye movement, brain activity, and genital blood flow) during the use of different subgenres and content rubrics of pornographic versus non-pornographic material.

Practical Approaches

Whenever people experience problems related to their use of, or exposure to, cyberpornography, clinical psychologists can help in their roles as mental health counselors, addiction therapists, or family and couples therapists, by applying evidence-based intervention methods (Roza et al., 2024b). Similarly, psychologists working in education (e.g., as school psychologists) can contribute to sexuality and relationship education, including the development of pornography literacy, to mitigate issues related to the use and potential harms of pornography (Baker, 2016; Dawson et al., 2020).

PRODUCTION AND PROCEDURES OF CYBERPORNOGRAPHY

Following the logical order of the media communication process, psychological research on cyberpornography begins with the study of production and producers. While production has many technological, economic, legal, and organizational dimensions, from a psychological perspective, the motivations, experiences, and well-being of professional and amateur pornographic performers/actors are of central interest.

Professional Production

One perspective on the producers of pornography (and other types of sex workers) is that they are disproportionately underprivileged individuals (e.g., those affected by poverty or traumatic childhood experiences) who engage in the production of pornography due to a lack of income alternatives, and who may be further exploited in the male-dominated mainstream pornography industry. Research on the health and well-being of mainstream pornography performers is sparse (Jarke, 2022). Of the research that is available, results are mixed. Previous studies have found both evidence of (a) pornography performers being at a high risk for mental health problems (Grudzen et al., 2009) and (b) female pornography performers having similar or greater well-being compared to a matched comparison sample (Griffith et al., 2013).

Studies from the field of non-mainstream, feminist and queer pornography—content typically produced by indie studios with an eye to ethical and fair production conditions mostly point to positive performer experiences. Queer performers report self-validation through their work, enjoy being part of a community of performers, and consider their work to be meaningful on a personal and political level (e.g., Jackson & McCubbin, 2016).

A growing number of professional porn performers are now working independently. They produce erotic and pornographic material themselves (e.g., they shoot solo scenes or collaborate with their spouses) and market that material on sex-work-friendly social media platforms, such as OnlyFans, along with other online services (e.g., live webcam shows). Independent porn entrepreneurs ("sexpreneurs") have complete control over factors such as the set, sexual acts performed on camera, and selection of co-stars. However, they require a wide range of skills, work long hours, are dependent on the terms and conditions of the social media platforms they use to market their content, and, like other sex workers, are subject to social stigma and discrimination (Vickers & Brooks-Gordon, 2023).

To better understand the experiences of professional pornography performers and producers, more research is needed across different sectors of the digital pornography industry. It is also necessary to consider the different opportunities and challenges of this type of sex work, not all of which are inherent in the act of performing sex on camera, but depend on social contexts and societal norms (e.g., social acceptance or stigmatization, alternative income options).

Amateur Production

The fact that a growing number of people are engaging in the noncommercial production, exchange, and publication of erotic and pornographic photos and videos of themselves has raised many psychological questions about motivations, experiences, and effects.

One strand of research focuses on the negative experiences and impositions of what is referred to as self-objectification and self-sexualization. It is often argued that young people, in particular, may be naively imitating professional pornographers and/or feeling pressured by romantic and sexual partners to provide them with self-pornography. Against this background, some experts even call for "anti-sexting" campaigns to prevent young people from producing revealing images of themselves (see Döring, 2014, for a critical review of such sexting abstinence campaigns).

Another strand of research frames sexual self-presentation and communication as part of normal and healthy sexual expression and intimacy. Studies of people across age, gender identity, and sexual identity groups show that the production and exchange of sexual selfimages is experienced as fun, validating, and socially bonding, when consensual (e.g., Tiidenberg, 2017). For queer youth and adults in particular, cyberspace is a primary means of finding socio-sexual community. Hence, banning sexual expression would be a restriction of these groups' sexual rights (Albury & Byron, 2014). At the same time, queer youth need protection as their high involvement in online sexual communication can make them particularly vulnerable to image-based abuse.

