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A Literature Review of Studies into the Prevalence and Frequency of Men's Pornography  
Use

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### Abstract

This review aims to provide information on the prevalence and frequency of adult males' pornography use. It appears, the majority (> 80%) of adult men have accessed pornography at some point, and in the past year (40–70%). Around half of younger men (25 or under) are weekly consumers. Pornography use tapers-off with age. Relatively few (< 10%) younger men have accessed violent pornography in the past year. The Internet is the primary method of access. Pornography use is associated with masturbation; use during partnered sex is less common. Differences in consumption rates between heterosexual and gay and bisexual men are discussed.

**Keywords:** Pornography; Sexually Explicit Material; Men; Prevalence

**Word count:** 11815

Smith and Attwood (2014) outline some of the different philosophical approaches present in the pornography effects literature (e.g., anti-pornography, pro-pornography, sex-positive, sex-critical, etc.). While some of these approaches are diametrically opposed in their views on the effect pornography has on consumers, they are in agreement on the idea that pornography “teaches” consumers (Albury, 2014). That is, they agree that pornography acts as a form of sex education for (at least some) consumers. For example, those operating out of a harms-focused paradigm might argue that pornography teaches risky sexual behavior (e.g., Wright, Tokunaga, & Kraus, 2016a) or even sexual violence (e.g., Wright, Tokunaga, & Kraus, 2016b). Those employing a pro-pornography paradigm may argue that pornography use can help LGBTQ+ people come to better understand their sexual identity (e.g., McCormack & Wignall, 2017). Those of a more neutral orientation might argue that pornography can influence what sexual activities are thought of as desirable, and that this may have both positive and negative effects on consumer’s lives (e.g., Miller, McBain, Li, & Raggatt, 2019). While these different theoretical orientations are disparate in their focus, they all position “porn as pedagogy” (Albury, 2014, p. 173). Accordingly, it is perhaps not surprising that the potential effect of pornography consumption is of great interest to the general public, academics, and sexual educators (for discussion of pornography in the context of sex education see Dawson, Gabhainn, & MacNeela, 2019; Rothman, Adhia, Christensen, Paruk, Adler, & Daley, 2018; Watson & Smith, 2012; Zurcher, 2019).

Accepting the notion that pornography “teaches” consumers (for better or worse), gives rise to a number of questions about pornography consumption. What proportion of people consume pornography? How frequently? By what means? And under what circumstances? This paper aims to address these questions and offer insight into the pornography use behavior of adult males by providing a review of recent empirical research

on the topic. This is done to contextualise men's pornography use and provide sex educators and researchers some indication of what is statistically "normative" in this area.

The review focuses on men's use of pornography. There are three reasons for this. First, a great deal of research indicates that, as a group, men are significantly more likely to consume pornography than women, and male pornography users consume pornography significantly more frequently than female pornography users (e.g., Böhm, Franz, Dekker, & Matthiesen, 2014; Chi, Bongardt, & Hawk, 2015; Hald, 2006; Hald & Malamuth, 2008; Paul & Shim, 2008; Petersen & Hyde, 2010, 2011; Price, Patterson, Regnerus, & Walley, 2016; Regnerus, Gordon, & Price, 2016; Shaughnessy, Byers, & Walsh, 2011). Meta-analytic work conducted by Petersen and Hyde (2010, 2011) further illustrates this point. This analysis assessed the *gender similarities hypothesis* (the hypothesis that gender gaps in behaviors and attitudes are not as large as is commonly believed) in relation to 30 sexual behaviors and attitudes. The authors found a robust gender gap in relation to the incidence and frequency of pornography use, in which men were much more likely to report using pornography. In fact, use of pornography was associated with the largest gender gap of any of the behaviors or attitudes assessed (others include, for example, incidence of extramarital sex, incidence of cybersex, sexually permissive attitudes). Second, there is evidence to indicate that men and women tend to use pornography differently. For example, compared to men, women are significantly more likely to view pornography with a sexual partner (Carroll, Busby, Willoughby & Brown, 2017; Hald, 2006). Third, much of the media and academic speculation regarding the impacts of widespread pornography use concentrates on men's pornography consumption specifically (Albury, 2014). However, this is not to say that women's pornography use is not also an interesting area of study; just that it will not be a focus of the current paper.

It is important to recognize that, because of the Internet, pornography is now more accessible than ever before. For this reason, studies into pornography use conducted 15 or even 10 years ago may not reflect current usage patterns. As the goal of this review is to provide insight into men's pornography use as it stands currently, the review focuses primarily on studies published since 2010. Furthermore, so that the review better reflects the general population of pornography consumers, the review avoids studies which sampled deviant (e.g., sex offenders) or clinical (e.g., men seeking treatment for sexual health issues) populations.

The review is organized into two sections. The first focuses on findings derived from large-scale, nationally representative datasets. In the second section, smaller studies—many of which employed convenience samples—are reviewed. A preliminary review of the literature suggested some differences in the pornography consumption behaviors of heterosexual men and gay and bisexual men (whether these inconsistencies reflect true between-group differences, or are the result of other factors, is discussed later in the review). For this reason, studies of primarily heterosexual participants are discussed separately to studies which targeted gay and bisexual men.

As will be demonstrated, while the large-scale surveys discussed in the first part of the review are laudable for the quality of their samples, they are often lacking in terms of the thoroughness with which pornography use is measured (e.g., many of these surveys only included one or two items assessing pornography use). Alternatively, while some of the studies discussed in the second half of the review are limited in terms of generalisability (e.g., the mean age of many of these samples is under 25), collectively they provide a wealth of data regarding the nature of pornography use, because of their primary focus on assessing pornography consumption. Both types of studies are reviewed to provide a more thorough understanding of men's pornography use. The discussion of smaller studies is organised

under the following themes: 1) overall prevalence of pornography use, 2) frequency of pornography use, 3) consumption of violent pornography, 4) media used to access pornography, and 5) sexual behaviors associated with pornography use. Where appropriate results are summarized in tables. Information on nationality and other characteristics of samples is provided in these tables. This was done so that readers interested in specific populations (e.g., Americans or university students) can easily identify pertinent studies.

