Development and implications of pornography use: a narrative review

James Binniea\* & Paula Reaveya

a Division of Psychology, School of Applied Sciences, London South Bank University, London, UK

\* Correspondence should be addressed to: James Binnie, Division of Psychology, School of Applied Sciences, London South Bank University, 103 Borough Road, London, SE1 0AA.

E: [jamesbinnie@lsbu.ac.uk](mailto:jamesbinnie@lsbu.ac.uk); T: +44 (0)20 7815 5430.

Abstract

Pornography use is widespread and as such may have potential effects on the individuals that view it and on society itself. The question of whether pornography is harmful warrants investigation. A non-systematic narrative review of research literature pertaining to pornography was undertaken. Taking a historical and social perspective on pornography, the developments and implications of pornography use are critically analysed. How much pornography is currently used, who uses it and why is presented. The potential effects of pornography on the individual and on society are also described. From reviewing the literature it can be suggested that standard hardcore pornography on the whole is not currently harmful, however there are not many benefits associated with it. Research suggests that pornography is not harmful for the individual, however, like any substance or behaviour when taken to excess there may be problems that arise; a subsequent paper focuses on this important and under researched phenomena.

**Key words:** pornography use, narrative review, prevalence, harmfulness

Introduction

To understand any phenomena the origins must be explored. This paper therefore begins with an overview of the history of pornography. How much is currently used, who uses it and why is then put forward. The potential effects of pornography on the individual and on society are then discussed. The main aim of this paper is to explore pornography use, and to examine any benefits or harms. In a subsequent paper the problematic use of pornography will be discussed. If an analogy to substance misuse can be made, then it is imperative to understand the substance itself before focusing on the misuse.

**The history of pornography**

Until the time of the Reformation depictions of a sexual or erotic nature were commonplace within art; in paintings, carvings, sculptures and sketches across the world in nearly all civilizations (Byrne and Kelley, 1984). The functions of these artworks were varied, ranging from possibly religious (Venus of Willendorf) to possibly erotic (Warren Cup), but in many cases it is impossible to tell. Through the Renaissance and into the Reformation, the expense and limited audience of the works meant that ownership and interest usually remained within the upper classes. The arrival of the printing press and cheap reproduction of images allowed for easier distribution and access by the lower classes. Concerned about the morality of the masses, the authorities decreed that the production of erotic material should cease (Byrne and Kelley, 1984). The creators of erotica were therefore guilty and to be punished, the consumers or victims were seen as weak and the erotic materials themselves were destroyed.

The Victorians were known to be admirers of ancient Rome. Excavated areas of Pompeii during the Victorian era found several frescos and objects depicting sex and bestiality. The Greek word *pornographos*, meaning illustration of prostitution, was resurrected to describe what was found. These findings challenged Victorian sensibilities and were locked away only to be seen by the select few, largely upper-class white men. The establishment’s control of erotica was tested by developments in technology. Production of erotic materials often moved from the arts to early photographs of nudes for non-artistic functions, titillation being the most common. This change of function best describes the differences between erotica and pornography, with pornography rarely claiming any artistic quality (*Miller v. California*, 1973). More modern definitions of pornography echo the idea of function, for example, Peter & Valkenburg (2011) suggest that pornography can be defined as professionally or consumer produced images or videos that are intended to sexually arouse the viewer.

It was in the nineteenth century that visual pornography started to be consumed by the general public. The distribution of erotic photocards was rife in Victorian times. This new form of media consumption by the working classes reinforced ideas of “women’s ‘natural’ sexuality, children’s undifferentiated and uninhibited sexuality, and the availability of ‘colonial’ pleasures” (Sigel, 2000, p. 878); ideas already held by the ruling elite. As a result, the Vagrancy Act 1824/1838 outlawed the displaying of indecent prints. This was followed by the Obscene Publications Act 1857, the world’s first law that made the sale of obscene material an offence, with the associated power to destroy the offending material. However, there was no definition of obscene within the act and individual decisions had to be made in the courts based on the Hicklin test; offending segments could be taken out of context and lead to the whole work being banned. The private possession of erotic or pornographic material was not made an offence.