SUBGENRES AND CONTENT RUBRICS OF CYBERPORNOGRAPHY

The potential effects of pornography depend somewhat on the content of this media genre. For example, concerns that pornographic material normalizes or promotes hierarchical gender relations or risky and rough sexual activity are based on specific assumptions about how gender relations and sex are depicted in pornography. In order to know exactly how sexuality is represented in pornography (as opposed to, for example, in romantic films) and how these representations have changed over time, systematic analyses of representative samples of pornographic material are necessary. Furthermore, when claims are made about the content of cyberpornography, it is necessary to differentiate between pornographic subgenres, such as male-centric mainstream pornography versus female/queer-centric non-mainstream pornographies (Williams, 1999). In addition, within the subgenres, there are different content rubrics to differentiate.

Subgenres

The most prevalent type or subgenre of pornography is male-centric mainstream video pornography, traditionally produced for, and marketed to, heterosexual male audiences (Williams, 1999). Mostly produced by larger companies and distributed on leading pornography platforms (such as PornHub), this type of pornography typically focuses on male pleasure, depicting women as objects of male performers' sexual acts, demands, or even aggressions. A research review identified a total of 27 content analyses of samples of mainstream pornography published between 2005 and 2020 (Miller & McBain, 2022). Consistent with the idea that mainstream pornography depicts sexuality in a way that privileges male pleasure, the review showed that fellatio, external ejaculation on the woman's face or body, condomless vaginal intercourse, and rough practices, such as the spanking of women, were common. While mainstream pornography shows most male protagonists orgasming (78%), the representation of orgasm among female protagonists is comparatively rare (18%; Séguin et al., 2018).

The second subgenre to be discussed, non-mainstream pornography, covers a diverse array of branches including female-oriented heterosexual pornography (which focuses on attractive male performers), feminist pornography (which focuses on female sexual pleasure), authentic lesbian pornography (which focuses on lesbian-identified performers), and queer pornography (which includes diverse casts of performers regarding gender expression, sexual identity, body types, race, and disability). Each branch within this subgenre appeals to different audiences because of the content it privileges. For example, authentic lesbian pornography purposefully does not feature male performers, while queer pornography often features cis and trans men. While much mainstream video pornography is freely available (in some cases in preview form), non-mainstream pornography is usually behind a paywall. Non-mainstream pornography is also typically not marketed through the major pornography portals, but rather on separate sites that require a subscription (e.g., QueerPorn.tv). People who do not have a credit card (e.g., minors) or who do not have the budget for adult entertainment may be excluded from exploring non-mainstream pornography because of this.

To date, few studies have systematically compared mainstream and non-mainstream pornography. Existing data, however, support the idea that non-mainstream pornography depicts women as less objectified and more agentic (Fritz & Paul, 2017).

Content Rubrics

The broad characterization of different pornographic subgenres (e.g., male-centric mainstream pornography, female-/queer-centric non-mainstream pornography) needs to be further nuanced. Within mainstream pornography, for example, different content rubrics are available according to person constellations (e.g., solo, threesome, group sex), body characteristics (e.g., Black, tall, hairy), sexual activities (e.g., oral, anal), and context (e.g., outdoor, menstruation). To explore which content rubrics are popular today, one can observe different mainstream pornography platforms and their user interfaces (e.g., website landing pages and content search categories). According to Similarweb's (2024) "Top Websites Ranking", the following pornography platforms are the most popular worldwide: Xvideos (rank 11), PornHub (rank 15), XNXX (rank 19), XHamster (rank 27). Depending on which platforms users visit, what search terms they use, what content they and other users view and like, and how the platform algorithm is designed, different content rubrics will be more or less visible to them.

Consideration of content rubrics is important because some content analyses of mainstream pornography have yielded results that are inconsistent with the assumption that this subgenre always affirms traditional gender roles (e.g., depicting male dominance and aggression). An example of the heterogeneity of content rubrics within mainstream pornography is the so-called MILF ("mother I'd like to fuck") rubric, which depicts interactions between young men and women who are supposedly the same age as their mothers. MILF is not a niche rubric. In fact, "MILF" was the second most popular search term and the fifth most popular content category on PornHub in 2023, ranking fourth among male consumers and seventh among female consumers (PornHub, 2023). Content analyses of the MILF category showed that the female protagonists in this category usually initiated and directed sexual interactions with their supposedly less experienced partners, thus subverting the stereotype of female sexual passivity (Vannier et al., 2014). The MILF fantasy is not about men dominating women, but about men being desired and sexually educated by knowledgeable women. Thus, when evaluating the validity of claims made in content analysis studies it is important to consider

the sampling strategy used: Some studies sample the most popular video clips from one pornography platform and infer cross-rubric claims from this, while others analyze content from specific content rubrics separately.