### Method

The studies reviewed were identified using the database Scopus. Scopus indexes abstracts across the life sciences, health sciences, social sciences and humanities. Searches were performed to return studies with *pornography* or some derivative (e.g., *porn* and *porno*) and/or *sexually explicit* (which encompasses *sexually explicit material*, *sexually explicit Internet material*, *sexually explicit videos*, *sexually explicit Internet videos* and *sexually explicit images*) in the title, abstract or keywords. Articles were then sorted for adherence to the following inclusion criteria: 1) written in English, 2) published between the start of 2010 and the end of 2017, 3) sampled at least 100 adult males, 4) reports on pornography use among male participants (although, this does not need to be the sole focus of the study), and 5) does not sample deviant or clinical populations. Additional studies were identified from the reference lists of the studies collected through Scopus.

In the below discussion  $N$  is used to refer to the size of an overall sample and  $n$  is used to refer to the size of a subsample. Where applicable, pooled proportions have been calculated. These figures were calculated using the following formula (where  $\hat{p}$  represents a proportion, e.g., the proportion of men who are weekly pornography users in a given study, and  $n$  represents the sample size of a given study):  $\hat{p}_{pooled} = (\hat{p}_1 n_1 + \hat{p}_2 n_2 + \dots + \hat{p}_i n_i) / (n_1 + n_2 + \dots + n_i)$ .

An advantage to this approach (as opposed to simply adding each proportion and dividing by the number of studies) is that each study's influence on the pooled proportion is relative to the size of that study (i.e., larger studies exert a greater influence on the pooled proportion than smaller studies).

## Results

### Large Dataset Research

The first of the large-dataset studies to be discussed (Rissel, Richters, de Visser, McKee, Yeung, & Caruana, 2017) makes use of data collected as part of the Second Australian Study of Health and Relationships. This survey utilised computer-assisted telephone interviewing to collect a nationally representative sample of Australians aged 16 to 69 ( $N = 20,094$ , men = 49.6%). The majority (84.1%) of the men sampled reported viewing pornography at some point, with 75.7% of these men (63.7% of males) indicating that they had viewed pornography in the past year. Among men, being younger and identifying as gay or bisexual were found to be predictive of using pornography in the past year.

Herbenick, Bowling, Fu, Dodge, Guerra-Reyes, and Sanders (2017) conducted a smaller, nationally-representative survey of American adults aged 18 to 92 using a probability-based survey panel ( $N = 2,021$ , men = 48.2%). The survey assessed the prevalence of various sexual behaviors. In terms of pornography use, participants were asked whether they had watched sexually explicit videos or DVDs,<sup>1</sup> looked through sexually explicit magazines, or read erotic stories ever, in the past year, and in the past month. For sexually explicit videos/DVDs, 82.3% of the men sampled indicated that they had consumed such material ever, 53.4% had in the past year, and 35.3% had in the past month. For magazines, 79.0% of men indicated lifetime use. Figures for past-year and past-month

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<sup>1</sup> The exact phrasing used in the article, "Watched sexually explicit videos or DVDs (porn)" (p. 10), implies that this includes viewing videos via the Internet.



magazine use were 22.1% and 7.5% respectively. Over half of male participants (57.2%) had read erotic stories at some point, 23.0% had done so in the past year, and 8.6% had done so in the past month.

The General Social Survey (GSS) is a frequently utilized data source in the pornography research literature (e.g., Kohut, Baer, & Watts, 2016; Tokunaga, Wright, & McKinley, 2015; Wright, 2013). The GSS is a large-scale, full-probability survey conducted biennially in the U.S. by the National Opinion Research Centre of the University of Chicago (Smith, Davern, Freese, & Hout, 2018). The survey has been running since 1972. Since 1973, most GSS iterations have assessed participants' pornography use with the following item: "Have you seen an X-rated movie in the last year?" Price, Patterson, Regnerus, and Walley (2016) summarise participants' responses to this question over the period 1973 to 2012. The authors report that for the period 1973–1980, 44.9% of young men (18–26 years) reported having seen an X-rated movie in the past year, whereas markedly fewer older men (54–62 years) reported having done so (13.6%). For the period 2008–2012, 61.5% of younger men and 22.5% of older men reported having watched an X-rated movie in the past year. The authors provide evidence for both a cohort and age effect on pornography consumption; men appear to be more likely to consume pornography now than previously, and younger men are more likely to consume pornography than older men. It should be noted that the authors believe changes in pornography consumption over time have been relatively modest: "[cohort] changes are likely much smaller than what might be expected" (p. 19). Wright (2013) makes a similar conclusion based on his analysis of GSS data from 1973 to 2010.

As a supplement to the work conducted by Price et al. (2016), consumption figures based on GSS data from 2014, 2016, and 2018 (which are the most current GSS data available at the time of writing; Smith et al., 2018) are also provided. This analysis found that in 2014, 34.2% of the 767 men interviewed indicated that they had seen an X-rated movie in

the past year. In 2016 and 2018 this figure was 40.0% ( $n = 881$ ) and 38.9% ( $n = 728$ ) respectively. Table 1 reports on past-year consumption by age group. As can be seen, in the years 2014–2018 past-year consumption was higher among younger (18–35) participants (approx. 60%). Consistent with the findings of Price et al. (2016), past-year consumption tapered-off among older age groups, being lowest among the 64+ age group across all GSS years.

While the GSS’s sample is of high quality in terms of representativeness, GSS data is not without limitations. One major limitation is its use of a single dichotomous item (“Have you seen an X-rated movie in the last year?”) to assess pornography use. Such an approach says very little about the frequency of porn users’ pornography consumption. Furthermore, as others have pointed out (Kohut et al., 2016; Price et al., 2016; Regnerus, Gordon, & Price, 2015), the term *X-rated movie* is outdated and ambiguous. Some may interpret it as referring only to feature length films. It is unclear if the average survey respondent would consider the typically-short clips featured on pornographic tube-sites<sup>2</sup> to be “movies.” Furthermore, the term *X-rated movie* does not capture the consumption of pornographic still images, something which is relatively common (Peter & Valkenburg, 2011a, 2011b, 2011c). Another limitation of GSS data is that the survey is administered via in-person interviewing.<sup>3</sup> Participants may be less inclined to truthfully report their pornography use in the presence of others. Research supports the notion that participants’ perceptions of anonymity may impact responses on surveys assessing sexual behavior (Mustanski, 2001; Regnerus et al., 2015). For these reasons, GSS data may underestimate pornography use.