Erotic film production began almost as soon as the invention of the motion picture in 1895. The nature of the films began with erotica but quickly moved into what could be defined as pornography. These early pornographic works contained not only sexual acts between men and women but also acts between men, often within the same film. The production and distribution of these films remained a secretive affair and were often only shown in brothels or members only clubs. The distribution and viewing of hardcore pornographic films progressed with the portability of reel to reel projectors and were shown at male only gatherings; stag parties, hence the term stag movies. The distinction between hardcore and softcore became greater. Hardcore pornography tends to actually depict sexual acts such as vaginal, anal or oral intercourse, cunnilingus, ejaculation; whilst softcore is less sexually graphic, without actually depicting the sexual acts (Sapolsky & Zillman, 1981).

With the rise of liberalism and free speech during the early twentieth century it became possible once again to produce and distribute erotic or softcore material. Often works such as “Lady Chatterley’s Lover” would still be censored in various countries, in the UK for example, under the Obscene Publications Act 1959, which was then strengthened by the Obscene Publications Act 1964.

The British Board of Film Classification (BBFC), founded in 1912, approves and rates films for general release. Even with the approval of the BBFC, local authorities can still prevent cinemas showing films they do not approve of. Pornographic films remained underground and were only available to the public in sex clubs that sprung up in certain locations, such as Soho in the 1960s. Softcore pornography continued to flourish however, particularly in magazine format, for example Playboy and Hustler. Restrictions in the US were not as strict as the UK and pornographic films were allowed limited release, the first being Andy Warhol’s “Blue Movie” in 1969 and the 1972 release of “Deep Throat” which caused a lot of media attention. Legislation in the US courts were restricted by poor attempts at defining pornography; the most famous being the United States Supreme Court Justice, Potter Stewart who stated during *Jacobellis v.Ohio* (1964) “I know it when I see it” (“Concurring Opinion of Mr. Justice Stewart,” para. 1). The period between 1969 and the early 1980s was known as the ‘Golden Age’ of pornography in the US. Obscenity legislation in 1973 attempted to curtail the rise of pornography but producers bypassed obscenity laws by emulating mainstream storylines, thus preparing an artistic merit defence against potential litigation (Alilunas, 2016).

Advances in technology would again revitalise the pornography industry. The rise of home video and VHS in the late 1970s bypassed the censors and dramatically increased the availability of hardcore pornography. By the early 1980s most hardcore pornography was produced exclusively for home release. This effectively changed the consumer’s behaviour; from going to movie theatres to viewing pornography at home and having the freedom to watch as much as desired.

With the invention of the internet and the later widespread public access to the World Wide Web in the late 1990s, the accessibility of pornography increased. Consumers could freely view as many images and films as were available, high definition recording drastically improved the quality of the images and video files, and advances in streaming permitted a more anonymous service. The arrival of smartphones in 2007 allowed consumers to have greater, more flexible access to internet pornography.

Whilst there has been what may be termed as niche pornography, for example anal/vaginal fisting or gang bangs, since VHS, the rise of the internet pornography has meant that the availability of all types and variations of pornography is readily available to anyone with access to the internet. In the UK, after the murder of Jane Longhurst in 2003 by a man who had pornography of an extreme nature in his possession, calls for websites hosting extreme pornography to be shut down began. This culminated in Section 63 of the Criminal Justice and Immigration Act 2008; whereby the viewing of extreme pornography (acts threatening life, acts which may lead to serious injury to a person’s anus, breasts or genitals, sexual acts with either a real or simulated corpse or animal (real enough to a reasonable person)) became an offence with the maximum penalty of three years for possession. The 2008 legislation was amended by the Criminal Justice and Courts Act 2015 to include rape pornography. Although there have been convictions under the act, several test cases in court have resulted in the defendant being found not guilty by a jury; as the jury did not find the acts extreme. In addition, Lord Wallace debating the act in the house of lords put forward the lack of sense in that consensually participating in the films would not be a crime but watching them would be.