In addition to sampling strategies, the validity of claims made from content analyses of sexually explicit internet material also depends on the definition and operationalization of measured variables such as dominant, aggressive, or degrading behavior. While some researchers define certain activities as inherently degrading or violent (e.g., spanking, anal sex), others code violence or degradation only when the activity is represented as nonconsensual (Döring & Miller, 2022b, 2022c). As a result, reported prevalence rates of coded aggression or degradation in pornography vary widely. The idea that mainstream pornography depicts male dominance over women more frequently than other types of pornography is not consistent with empirical findings comparing mixed-sex scenes with same-sex scenes from the mainstream platform Pornhub. A content analysis found that same-sex (i.e., gay and lesbian) scenes contained more displays of aggression than mixed-sex (i.e., heterosexual) scenes, but also more displays of affection and pleasure (Seida & Shor, 2021).

Researchers have debated the meanings of performed or described aggression in pornography in relation to the content of women's and men's sexual fantasies, which frequently include aggressive elements. Some researchers argue that fictional or imagined aggression (as opposed to real-life violence) may be a safe and healthy way to explore the dangerous and forbidden, cope with anxiety or trauma, and symbolize strong and overpowering sexual desire (e.g., Döring, 2020).

More content-analytic research is needed covering and contrasting different content rubrics of pornography. Researchers also need to reflect on the operationalizations of key concepts such as dominance or aggression in the context of pornography, a fictional media genre designed to appeal to sexual fantasy.

USERS AND USES OF CYBERPORNOGRAPHY

In the digital age, digital pornographic content is ubiquitous. Does this mean that everyone has become a pornography consumer, or do certain demographic groups use pornography more? Patterns of use, such as sporadic versus regular consumption, are also relevant to concerns about the negative effects of pornography, such as pornography addiction.

Users

Population-wide surveys in several countries show that large segments of the population use pornography. The majority of men use pornography, and about half of men under the age of 25 are weekly users (Miller et al., 2020). A growing number of women view video pornography, as documented by surveys (Litsou et al., 2021) and pornography server statistics: In the Western world (e.g., the US, Canada, the UK, Sweden, Germany), the ratio of male to female PornHub users is approximately 70% to 30% (PornHub, 2023). Although technically "adult content", cyberpornography is also accessed by minors. Many young people today begin actively seeking out and using digital pornography in early adolescence, and minors also report unwanted exposure (Peter & Valkenburg, 2016). The proportion of pornography users is higher among queer people than among heterosexual people (Miller et al., 2020). Cultural

and religious contexts may moderate pornography use. However, it appears that many people from cultures and religions that discourage or condemn pornography and masturbation still interact with pornography to some degree (although they often experience moral conflict over doing so; Grubbs et al., 2019).

Uses

Surveys show that about 70% of pornography users have a low-frequency unproblematic use pattern, 25% have a high-frequency unproblematic pattern, and about 5% have a high-frequency problematic pattern (Bőthe et al., 2020). A recent large-scale international survey found that problematic pornography use differed by gender (highest among men, followed by gender-diverse individuals, and finally women) but not sexual orientation (Bőthe et al., 2024). Problematic use is defined as a pattern of use that is experienced as addictive, cannot be controlled, and brings about negative consequences through the neglect of daily commitments at work and/or at home.

Apart from considering the intensity of use, it is also important to consider which type of pornographic subgenre and content rubric is consumed (Hald & Štulhofer, 2016). For example, trans people deliberately choose trans pornography, indicating a potential identity validation and empowerment effect (Pavanello Decaro et al., 2023). At the same time, misogynistic and aggressive men tend to select more violent pornographic content and interpret it in a particular way, suggesting a potential criminogenic effect (Malamuth et al., 2000). In addition to video pornography, girls and women also use audio and text pornography such as erotic fan fiction (e.g., Döring, 2020).

The typical situational context of pornography use is solitary, masturbatory use. However, some couples watch pornography together (Hertlein et al., 2020; Miller et al., 2020). Adolescents report viewing and discussing pornography with same-sex friends as part of growing up and trying to make sense of sexuality (Ševčíková & Daneback, 2014). There are also occasions of "public viewing" with strangers, such as in sex clubs or at porn film festivals.