Regnerus et al., (2015) reviewed four large-scale, nationally representative surveys of U.S. adults: the GSS, the National Study of Youth and Religion, the New Family Structures

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<sup>2</sup> Websites which mimic YouTube’s format

<sup>3</sup> Since 2002, the GSS has used computer assisted personal interviewing. However, researchers are still typically present while participants complete the survey (Smith et al., 2018).

Study, and the Relationships in America Project. The first two of these studies utilised in-person interviewing, while the latter two employed anonymous computer surveying. All four studies included at least one item assessing participants' pornography use. The authors used various statistical techniques to compare, and probe the validity of, the frequency estimates provided across the four surveys. Based on this analysis, the authors conclude that the past-use estimates generated as part of the Relationships in America project ( $N = 5,165$ , men = 46.9%) are likely the most valid. The findings of this particular survey (conducted in 2014) suggest that 46% of U.S. men aged between 18 and 39 intentionally view pornography in a given week, 56% in a given month, and 69% in a given year. Based on their analysis, the authors also suggest that in-person interviewing may significantly underestimate pornography consumption when compared to anonymous computer-based survey methodologies.

### **Smaller Studies of Heterosexual Men**

#### ***Overall Prevalence***

The smaller-scale studies identified as part of this review typically reported the percentage of participants who had seen pornography at some point in their lives. Fourteen studies were identified in which more than 90% of the men sampled reported having viewed pornography at some point (Blais-Lecours, Vaillancourt-More, Sabourin, & Godbout, 2016; Bulot, Leurent, & Collier, 2015; D'Abreu, 2013; Donevan & Mattebo, 2017; Drouin & Miller, 2016; Gonsalves, Hodges, & Scalora, 2015; Hald & Mulya, 2013; Kvalem, Træen, Lewin, & Štulhofer, 2014; Morgan, 2011; Romito & Beltramini, 2011; Træen & Daneback, 2013; Sun, Miezan, Lee, & Shim, 2014; Svedin, Åkerman, & Priebe, 2011). Furthermore, Rosenberg and Kraus (2014) reported that 98% of the men they sampled had masturbated while viewing pornography and in Franczyk, Cielecka, and Tuszyńska-Bogucka (2014) 93.1% of the sample self-identified as current pornography users. Therefore, both studies would have also found a lifetime viewing figure in excess of 90% if lifetime viewing had

been measured. Two studies report lifetime viewing figures in the 80–89% range (Chi, Bongardt, & Hawk, 2015; Shaughnessy, Byers, & Walsh, 2011). Another two studies report lifetime viewing figures in the 70-79% range (Kasemy, Desouky, & Abdelrasoul, 2016; Weaver et al., 2011) and 60-69% range (Emmers-Sommer, 2013; Marshall, Miller, & Bouffard, 2017). Furthermore, Baltazar, Helm Jr., McBride, Hopkins, and Stevens Jr. (2010) found that 68% of the men they sampled had intentionally viewed Internet pornography at some point. Presumably this figure would be relatively close to the total percentage of participants in this sample who had seen any kind of pornography ever, given the popularity of Internet pornography (see below). However, it should be noted that this study was conducted with students at a conservative, religious university. As such, the sample may differ from the general population in terms of pornography use, or the sample may have been less inclined to truthfully report their pornography use (a problem which is further compounded by the fact that the study employed pen and paper survey administration in the presence of authority figures, i.e., research assistants). Together, these studies suggest that most men have some level of experience with pornography.

### *Frequency of Use*

**Use in the past year/six months/month.** Four studies asked participants whether they currently used pornography (Bridges & Morokoff, 2011; Franczyk et al., 2014; Poulsen et al., 2013; Romito & Beltramini, 2011). Among male participants these figures ranged from 74.1 to 93.1%. Other studies asked participants to indicate if they had accessed pornography over various time periods (e.g., in the past year, in the past month). To ease interpretation, these figures are presented in Table 2.

In three studies conducted by Peter and Valkenburg (2011a, 2011b, 2011c) consumption over the past six months is given for four categories of pornography: Internet pictures of genitals, Internet videos of genitals, Internet pictures of sex, and Internet videos of

sex. These figures ranged from 37 to 43%. Given that some participants would have seen more than one of these categories, it is not possible to simply add these figures to give an overall prevalence. Therefore, all that can be said here is that *at least* 43% of participants had seen *at least* one category of pornography in the past six months.

Taken together, the studies summarised in Table 2 would suggest that the majority of men (likely more than 75%) have viewed pornography in the past year/six-months. Past-month consumption is harder to ascertain given that only one study assessed consumption over this time interval.

**Weekly use.** Numerous studies have asked men to report the frequency of their pornography use. However, giving precise estimates regarding how frequently men access pornography is complicated by the fact that different studies tend to use different time scales to measure consumption frequency (e.g., some studies had an option for twice weekly consumption, while others did not). This being said, many studies reported weekly viewing figures, or a closely related statistic. Thus, weekly consumption is focused on here.

Fifteen studies explicitly give the percentage of male participants who indicated that they watch pornography at least weekly (see Table 3). As can be seen, these figures differ markedly, ranging from 18.4 to 95%. Once again, the Peter and Valkenburg (2011a, 2011b, 2011c) studies provided consumption figures across four categories of pornography: Internet pictures of genitals, Internet videos of genitals, Internet pictures of sex, and Internet videos of sex. Between 14 and 16% of the 503 men sampled in these studies indicated that they watched any one category at least weekly. Again, these figures should be considered possible underestimations as some participants may view some of these types of pornography but not others. Accordingly, these studies are excluded from Table 3.

Table 3 also presents studies which report the percentage of male participants who consume pornography at least *several* times per week, which is similar to, but distinct from,

*at-least-weekly* consumption. Here figures ranged from 40 to 62%. A study assessing consumption in the past week is also included in the table. While *consumption in the past week* differs from *at-least-weekly consumption* it is reasonable to assume that the two figures would be similar. It should however be noted that the generalizability and validity of this study (Baltazar et al., 2010) is questionable because of sampling and design. As noted earlier, this study was conducted at a conservative, religious university and utilised pen and paper survey administration in the presence of research assistants.