From antiquity to present day, there have been depictions of sexual activity in all types of media within almost all cultures. The development of these depictions and the establishments reactions to them has been narrated already. It has been suggested so far that these reactions have been from a religious, moral and social perspective. There seems to have been a class battle for the ownership of pornography, with the assumption that the more educated or powerful can view pornography without harm but the working classes are vulnerable and have to be protected from it. The common idea that it is okay for me but not for others, I can handle it, others cannot; the so called ‘third person’ effect (Davidson, 1983; Lo & Paddon, 2000; Gunther, 1995). However, with advances in technology it is no longer possible to protect people from pornography; the internet has lifted the lid of Pandora’s box. Despite losing the battle of control, the establishment, the media and other prominent institutions have endeavoured to create a modern phenomenon concerning pornography and medicalise those that use it excessively; a move from ‘bad’ to ‘mad’.

At this juncture one has to ask whether the authorities have a point; is pornography harmful? Before this question can be addressed, we first have to ask several others: How prevalent is pornography? Who views pornography? Why do people use it? What are the potential effects of pornography? These questions will now be explored in more depth.

Methods

A narrative review of the research literature was undertaken. Whilst a non-systematic approach was adopted, the search terms were comprehensive and reference lists were scrutinised. Search terms including but not limited to ‘pornography’, ‘prevalence’, ‘effects’ were inputted into Google Scholar, Embase and Psychinfo where a vast amount of literature was produced. In many ways, the aims of this paper were too wide for a systematic review. However, despite potential omissions, the narrative approach highlighted the main themes and debates surrounding pornography use.

Results

**Prevalence of pornography**

Accurate statistics on the amount of pornography consumed on the internet are difficult to estimate; as of 2013, 90% of all data ever produced had been generated in the previous two years due to the increased use of smart phones, social media and corporate big data projects (Sintef, 2013). Therefore keeping up to date on usage is virtually impossible. However, given this limitation estimates on internet pornography usage range, depending on how internet traffic is measured, from 37% of all web pages relating to pornography (Optenet, 2010) to just 4% (Ogas & Gaddam, 2012). The variation of these statistics also depends on when the research was conducted; in the early days of the internet users were mostly young men whereas the internet has evolved to include a higher proportion of the population (Ogas and Gaddam, 2012). Despite the amount of internet traffic pornography generates it has been put forward that Google searches for ‘sex’ have been stable since 2004 (Ley, Prause and Finn, 2014).

The world’s largest supplier of internet pornography is Pornhub with 81 million visits per day (Pornhub, 2017); although sites are supposed to be restricted to adult viewers there were 1.4 million underage visitors from the UK during May 2015 (Department of Culture, Media and Sport, 2016). Pizzol, Bertoldo & Foresta (2016) found that 78% of their sample of high school students had consumed internet pornography, with 8% doing so daily.

The internet pornography industry was worth between 1 and 97 billion USD (however, the higher estimates of revenues have to be taken with extreme caution (Ogas & Gaddam, 2012)), with revenues from subscriptions, advertising and also malicious techniques to deceive web site visitors (Wondracek, Holz, Platzer, Kirda & Kruegal, 2010).

Despite the diverse varieties of pornography available on the internet, from standard hardcore material to bizarre and sometimes illegal content, 80% of our sexual tastes tend to centre on 20 different desires: Teen (18+), gay, oral, anal etc. (Ogas & Gaddam, 2012). In terms of gender differences, men tend to visit sites with highly objectified sexual content whereas women visit sites with at least a hint of romance or narrative (Ogas & Gaddam, 2012).

Based on several studies that examine the prevalence rates of pornography use, Hald (2006) suggests that between 86-98% of men and 54-85% of women use pornography; these statistics are supported by more recent research, for example Rissel et al. (2017). However, these statistics do vary as the definitions of pornography change between studies, as do frequencies and the population studied. For instance when focusing on 18 to 39 year olds and basing prevalence on use in the last week, Regnerus, Gordon and Price (2016) found rates of 46% and 16% for men and women, respectively. Based on a U.S. nationally representative sample Grubbs, Kraus and Perry (2018) found that 69% of men and 33% of women reported pornography use with the past year, with 47% of men and 16% women using monthly and 33% of men and 8% women using weekly.