POSITIVE AND NEGATIVE EFFECTS OF CYBERPORNOGRAPHY

The uses and gratifications model of media use (Katz et al., 1973; Haridakis & Humphries, 2019) explains that people turn to selected media content, including pornographic content, because it fulfills psychological needs. When people receive gratifications—which in the case of pornography may include sexual arousal, entertainment, and information—they are likely to perceive positive effects. However, some users also report self-perceived negative effects, such as feeling pressured by pornographic scripts, addiction, and moral disgust. Research has not fully elucidated which environmental, situational, and personal factors are associated with which types of positive or negative effects.

Positive Effects

When people are asked about the effects of pornography on themselves, such as their body image, sexual satisfaction, relationship quality, or satisfaction with life in general, reports of neutral and positive effects tend to predominate (Döring & Mohseni, 2018; Kohut et al.,

2017; Miller et al., 2018). Concerns about the negative effects of pornography may reflect the so-called *third-person effect* (Davison, 1983; Perloff & Shen, 2023): The fact that people tend to attribute negative media effects more readily *to others* than to themselves. This third-person effect is rooted in the self-serving bias that other people may be more susceptible to negative media influences because they are younger, more naive, less educated, less critical, less self-reflexive, or less mentally and emotionally stable. Researchers have examined how people's beliefs about how pornography affects themselves versus others are linked to attitudes about regulation and censorship, with mixed results depending on, for example, cultural contexts and age (e.g., Rojas et al., 1996; Zhou & Zhang, 2023).

Most pornography users simultaneously deny negative effects on themselves, while also explicitly reporting positive effects, such as improved body image and self-validation, sexual pleasure and satisfaction, more open sexual communication, and sexual exploration between couples (e.g., Hertlein et al., 2020). Minoritized gender and sexual identity groups often report use of non-mainstream pornography to have empowering effects (e.g., Pavanello Decaro et al., 2023). Specifically, when users can successfully match their individual preferences with the selected type and content rubric of pornography, while also reconciling their pornography use with their moral beliefs and the expectations of their romantic and sexual partners, positive effects are likely to result. Pornography use may not be an issue of conflict between couples if both partners agree that solitary and/or partnered pornography use is considered a normal part of their sexuality.

Negative Effects

Most studies of the effects of pornography are based on self-reported data. It can be argued that self-reported data is limiting, as people may be unaware of negative effects of pornography use, such as the internalization of unrealistic beauty standards and gender role stereotypes, habituation to unsafe practices such as condomless sex, and the normalization of promiscuity, sex without explicit consent, and rough/extreme sexual practices. Users being unaware of, or denying, negative effects does not mean that they don't exist.

Experimental and nonexperimental evidence, as well as expert opinion, suggests effects or associations between pornography use and a variety of problematic attitudes and behaviors, such as those mentioned above (e.g., Ballester et al., 2022; Peter & Valkenburg, 2016). Whether pornography causally contributes to sexual violence remains unclear, as most studies are correlational (e.g., Wright et al., 2016). Some researchers point out that while there has been an overall increase in pornography use over the past few decades, the sexual crime rate has actually decreased over this period (Ferguson & Hartley, 2022). However, such macro-level associations cannot prove or disprove causality. For example, the decline in sex crimes in the Western world could be explained by demographic changes. It is also unclear whether rising rates of sexual inactivity among younger generations (known as the "sexual recession") are related to increased rates of pornography use (e.g., Bozick, 2021; Twenge et al., 2017). Could it be that pornography use is replacing sexual activity in some demographic groups? Does the ubiquity of pornographic representations of sexuality make young people shy away from sexual activity because of performance anxiety? Or are other factors responsible for the sexual recession, such as sleep deprivation and exhaustion, or higher rates of singlehood?

Some researchers see the high prevalence of rough sex practices, such as spanking and choking (i.e., manual strangulation), among young people as evidence that pornography is

increasingly shaping young people's sexual scripts (e.g., Wright et al., 2022, 2023). This trend is concerning because rough sex practices among young people often follow traditional gender roles (with men in active/aggressive roles and women in passive/target roles), making young women particularly vulnerable to pornography-induced social pressure to engage in potentially unwanted rough sex, thereby risking young women's physical and psychological safety. Similar concerns are raised about the normalization of anal sex through male-centric mainstream pornography. Men typically being in the active/insertive role and women typically being in the passive/receptive role implies a gendered and unequal burden of potential pain, injury risk, and risk of experiencing sexual coercion (Faustino & Gavey, 2021). In line with leading media and pornography effects theories, one would expect younger generations to develop a more performance-oriented approach to sexuality, including integrating rougher and more extreme practices, as shown in various pornographic content rubrics.