The percentages reported in the third column of Table 3 were averaged (weighted by sample size) to produce a weekly consumption estimate of 44.7% ( $N_{\text{pool}} = 14,708$ ). This figure should be considered a rough estimate only, and is probably only representative of weekly pornography consumption among younger men, given the average sample ages of the studies reviewed (see Table 3). It is worth noting that this estimate is close to the weekly consumption estimate generated as part of Regnerus et al.'s (2015) review of large-scale, nationally representative surveys: 46% of U.S. men aged 18–39.

**Time.** Several studies report the average amount of time participants spent watching pornography per week. The men sampled viewed 1.25 hr of pornography per week on average in Blais-Lecours et al. (2016) and 3 hr of pornography per week in Wéry and Billieux (2016). Gonsalves, Hodges, and Scalora (2015) found that their sample averaged 148 minutes of Internet pornography consumption per week and 42 minutes of non-Internet pornography consumption (e.g., pornographic DVDs or magazines). Downing Jr., Schrimshaw, Scheinmann, Antebi-Gruszka, and Hirshfield (2017) reported a median viewing time of 2 hrs per week ( $IQR = 1\text{--}3.75$  hrs) among the heterosexual men they sampled. In Hald and Mulya (2013) 56% of participants indicated that they watched more than 60 min of pornography a week.

### ***Violent Pornography Use***

The potential impact of exposure to violent pornography is a major concern among the public and researchers alike (see Hald, Seaman, & Linz, 2014). Accordingly, numerous studies have attempted to assess the prevalence or frequency of violent pornography use. A summary of research assessing men's engagement with violent pornography is provided in Table 4. For the sake of this summary, violent pornography has been broadly defined to include violent, degrading, and rape/forced-sex/coercive pornography. The exact terms used by researchers are presented in the second column of Table 4. All of the studies which measured the use of BDSM or sadomasochistic pornography also took a separate measure of violent pornography consumption. Thus, it seems likely that in these studies the authors presented BDSM and violent pornography as being distinct. As such, BDSM and violent pornography are discussed separately.

Estimates of past-year BDSM pornography use ranged from 9.3 to 27%, whereas estimates of past-year violent pornography use ranged from 0.4 to 19%. These upper estimates both came from the same study (Foubert, Brosi, & Bannon, 2011) which sampled fraternity members at a large U.S. university ( $N = 298$ ). Estimates of lifetime exposure to violent pornography ranged from 5 to 46.7%. The estimates produced as part of D'Abreu (2013) and Romito and Beltramini (2011; 46.7% of 304 men and 45.6% of 154 men respectively) are noticeably larger than the next highest estimate (15.6%). It should be noted that in D'Abreu (2013) a large percentage of the sample (33.5%) reported having committed a sexual assault. For this reason, the sample may not be representative in terms of attitudes towards the acceptability of violence against women. These differences in prevalence may also reflect cultural differences as D'Abreu (2013) and Romito and Beltramini (2011) collected data in Brazil and Italy. These were the only studies to collect data in these countries. In the majority of the studies reviewed, fewer than 16% of male participants

indicated having watched violent pornography ever. No studies assessed lifetime exposure to BDSM pornography.

As can be seen from the Table 4, many studies do not report whether, or how, violent pornography was defined for participants. A lack of clarity here makes it difficult to determine the degree to which between-study differences in exposure to violent pornography are driven by between-study differences in the way violent pornography is operationally defined. It is noteworthy that the studies which engaged larger samples (e.g., Hald, Kuyper, et al., 2013; Svedin, Åkerman, & Priebe, 2011) tended to produce lower violent pornography consumption estimates. As above, proportions were averaged (weighted by sample size) for past-year BDSM pornography use, past-year violent pornography use, and lifetime violent pornography use. These figures were 13.3% ( $N_{\text{pool}} = 2,159$ ), 8.0% ( $N_{\text{pool}} = 2,159$ ), and 17.3% ( $N_{\text{pool}} = 2,962$ ) respectively.

Hald and Štulhofer (2016) used 5-point scales (1 = *Not at all*, 2 = *A small extent*, 3 = *A moderate extent*, 4 = *A large extent*, and 5 = *An extreme extent*) to assess the frequency of participants' use of various categories of pornography over the past year. Their findings further support the notion that use of violent and BDSM pornography is relatively uncommon. Among male participants ( $n = 630$ ), mean frequency of violent pornography use was 1.58 ( $SD = 1.02$ ). Mean frequency of sadomasochistic pornography use was similarly low at 1.57 ( $SD = .99$ ). Of the 27 categories of pornography assessed, violent and sadomasochistic pornography were ranked as the 22<sup>nd</sup> and 23<sup>rd</sup> most frequently viewed respectively.

### ***Media Used to Access Pornography***

Twelve studies assessed male pornography users' utilisation of various media. A number of these studies compared the use of the Internet to access pornography with other media. In the majority of these studies (6/9), the Internet was found to be the most commonly



employed medium (Hald & Mulya, 2013; Martyniuk, Dekker, Sehner, Richter-Appelt, & Briken, 2016; Marshall, Miller, & Bouffard, 2017; Rosenburg & Kraus, 2014; Sun, Miezán, Lee, & Shim, 2015; Svedin, Åkerman, & Priebe, 2011). In two studies the Internet was found to be second (albeit a close second) to the use of videos/DVDs or television (Bridges & Morokoff, 2011; D'Abreu, 2013), and in one study the consumption of pornographic magazines was found to be as common as the consumption of Internet pornography among Japanese university students (Omori, Zhang, Allen, Ota, & Imamura, 2011).

Rosenburg and Kraus (2014) looked at different ways in which participants accessed Internet pornography. They found that while computers were used more often than smart phones, smart phones were employed relatively frequently, with 24% of males in the sample reporting having done so. Kvalem et al. (2014) found that 30.8% of the 459 males they sampled used a phone or tablet to access pornography at least once per week on average, whereas 80% used a computer. A more recent study similarly found that more participants had used a computer or laptop to access pornography than a tablet or smartphone (Downing Jr. et al., 2017). The authors also report that only 10.5% of their sample had a paid subscription to a pornographic website. Sun et al. (2015) similarly found paying for Internet pornography to be relatively uncommon.