Despite the above statistics on internet pornography, one is reminded that pornography existed before the internet. It has been suggested that the biggest change in prevalence rates occurred in 1973 after the introduction of the video recorder (Buzzell, 2005). Whilst there is a greater amount and range of pornography available, the commonly accepted idea of increasing rates of viewing has been challenged by Ley, Prause and Finn (2014). Nevertheless, with increases in technology, the quality of images and videos has improved, especially with High Definition, also the accessibility has changed. Whereas before a computer was needed to access pornography nowadays the internet is available freely and anonymously on mobile devices. This ‘development’ has changed who can access pornography. As discussed above, those under eighteen years old can now easily access hardcore pornography; it is a normative experience (Sabina, Wolak & Finkelhor, 2008); with associated concerns about early access leading to the normalising of sexual behaviours found within pornography (Tsitskia et al., 2009; Braun-Courville & Rojas, 2009; Lo & Wei, 2005). Anecdotally, we can compare what was commonly available to teenagers thirty years ago, for example the magazine ‘Razzle’, to what many teenagers have access to now, for example the scatological/coprophagic online video ‘2 Girls, 1 Cup’. Cooper (1998) neatly summarises the inherent qualities of internet pornography as the ‘Triple A Engine’; Accessibility, Affordability and Anonymity. However, these factors have been found to facilitate pornography use rather than turbocharging it as originally proposed by Cooper and his associates (Byers, Menzies & O’Grady, 2004).

**Who views pornography?**

Research suggests that the strongest predictor of pornography use is gender, with males far more likely to use it than females (Fisher & Byrne, 1978; Regnerus, 2007). However, female pornography use is rising, with 50% of female adolescents using pornography in the last six months (Peter & Valkenburg, 2006). This rise is supported with research focusing on age of female use; 4% of women aged 50 to 65 years report using internet pornography, whereas 25% of women aged 18 to 34 report doing so (Mansson, Daneback, Tikkanen & Lofgren-Martenson, 2003). It has been put forward that there are different patterns of pornography use between the sexes, with women tending to view pornography with a partner (Mansson, 2000) and men doing so alone (Seidman, 2004). Other factors that are strong predictors of pornography use include high sexual desire (Kontula, 2009), a high number of sexual partners and early sexual intimacy (Poulsen, Busby & Galovan, 2013). Strong predictors of non-use of pornography include having strong ties to religion (Stack, Wasserman & Kern, 2004; Sherkat & Ellison, 1997; Poulsen, Busby & Galovan, 2013) and being in a romantic relationship (Buzzell, 2005; Bridges, McGahan, Andrews & Anton, as cited in Bridges & Morokoff, 2009). There is also research to suggest that black men are more likely than white men to view pornography and that religion does not act as a predictor for non-use amongst black men (Perry & Schleifer, 2017); sociological factors are theorised to account for these differences. Viewing pornography is common among men who have sex with men (MSM); 99% of participants in one study (Stein, Silvera, Hagerty, and Marmor, 2012); and 98.5% in another (Rosser et al., 2013). Pornography use is more frequent among MSM than among those that define themselves as heterosexual (Duggan & McCreary, 2004; Kendall, 2004; Thomas, 2000). Reasons for this increased use of pornography within the MSM community have been speculated to reflect the behaviours of a disenfranchised group of people seeking a safe and anonymous space to explore their sexual needs, especially as part of the coming-out process and identity formation (Ley, Prause & Finn, 2014). Pornography may also reflect a unique part of Gay culture, or the increased use may just be due to fact that MSM are men and thus view more pornography than women (Ley, Prause & Finn, 2014).