Users who develop a high-frequency pattern of problematic online pornography use report a variety of negative effects, such as feelings of dependence and guilt, neglect of other important activities, and conflict with intimate partners (Bőthe et al., 2024). Early use of paraphilic content (defined as depictions of BDSM, fetishism, bestiality, and/or violent/coercive sexual activities), but not mainstream pornography, is associated with reduced sexual satisfaction later in life among men (Štulhofer et al., 2010). These researchers offered different possible explanations: According to sexual script theory, early and repeated exposure to paraphilic pornographic scripts could lead to sexual dissatisfaction when real sexual interactions differ from the learned scripts. Alternatively, early use of paraphilic content could simply reflect pre-existing paraphilic interests.

INTERVENTIONS TO PREVENT HARM FROM CYBERPORNOGRAPHY

To prevent harm from cyberpornography, both educational and counseling/therapeutic interventions have been developed and implemented.

Sexual Education

In order to protect young people from the negative effects of cyberpornography, they should be provided with comprehensive, age-appropriate sexuality education. If young people are educated about sex *before* they are exposed to pornography, they will be better able to recognize the lack of realism in pornography (a genre that aims to present exaggerated sexual fantasies rather than document realistic couple interactions). If young people do not receive sex education, they are effectively forced to learn about sexuality from pornography (Litsou et al., 2020; Rothman et al., 2021). Helping young people to become pornography-literate means helping them understand how pornography is produced and that it is a fictional media genre which depicts sexual fantasies. Porn-literate youth and adults should be able to critically evaluate pornographic content and not accept pornographic scripts as normative for their own sexual lives, avoid pornography that does not match their preferences and values, or consciously seek out material that feels beneficial to them.

In a two-round Delphi panel study (N = 24 and 17, first and second round, respectively), Western experts from a variety of disciplines (sex educators, pornography researchers,

pornography producers, adolescent development experts, and sexual health experts) were asked to provide examples of the "best sexually explicit materials to support the healthy sexual development" of young adults ages 18–25 (McKee et al., 2023). The experts recommended SEIM that (1) shows a variety of sexual practices; (2) includes a variety of body types, abilities, genders, races/ethnicities; (3) depicts on-screen negotiation of consent; (4) is known to be ethically produced; (5) focuses on pleasure for all participants; and (6) depicts safe sex. As examples of platforms that provide such content, the study lists: (1) Pinklabel.tv (focuses on queer pornography), (2) LustCinema.com (focuses on feminist, women's, and couples pornography), and (3) MakeLoveNotPorn.tv (focuses on real porn, i.e., amateur performers who typically shoot with their own partners in their own homes). All three platforms present different branches of non-mainstream pornography and keep most of their content behind a paywall. While this single Delphi panel study cannot provide an all-encompassing answer to the beneficial choice of pornographic content, it is highly relevant in its educational approach to engaging with pornographic content rather than rejecting the genre as a whole.

It is well established in the literature that the majority of parents and teachers shy away from providing pornography education to adolescents (Dawson et al., 2024; Ševčíková & Daneback, 2014). The main barriers are uncertainty as to what messages about pornography are age-appropriate and effective. Additionally, open communication about pornography, a phenomenon closely related to such private matters as masturbation and sexual fantasies, is often perceived as difficult and embarrassing. For this reason, experts call for professional pornography education provided by trained sex educators using evidence-based curricula.