### ***Sexual Behaviors Associated with Pornography Use***

Several studies assessed pornography-related sexual behaviors (e.g., masturbation, partnered sex). Shaughnessy et al. (2011) report that almost three-quarters (73.6%) of the 108 males in their sample had masturbated while watching pornographic videos at least once. Rosenberg and Kraus (2014) found that 98% of the 221 male students they sampled had masturbated while watching any kind of pornography. The authors also asked participants how commonly they masturbated on the occasions they viewed pornography. They report that approximately three-quarters of participants (76%) masturbated on more than three-

quarters of the occasions they viewed pornography. In Wéry and Billieux (2016), 97% of the men sampled reported masturbating while watching pornography. Træen and Daneback (2013) took a slightly different approach and asked participants how frequently they viewed pornography on the occasions they masturbated. They found that, on average, males viewed pornography on less than half of the occasions they masturbated (42.2%,  $SD = 35.2\%$ ) and 4.3% ( $SD = 10.6\%$ ) of the occasions they had partnered sex (it should be noted that these standard deviations are quite high, indicating a lot of variability in these behaviors).

Bridges and Morokoff (2011) asked participants their reasons for viewing pornography. The most common reason given among males ( $n = 217$ ) was *for solo sexual stimulation* (63.9%), followed by *for use during partnered sex* (48.4%). In Wéry and Billieux (2016) the most commonly given reasons for consuming pornography were *for sexual satisfaction* (94.4%), *to feel arousal* (87.2%), and *to achieve orgasm* (86.5%). In a sample of Korean men, pornography use for the purposes of masturbation occurred significantly more frequently than pornography use without masturbation (Sun et al., 2016). Qualitative interviews conducted by Böhm et al. (2014) and quantitative work carried out by Carvalheira, Træen, and Štulhofer (2015) further indicate that pornography consumption and solitary masturbation are closely linked among men. This being said, the latter study targeted coupled men with decreased sexual desire, and thus the results of this study may not generalise.

A few studies have reported on partnered use of pornography. In one (Böhm et al., 2014), 5% of the 2028 students sampled indicated that they had viewed pornography with a partner in the last month. In another (Maddox et al., 2011), 44.8% of participants ( $N = 1291$ ) indicated that they had done so at some point. In both these studies, these figures are not reported separately by gender. One large study of couples found that men were much more likely to report never viewing pornography with a sexual partner compared to women (Carroll, Busby, Willoughby & Brown, 2017). Finally, 90% of the Swedish 18-year-old

males sampled as part of a study conducted by Donevan and Mattebo (2017) indicated that they most typically watch pornography alone.

### **Smaller Surveys of Gay and Bisexual Men**

#### *Overall Prevalence*

There was greater consistency in terms of pornography consumption prevalence across the studies of gay and bisexual men, as compared to the studies of predominately heterosexual men. Three studies (Eaton, Cain, Pope, Garcia, & Cherry, 2012; Nelson et al., 2014; Rissel et al., 2017) report lifetime exposure to pornography in excess of 90%. In a further eight studies (Hald, Smolenski, & Rosser, 2013; Kvalem, Træen, & Iantaffi, 2016; Rosser et al., 2013; Rosser, Noor, & Iantaffi, 2014; Stein, Silvera, Hagerty, & Marmor, 2012; Træen, Hald, et al., 2014; Træen, Noor, et al., 2014; Træen et al., 2015<sup>4</sup>) lifetime exposure statistics are not reported, but statistics that would imply lifetime exposure greater than 90% are given (e.g., in Stein et al., 2012, 98.9% of participants reported having viewed pornography in the past three months).

#### *Frequency of Use*

**Use in the past three months.** In two datasets (Hald, Smolenski, & Rosser, 2013 and related studies; Træen, Noor et al., 2014 and related study) almost all participants (98.5% of 1391 men and 98.8% of 529 men respectively) reported having seen pornography in the past three months.

**Weekly use.** Stein et al. (2012) found that just under 70% of their sample of 821 men watched pornography depicting protected anal sex at least once per week (thus, the number of participants who watched any kind of pornography weekly could be higher than that). In two datasets approximately three-quarters of participants reported watching at least an hour of

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<sup>4</sup> Four of these studies utilised the same dataset (Hald, Smolenski, & Rosser, 2013; Rosser et al., 2013; Rosser, Noor, & Iantaffi, 2014; Træen, Hald, et al., 2014). Another two studies similarly report on the one dataset (Træen, Noor, et al., 2014; Træen et al., 2015). This is highlighted so as not to give the erroneous impression that similar prevalence figures were observed across multiple unique samples.

pornography per week (Hald, Smolenski, & Rosser., 2013 and related studies; Træen, Noor et al., 2014 and related study). Nelson et al. (2014) report that more than half of the 1170 men they sampled (57%) watched pornography daily, thus weekly consumption can be assumed to be higher than 57% for this study. In Downing Jr. et al. (2017) 81.6% of the gay men sampled ( $n = 534$ ) reporting watching pornography more than once per week, and in Kvalem et al. (2016) mean frequency of Internet pornography use was greater than weekly: 4.23 ( $SD = 1.12$ ) on a 6-point scale where 4 = *a few times a week* and 5 = *about once a day*. These estimates all suggest a weekly consumption figure that is higher than the pooled weekly consumption estimate produced from the studies of heterosexual men (44.7%).

**Time.** Four datasets report on the amount time participants watch pornography per week. In three of these datasets (Hald, Smolenski, & Rosser, 2013 and related studies; Træen, Noor et al., 2014 and related study; Downing Jr. et al., 2017), median time participants spent watching pornography per week was approximately 3 hrs (*IQRs* were 1.07–5.84 hrs, 1.2–6.8 hrs, and 1–5 hrs respectively). In the remaining dataset (Eaton et al., 2012) time spent watching pornography was measured on an 8-point scale where 3 = *1–1.5 hrs* and 4 = *1.5–2 hrs*. In this sample ( $n = 149$ ), the mean for this item was 3.73 ( $SD = 2.16$ ).

### ***Violent Pornography Use***

No studies were identified reporting on violent pornography use among gay or bisexual men specifically.