**Why people use pornography**

The most obvious reason people use pornography is that it produces sexual arousal and excitement and nearly always involves masturbation (Reid et al. 2012); with 83% of men and 55% of women reporting masturbating while viewing pornography (Boies, 2002). Successful masturbation results in orgasm. During orgasm the parts of the brain responsible for processing emotions diminish and males and females often experience what can be described as a brief trance like state; the famous French euphemism ‘*la petite mort*’ (the little death) still holds true (Georgiadis et al. 2006). There is then the release of pleasurable hormones such as norepinephrine, dopamine and serotonin (Stahl, 2001; Levin, 2014). These hormones are associated with reward systems in the brain and as such, orgasm will be desired. Behaviourally speaking, there is both negative and positive reinforcement associated with orgasm. The positive reinforcement is straight forward and needs no further explanation. However, the aspect of negative reinforcement warrants further discussion.

Emotional regulation is a multitude of processes activated with the intention to control the experience and expression of emotions (Gross, 2007). Artificial substances such as illegal drugs, behaviours such as exercise or purposeful biological processes such as the orgasm can be used to downregulate the effects of negative emotions. These negative emotions have been found to predict the use of online pornography (Wéry, Deleuze, Canale & Billieux, 2018); in particular loneliness (Butler, Pereyra, Draper, Leonhardt & Skinner, 2018). Viewing pornography and masturbating also serves as a form of distraction from difficult emotions; although distraction is less powerful than other strategies there is still evidence of its effectiveness in reducing negative emotions (Kalisch, Wiech, Herrmann & Dolan, 2006). When this distracting behaviour is successful in reducing or removing the aversive experience, i.e. the negative emotion, then according to operant conditioning, it is more likely to be repeated (Skinner, 1938).

Within the literature there are several other functions of pornography presented; for example, exploring sexuality (Attwood, 2005) and education (Cooper, Galbreath & Becker, 2004); Hesse & Pedersen (2017) found that frequent pornography use contributes to a more accurate knowledge of sexual anatomy, physiology and behaviour. However, after sexual excitement, arousal, masturbation and orgasm, the most reported use of pornography is within relationships.

Although men tend to view pornography more frequently than women and more so on their own whilst masturbating than women do; half of men and women report sometimes viewing pornography with their partner (Maddox, Rhoades & Markman, 2009). The reason for this is fairly straightforward, watching pornography with a partner is often a precursor to sexual intercourse (Lawrence & Herold, 1988; Lopez & George, 1995). Additionally, watching pornography with a partner is endorsed by many sex/relationship therapists (e.g. Manning, 2006) as watching pornography together brings closeness whereas watching alone may put up a wall between partners. However, the research on the impact of pornography on relationships is more varied. Individuals who view pornography on their own report lower relationship quality than those who never watch pornography or only watch with a partner (Maddox, Rhoades & Markman, 2009). There are no known studies that demonstrate a positive effect of viewing pornography alone on relationships functioning or men’s views of partners (Maddox, Rhoades & Markman, 2009). In fact, the opposite has been suggested; men rated their partners as less attractive after viewing pornography, whereas pornography did not have this effect on women (Kenrick, Gutierres & Goldberg, 2003). However, repeated exposure to pornography reduces satisfaction with partners in both sexes (Zillman & Bryant, 1988). Additionally, prolonged exposure to pornography is related to increased ideas about the value of non-monogamous relationships and doubts about the value of marriage (Zillmann, 1989). It is therefore apparent that there are differences between the sexes based on who it is that uses pornography in the relationship; it has been suggested that male pornography use is negatively associated with both male and female sexual quality within relationships but female use is positively associated (Poulsen, Busby and Galovan, 2013). These findings are supported by a recent meta-analysis by Wright, Tokunaga, Kraus and Klann (2017) who found that pornography has an overall negative effect on men’s sexual and relational satisfaction.