There is a broad consensus that young people should not be left alone with their varied and sometimes difficult experiences with pornography, but should have a safe, educational space to ask questions and express their concerns without shame or guilt. Ideally, they should be able to receive factual and scientifically based answers. In addition, distinguishing between everyday partnered sexuality and the depiction of exaggerated sexual fantasies in erotica and pornography is seen as a key issue in pornography education. This includes deconstructing how pornography creates certain illusions (e.g., through the choice of performers, camera angles, editing, fake body fluids, etc.). Assuming that pornographic scripts can be internalized as norms in viewers, it would be helpful to teach adolescents how to resist perceived partner, peer, or pornographic pressure and assertively develop their own individual, pleasure-oriented (rather than performance-oriented) sexual scripts. Given the risks of problematic use, it is important for young pornography users to be able to recognize problematic patterns of use (e.g., excessive use, use of illegal material) and to know where to get help if needed (Byron et al., 2022; Dawson et al., 2020).

Given the growing involvement of young people in the consumption and even production of explicit images, there is a need for image-related consent education. For example, young people need to be aware that the following activities are not "fun", "sexy", or "harmless", but are acts of violence that can have legal and social consequences: (a) sending a photo of one's genitals (e.g., a so-called "dick pic") to another person without explicit prior consent; (b) secretly recording another person during sex (e.g., secretly filming one's partner performing oral sex); and (c) showing nude photos or videos of intimate partners to third parties without the partner's knowledge and consent. Highlighting the harmful effects of non-consensual production of explicit images does not mean moralizing or demonizing consensual use. Similarly, making young people aware of various risks of image-based victimization online

does not mean creating irrational fears or unduly restricting young people's participation in online communication.

There are several proposals for pornography education in the literature; some are school-based (e.g., Crabbe & Flood, 2021), others consider social media as educational spaces (e.g., Byron, 2024), and some incorporate participatory approaches (e.g., Davis et al., 2020). They await critical discussion, implementation, and empirical evaluation on a larger scale.

Sexual Counseling and Therapy

Several interventions have been developed for problematic pornography use (Sniewski et al., 2018; Roza et al., 2024b). Psychological approaches are based on second and third wave (i.e., mindfulness-based) cognitive-behavioral therapies. Pharmacological treatments include opioid antagonists (e.g., Naltrexone) and antidepressants. Psychological and pharmacological interventions are often combined. In addition, relationship counselors and therapists can help manage relationship conflicts regarding pornography use (Engelkamp et al., 2024; Spencer et al., 2023).

CONCLUSIONS

Digitalization has fueled the production and distribution of various types of pornography. While the boom in cyberpornography has raised many concerns, the current state of research increasingly investigates positive effects and has moved away from a sole focus on negative effects and use. Contents of different pornographic genres and content rubrics are being analyzed in more detail, and production contexts have become the focus of qualitative and quantitative research, with a particular eye to the physical and psychological well-being of performers.

Limitations

This chapter provides a broad narrative overview of the state of cyberpornography research. In order to delve more deeply into the many aspects addressed, systematic reviews and meta-analyses need to be conducted to provide a more rigorous synthesis. Although the boom in pornography use is accompanied by a booming field of interdisciplinary pornography research, regarding some subtopics, a lack of research often prevents definitive conclusions. In particular, systematic comparisons across genres, countries, and time periods are lacking. Another general problem with pornography research is that many claims of effects are supported only by subjective self-report data and correlational study designs. This likely stems from ethical and practical limitations that make experimental and longitudinal studies difficult. Nonetheless, these are the types of studies that would provide the necessary causal evidence for the much-discussed negative and positive effects of pornography.

The widespread exposure to hardcore pornography among people as young as 11 or 12 years old—that is, many years before their actual sexual debut—remains a serious and highly controversial issue. It is hard to imagine that this significant change in media exposure, compared to the exposure patterns of previous generations, would not have some kind of behavioral or psychological effects. However, little is known about the perspectives of adolescents, as

many researchers and ethical review boards are reluctant to include underage participants in pornography studies. Researchers who do include adolescents in their research can experience backlash because of it (e.g., Carboni & Bhana, 2017). Cyberpornography research would also benefit from more efforts to integrate different theoretical and methodological approaches (e.g., manual and automatic content analyses).

Outlook

In the digital age, digital pornography is ubiquitous and here to stay. In order to promote positive effects and prevent negative ones, it seems advisable to study the production, content, uses, and effects of cyberpornography. Particular attention should be paid to new technological developments such as VR pornography and AI-generated pornography. Finally, it must be accepted that pornography is multifaceted and complex. Rather than asking whether pornography is harmful or helpful, it seems more appropriate to focus on what positive and negative effects are experienced, by whom, through the use of which type and content rubric of pornography, and in what contexts.

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