### ***Media Used to Access Pornography***

Six datasets provide information on the media used to access pornography. In four of these datasets the Internet was the most frequently utilised medium for accessing pornography, followed by videos/DVDs, and then magazines (Kvalem et al., 2016; Træen, Noor et al., 2014 and related study; Silvera, Grov, Stein, Hagerty, & Marmor, 2015; Stein et al., 2012). In one dataset (Hald, Smolenski, & Rosser, 2013 and related studies), Internet

pornography use was divided into computer-based usage and phone/tablet-based usage. In this dataset, pornography was most frequently accessed using computers, followed by DVDs, and then phones or tablets. Kvaalem et al. (2016) also found computer-based pornography use to be more common than phone-based usage. However, both technologies were found to be utilised more frequently than DVDs.

Nelson et al. (2014) found that a significant percentage of their sample of 1170 men (30%) had viewed live webcam feeds. No other studies assessed the prevalence of live streaming pornography. Webcam feeds may involve interactions between the audience and performer (e.g., requesting that the performer execute particular acts) and thus may have a different effect than the passive consumption of videos or pictures. Future studies should assess the prevalence of viewing live webcam feeds among other populations.

### ***Sexual Behaviors Associated with Pornography Use***

Træen and Daneback (2013) reported how commonly participants viewed pornography on the occasions they masturbated. In this study, gay, lesbian, and bisexual participants ( $n = 106$ ) reported that, on average, they viewed pornography on almost half of the occasions they masturbated (51.5%,  $SD = 35.8\%$ ) and 10.1% ( $SD = 15.2\%$ ) of the occasions they had sex with a partner. Nelson et al. (2014) took a different approach, asking participants if they had ever masturbated or had partnered sex while watching pornography. Respectively, 95% and 36% of participants ( $N = 1170$ ) indicated that they had. This second figure is supported by another dataset which found that 34.6% of the men sampled ( $N = 1391$ ) had watched pornography with a partner (Hald, Smolenski, & Rosser, 2013 and related studies). Nelson et al. (2014) also assessed participants' reasons for viewing pornography. The four most frequently endorsed reasons were *horny at the time* (89%), *wanting to orgasm* (82%), *boredom* (64%), and *stress relief* (50%).

## **Discussion**

## Summary of Research Among Heterosexual Men

The primary goal of this review has been to provide practical information on men's pornography use behavior that may be of value to both researchers and sex educators (e.g., when arguing for the inclusion of pornography literacy in sex education programs). Based on the review it seems safe to conclude that pornography consumption is common among heterosexual men (particularly younger men). Both the large-scale surveys and smaller studies suggest that the vast majority of men (> 80%) have accessed pornography at some point. Among the smaller studies (which typically utilised younger samples) past-year or past-six-month use of pornography was also high (> 75%). Among larger, more age-diverse samples, the prevalence of past-year or past-six-month consumption was lower, although still high (between 40–70% of men).

There were large variations between the smaller studies in terms of regular (weekly) viewing statistics. Almost all the studies which reported weekly viewing statistics employed younger samples (samples with an average age under 25). Pooling the weekly use estimates generated from these studies gave a weekly use estimate of 44.7%. As noted earlier, this estimate converges with the weekly use estimate generated by Regnerus et al. (2015): 46% of U.S. men aged 18–39. Accordingly, extant evidence would suggest that around half of younger men are regular pornography users. The percentage of older men who are regular pornography users is difficult to determine given the paucity of research on this subject. However, it seems safe to assume that this figure would be less than 50%, given that use of pornography in the past year is significantly lower among older men, as compared to younger men (see Table 1). Estimates of the average amount of time men spend watching pornography per week ranged from approximately 1–3 hrs. However, these estimates are based on a few studies only, all of which employed relatively young samples.

The literature indicates that the consumption of violent pornography is uncommon relative to pornography use more generally. Pooled prevalence figures suggest that fewer than 20% of young men have accessed violent pornography at any point, and fewer than 10% have done so in the past year. There is relatively little research on use of BDSM pornography specifically. It should be noted that a relatively low level of violent pornography consumption may still have negative societal repercussions if violent pornography really does effectively model violence against women, as some suggest (e.g., Hald et al., 2014). It should also be noted that across the literature there is a lack of clarity in terms of how violent pornography is operationalized.

The Internet appears to be the main method by which pornography is accessed, however it is not the only medium utilized. It could be argued that the medium chosen to access pornography is a matter of whichever is the most convenient. Use of phones and tablets to access pornography seems to be relatively common. The findings around the prevalence of accessing pornography via phones and tablets suggest that installing filtering software on home or school desktop computers is probably unlikely to stop young people accessing pornographic material.

There is some evidence to indicate that viewing pornography is typically accompanied by masturbation. This is relevant to those working in a relationship counselling capacity, as it has recently been suggested that the association between pornography use and sexual dissatisfaction observed in some studies may actually be explained by frequent masturbation, as opposed to exposure to pornography itself (see Miller et al., 2019; Perry, 2020). Partnered pornography consumption appears to be relatively uncommon, although this is based on a few studies only. Again, this is relevant to relationship counselling, as it has been observed that viewing pornography with a sexual partner, as opposed to solitary

pornography use, is associated with increased satisfaction with one's sexual relationship (Maddox et al., 2011).

### **Summary of Research Among Gay and Bisexual Men**

Pornography consumption among gay and bisexual men appears also to be virtually ubiquitous, both in terms of lifetime viewing and regular viewing. The limited data available suggests that almost all gay and bisexual men have seen pornography at some point, and that the majority—possibly more than 75%—of gay and bisexual men are viewing pornography at least weekly. Several studies indicate that median time spent watching pornography per week may be as high as 3 hrs. Again, the data suggest that the Internet is the main medium used to access pornography, and that viewing pornography is linked to masturbation.

Some of the studies discussed formally compared pornography use by sexual orientation. These studies found that gay and bisexual men are significantly more likely to have consumed pornography in the previous year (Rissel et al., 2017) and spend significantly more time viewing pornography per week (Downing Jr. et al., 2017) than heterosexual men. While estimates of pornography consumption generally were higher in the studies of gay and bisexual men, more research is needed before it can be definitively concluded that gay and bisexual men consume more pornography than their exclusively heterosexual counterparts. Far fewer studies have been conducted with gay and bisexual participants. Furthermore, the representativeness of some of the samples generated as part of these studies can be questioned. For example, one study (Stein et al., 2012) recruited participants from pornographic websites. Another (Eaton et al., 2012) drew participants from a HIV intervention program. Those who visit pornographic websites are obviously very likely to be regular pornography consumers, and those who have been deemed to be at risk for contracting HIV may differ from the general population in terms of important variables such as attitudes toward sex and engagement in risky sexual behavior. Previous research suggests



that the gay and bisexual community may be more sexually liberal than the heterosexual community (Grollman, 2017; Visser et al., 2014). Thus, the higher levels of consumption found among this population may simply reflect the fact that gay and bisexual men are less inclined to underreport their true pornography use (which would suggest that the weekly consumption estimates for heterosexual men that were generated as part of this review may actually underestimate heterosexual men's pornography use).