Based on Blumer’s 1969 Symbolic Interaction Theory, Poulsen, Busby & Galovan, in 2013, theorised that the relationship between pornography use and relationship/sexual quality varies depending on the meaning people attach to the use of pornography. It makes sense that if individuals believe pornography use is a form of sexual expression through which individuals can broaden their understanding of sexuality (Warner, 2000), or that it creates an erotic climate (Daneback, Traeen, & Mansson, 2009) and leads to sexual experimentation and can enhance the relationship, then they are more likely to use pornography. Conversely, if individuals believe that pornography use is a form of infidelity (Schneider, 2002) in the relationship, or that pornography is deviant and objectifies women (Schneider, 2000), then it is less likely they will have a positive experience. Research suggests that internet pornography is significantly correlated with emotional infidelity (Whitty, 2003); both men and women often see pornography as an act of betrayal (Bridges, Bergner, & Hesson-McInnis, 2003). Upon discovering their partner’s use of pornography, many women question whether their partner still desires them sexually or is still committed to the relationship (Bergner & Bridges, 2002). Given these attitudes towards pornography use within relationships, it is not surprising that the majority of male participants in one study reported their female partners did not know about their pornography use (Daneback et al., 2009).

**Potential effects of pornography**

The role of pornography within relationships has already been discussed, and for some pornography use can be a positive experience (Hald & Malamuth, 2008), whilst for others pornography can play a role in reducing the quality of intimate relationships, especially for men (Wright, Tokunaga, Kraus & Klann, 2017). Other potential effects of pornography will now be considered.

Within the media and also within some non-academic literature there is the perception that pornography leads to direct violence against women. A causational link is difficult to prove as the experimental research required would have obvious ethical issues. Therefore, most research in this area focuses on epidemiological data and interviewing and profiling offenders; this latter methodology, although scant, reveals that both rapists and child abusers report using less pornography than controls (Green, 1980). From conducting crime trend analyses McKay & Dolff (1985) put forward that there is no evidence suggesting a causal relationship between pornography use and criminal or deviant behaviour. International studies comparing the availability of pornography over time and recorded sex crimes all suggest that as the availability of pornography increases, the incidence of sex crimes reduces (Landripet, Stulhofer & Diamond, 2006; Diamond, 1999). D’Amato (2006) through examining 25 years of crime data and pornography consumption in the US concluded that rape has declined by 85% at the same time as pornography becoming freely available. It is speculated that pornography actually reduces sexual violence. A possible mechanism for this is explained through pornography acting as a positive displacement activity of sexual aggression (D’Amato, 2006). This mechanism is expanded by Diamond (2009) who suggests that internet pornography facilitates a more socially tolerable and private form of masturbation and consensual relations, whereas before the lustful inclinations took the form of sexual offences such as public exposure or sexual assault.

The idea that pornography leads to sexual violence seems to be discredited. This makes sense as crimes such as rape are considered an act of aggression rather than a sexual act (Russell, 1980). Also, the assumption that pornography leads to sexual crimes presupposes that men lack any agency and cannot be held accountable for their actions, that they have physiological urges that are triggered by pornography (Hunter & Law, 1987).

Although pornography does not necessarily lead to direct physical crimes against women, there are many who suggest that pornography contributes to the degradation of women (for example: Morgan, 1980; Dworkin, 1981; Brownmiller, 1975; Mackinnon & Dworkin, 1988). This takes the form of not only harm to the women who perform in pornographic material but also to women in general, in that they are denied, through the existence of pornography, their own sexuality and that they have to experience men who are acculturated by pornography. The idea of women who perform in pornographic media being victims makes intuitive sense and is akin to the myth of the ‘Happy Hooker’ (Matthews, 2015), not many school girls dream of becoming a porn star. There has to be an element of economic coercion or exploitation to justify the career ‘choice’. However, this position is challenged by pro-porn feminists who advocate sexual expression and freedom (for example: Strossen, 2000). As to the impact on femininity itself or the impact on society as a whole, there needs to be further exploration of whether pornography influences attitudes.

Padget, Brislin-Slutz & Neal, (1989) studied the attitudes toward women of patrons of an adult movie theatre and compared them with a sample of college students. They found that the patrons had more favourable attitudes. This finding is supported by Reiss (1986) who found participants whom had seen a pornographic movie in the last year had more gender equal attitudes than those that had not. Recent studies suggest similar findings; Jackson, Baldwin, Brents & Maginn, (2019) compared the attitudes and beliefs of attendees at an adult entertainment expo to a representative sample of men and concluded that the attendees were no more sexist or misogynistic, and held more progressive beliefs for certain factors. The causal relationship between exposure to pornography and misogynist attitudes has not been demonstrated in the research literature (Linz, Donnerstein & Penrod, 1988; Barak, Fisher, Belfry & Lashambe, 1999; Baron, 1974; Davies, 1997; Kohut, Baer & Watts, 2016). It is proposed that negative attitudes towards women are not generated by pornography but are already deeply ingrained within society (Davies, 1997). Increased exposure to pornography may actually lead to higher measures of gender equality (Baron, 1974).