If we do accept the notion that gay and bisexual men consume more pornography than their heterosexual counterparts, this may be an indication that gay and bisexual men benefit from pornography in a way that heterosexual men do not. For example, pornography may have an educational function for gay and bisexual men, that it does not have for heterosexual men. There is some qualitative research to support the notion that young gay and bisexual men feel that pornography is useful tool for better understanding their own sexuality (McCormack & Wignall, 2017). This might indicate that existing sex education program could better cater to LGBTQ+ people.

### **Limitations and Future Directions**

The review highlights several constraints and limitations of the literature on pornography use. First, many of the reviewed studies were limited in terms of the age ranges sampled. The majority of studies employed relatively young samples (e.g., convenience samples of university students). The studies that did utilize older samples generally found slightly lower rates of pornography consumption. GSS data also suggest that use of pornography may taper off with age. Future studies sampling a wider age range would help to elucidate the relationship between age and pornography use.

Second, in some studies the method of survey administration was a likely limitation. Interestingly, the three studies which reported the lowest weekly viewing figures—Baltazar et al. (2010), Bulot et al. (2015), and Sinković et al. (2013)—collected data utilizing face-to-

face interviews (Sinković et al., 2013) or pen-and-paper surveys administered in a public setting (classrooms in Baltazar et al., 2010, and a medical waiting room in Bulot et al., 2015). It is possible that a lack of perceived anonymity may impact how some participants respond on surveys of pornography consumption, given that it is a sensitive topic for many (this notion is supported by empirical research, Mustanski, 2001; Regnerus et al., 2015). It is important for future researchers to recognize that method of survey administration may have a powerful influence on participants' willingness to truthfully report their use of pornography. Researchers may want to avoid in-person data collection where possible.

Third, given that many of the studies reviewed were conducted with convenience samples, self-selection bias may undermine the representativeness of the data. As mentioned above, there are nationally representative surveys available to draw on. However, these surveys have typically only included a few items assessing pornography use (Regnerus et al., 2015). Thus, the information they provide is somewhat constrained. For this reason, it is probably best to look at the results of both kinds of data in tandem, noting and investigating any discrepancies.

Forth, there are major inconsistencies to the ways in which pornography use is measured, especially in terms of the frequency of pornography use (e.g., different timeframes are used). This is an issue that has been identified in previous reviews (Short, Black, Smith, Wetterneck, & Wells, 2012). We suggest defining frequent use in terms of *at least weekly consumption* in future studies.

A final limitation of this literature that is worth noting is a general lack of clarity in terms of how pornography is defined for participants (again this is an issue that has been identified previously; see Short et al., 2012 for a discussion). This issue is especially relevant to assessing violent pornography use. Only two of the nine studies reported in Table 4 stated whether, and how, violent pornography was defined for participants. As mentioned above,

this is problematic as what constitutes violence is open to many interpretations. For example, some would consider BDSM to be “violent” as it depicts acts such as spanking, whereas others would not when these acts are performed in a context of mutual consent. A similar dynamic can be seen in content analytic work, where estimates of the percentage of pornographic scenes to contain violence range from approximately 2% (McKee, 2005) to 88% (Bridges, Wosnitzer, Scharrer, Sun, & Liberman, 2010), depending on whether violence is defined in such a way as to include consensual violence (for a discussion see McKee, 2015). Short et al. (2012) give some suggestions around defining pornography in research.

Two limitations of the current paper are also worth noting. First, qualitative research was largely excluded (although some of the studies discussed did have qualitative components). We felt focusing on quantitative studies was appropriate given the aim to provide concrete statistics on men’s pornography use, but we do acknowledge that excluding qualitative research may have undermined our ability to provide information on men’s subjective experiences around their pornography consumption (e.g., men’s ideas of what motivates their pornography consumption). A narrative review of qualitative work in this area would be useful.

Second, the paper did not split results by nationality, instead treating “men” as a singular construct. This is because we felt it was inappropriate to do a cross-nations analysis when some nations would be represented by one or two studies only. However, we acknowledge that there may be important cultural or geographic differences in men’s pornography use behavior.

### **Conclusion**

The Introduction made mention of a notion that underpins much of the pornography effects literature: that pornography can act as sexual education for consumers, influencing consumers’ views of sex and relationships in both positive and negative ways. Accepting this

premise raises questions around the frequency and prevalence of pornography consumption. This review has tried to answer some of these questions. The review confirms the common notion that pornography use is pervasive, by highlighting the high prevalence and frequency of men's pornography use (particularly via the Internet). If pornography "teaches" its consumers, there certainly does appear to be many consumers to teach. In fact, the near-ubiquity of pornography use among younger men, and gay and bisexual men, would suggest that pornography literacy programs which vilify the use of pornography, or position the use of pornography as being abnormal, may cause unnecessary feelings of guilt among large segments of these populations.

Of course, this review cannot answer exactly what lessons pornography teaches consumers. Answering this requires consideration of both the content of pornography (for which there are a number of informative content analytic studies, e.g., Bridges et al., 2010; McKee, 2005; Shor, 2019; Vannier, Currie, & O'Sullivan, 2014) as well as empirical research into whether pornography use is associated with the kinds of attitudes and behaviors present in the content of pornography (for an overview see Hald et al., 2014). Men's marked preference for Internet pornography over other forms of pornography indicates that those seeking to develop pornography literacy programs should focus their attention on Internet pornography specifically. For example, when researching the content of pornography, they may want to focus on content analyses of Internet pornography (e.g., Shor, 2019; Vannier et al., 2014), as opposed to pornographic movies (e.g., Bridges et al., 2010; McKee, 2005). This is important as there is some evidence to indicate that the content of pornography may differ by medium (Barron & Kimmel, 2000).

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Table 1

*Percentage of Men Who Indicated That They Had Watched an X-Rated Movie in the Past Year as Part of the 2014 (n = 767), 2016 (n = 881), and 2018 (n = 728) General Social Survey (GSS)*

Age group	GSS 2014	GSS 2016	GSS 2018
18–26	62.4	60.6	58.6
27–35	52.8	60.4	61.4
36–44	44.0	51.0	54.9
45–53	23.4	34.1	36.5
54–63	22.0	20.1	16.5
64+	10.2	15.7	12.7
Age groups combined	34.2	40.0	38.9

Table 2

*The Prevalence of Men's Pornography Use over Various Time Intervals*

Study	Prevalence (%)	Country; Sample
Past year		
Kvalem, Træen, Lewin, & Štulhofer, 2014	98.9	Sweden & Norway; young adults
Hald, Kuyper, Adam, & de Wit, 2013	88.2	Netherlands; young adults
Willoughby, Carroll, Busby, & Brown, 2016	70	US; young adults/uni students
Past 6 months		
Martyniuk, Briken, Sehner, Richter-Appelt, & Dekker, 2016	92.1	Poland & Germany; uni students
Sinković, Štulhofer, & Božić, 2013	79.5	Croatia; young adults
Morgan, 2011	78.8	US; uni students
Cooper & Klein, 2018	75.25	US; uni students
Past month		
Böhm, Franz, Dekker, & Matthiesen, 2014	80	Germany; uni students
Past week		
Baltazar, Helm Jr., McBride, Hopkins, & Stevens Jr. (2010)	22 <sup>a</sup>	US; Christian uni students

*Note.* Uni = University

<sup>a</sup>Internet pornography specifically

Table 3

*The Prevalence of Men's Frequent (Weekly) Pornography Use*

Study	Prevalence (%)	Number of men	Country; Sample	Average sample age
Viewing at least weekly				
Bulot, Leurent, & Collier, 2015	18.4	303	France; uni students	< 25
Sinković, Štulhofer, & Božić, 2013	21.7	510	Croatia; young adults	NR
Willoughby, Carroll, Busby, & Brown, 2016	25.0	1755	US; young adults & uni students	> 25, < 40
Poulsen, Busby, & Galovan, 2013	26.0	617	US; heterosexual couples	> 25, < 40
Marshall, Miller, & Bouffard, 2017	31.4	463	US; uni students	< 25
Hald, Kuyper, Adam, & de Wit, 2013	38.7	1402	Netherlands; young adults	< 25
Svedin, Åkerman, & Priebe, 2011	39.1	1902	Sweden; high school seniors	< 25
Cooper & Klein, 2018	40.1	282	US; uni students	< 25
Hald & Mulya, 2013	42.8	148	Indonesia; uni students	< 25
Morgan, 2011	58.1	326	US; uni students	< 25
Franczyk et al., 2014	66.5 <sup>a</sup>	131	Poland; young adults	< 25
Sun, Miezan, Lee, & Shim, 2014	74.1 <sup>b</sup>	685	Korea; heterosexual uni students	< 25
Kvalem, Træen, Lewin, & Štulhofer, 2014	78.2	459	Sweden & Norway; young adults	< 25
Donevan & Mattebo, 2017	80	371	Sweden; high school seniors	< 25
Rosenburg & Kraus, 2014	95 <sup>c</sup>	221	US; uni students who had used porn (last 6 months)	< 25
Viewing at least several times per week				
Landripet & Štulhofer, 2015	40, 57, 59 <sup>d</sup>	941, 212, 1559	Croatia, Norway & Portugal; adult men	> 25, < 40
Böhm, Franz, Dekker, & Matthiesen, 2014	43	796	Germany, uni students	< 25
Martyniuk, Briken, Sehner, Richter-Appelt, & Dekker, 2016	54	1062	Poland & Germany; uni students	< 25
Rosenburg & Kraus, 2014	62 <sup>c</sup>	221	US; uni students who had used porn (last 6 months)	< 25

Note. NR = not reported; Uni = university

<sup>a</sup>Weekly use of Internet pornography specifically; <sup>b</sup>Weekly use for the purpose of masturbation specifically; <sup>c</sup>Sample limited to those who had viewed pornography in previous 6 months;

<sup>d</sup>Measured across three samples.

Table 4

*The Prevalence of Men's Violent Pornography Use (in the Past Year and Ever)*

Study	Description used	Prevalence (%)	Number of men	Definition provided?	Country; sample
<b>Past Year</b>					
Hald, Kuyper, et al., 2013	BDSM; violent/forced sex	9.3%; 8.1%	1402	NR	Netherlands; young adults
Kvalem, Træen, Lewin, & Štulhofer, 2014	BDSM; violent/coercion	17%; 0.4%	459	NR	Sweden & Norway; young adults
Foubert, Brosi, & Bannon, 2011	Sadomasochistic; rape	27%; 19%	298	Yes <sup>a</sup>	US; uni students (fraternity members)
<b>Ever</b>					
Hald & Mulya, 2013	Violent	5%	148	NR	Indonesia; uni students
Bridges & Morokoff, 2011	Harmful/degrading	6.6%	217	NR	US; heterosexual couples
Svedin, Åkerman, & Priebe, 2011	Violent/forced-sex	12.8%	1902	NR	Sweden; high school seniors
Gonsalves, Hodges, & Scalora, 2015	Violent; degrading	15.6%; 18.5%	237	NR	US; uni students
Romito & Beltramini, 2011	Violence against women; women enjoying violence	45.6%; 36.3%	154	Yes <sup>b</sup>	Italy; senior high/vocational school students
D'Abreu, 2013	Violent	46.7%	304	NR	Brazil; uni students

*Note.* NR = not reported; Uni = university

<sup>a</sup>The author's use Carroll et al.'s (2008) definitions of sadomasochistic porn ("media consisting of sadomasochistic portrayals of bondage, whipping and spanking but without an explicit lack of consent in video, movies, magazines, books or online") and rape porn ("media consisting of sexually explicit rape depictions in which force is used with explicit lack of consent in videos, movies, magazines, books, or online"); <sup>b</sup>Porn depicting violence against women was defined as any of the following: the woman is tortured, mutilated, raped, gang raped, humiliated (a man/men urinate or defecate on her), killed, or subjected to other violent sex (p. 1315)