However, although the majority of pornography does not contain direct violence to women (Carol, 2007) there is much that can be classed as aggressive, misogynist or depicts scenes which are degrading to the actors involved. For this type of pornography, the research does suggest an association with potential aggression (Demarè, Lips & Briere, 1993; Donnerstein & Linz, 1998; Malamuth, Addison & Koss, 2000). Given that non-violent pornography does not have this association then it can be said that any change in attitudes or potential direct harms arise from the violent images rather than the sexual ones (Donnerstein & Linz, 1986). Or there may be ‘third variable’ effects to account for the association; for example, Baer, Kohut and Fisher (2015) found that male sex drive supplanted pornography use in the prediction of sexual aggression. The use of violent and degrading pornography is worrying though, especially as research suggests that users of non-violent and degrading pornography can move onto more extreme forms due to becoming desensitised to the content of frequently viewed material (Linz, Donnerstein & Penrod, 1987; Bridges, 2010). It has also been suggested that heavier users of pornography rate degrading pornography as more arousing than those that consume pornography less frequently (Anton, Minarcik, McGahan & Bridges, 2010). This desensitisation or habituation also occurs for the extreme material, with users seeking ever-more arousing stimuli (Grundner, 2000). Due to social learning theory and observational learning (Bandura, 1977) there is both a theoretical and reported risk that people who view violent and degrading pornography will imitate the behaviour and/or the images will lead to attitudinal change. Even if the images are not violent or blatantly degrading, there are several common practices within virtually all hardcore pornography that can be seen as offensive towards women and an act of degradation; for example cum shots deliberately in the face, ass to mouth etc. Another aspect that involves observational learning is the normalisation of pornography related behaviours such as removal of pubic hair (BBC News, 2017), cosmetic genital surgery, acceptance of anal sex within heterosexual youth (Marston & Lewis, 2014), reduction of condom use in MSM (Stein, Silvera, Hagerty & Marmor, 2012). In addition, viewing pornography can change people’s attitudes towards their own body with many MSM for example feeling inadequate as a result (Duggan & McCreary, 2004; Morrison, Morrison & Bradley, 2007) and men generally internalising the mesomorphic ideal (Tylka, 2015).

Regarding less frequently researched factors associated with pornography use there is the reasonably straight forward idea that viewing pornography is related to unemployment; 28% of internet users download or view pornography at work (IT Facts, 2004). Also, research suggests there is also evidence that pornography use is associated with extramarital sex and paying for sex (Stack, Wasserman & Kern, 2004).

Conclusion: Is pornography harmful?

Despite increases in technology pornography consumption has not exploded over the last few decades as often declared within the media. However, with the move onto the internet, pornography has become more accessible, anonymous, increased in visual quality, and has become more focused upon hardcore content. Men are still the main consumers of pornography, but female use is rising; due to the proliferation of the smartphone there are few restrictions on young people accessing pornography. Sexual arousal and masturbation are the main reasons for pornography viewing, but there are also other reasons including emotional regulation and to enhance sex within relationships. The causal link between pornography and violence and attitudinal change is discredited; however, for common sub-types of pornography there are concerns about actual risks to women and creating misogynist attitudes within society. Taking into consideration all that has been presented it can be suggested that standard hardcore pornography on the whole is not currently harmful, however there are not many benefits associated with it either. Of concern is the impact of degrading and violent pornography on people’s attitudes and behaviours. With the increased usage and normalisation of pornography in younger people, there is a lack of research that directly investigates the longer term impact of growing up with pornography. The potential or future societal harms of pornography remain unknown.

Research suggests that pornography is not harmful for the individual; however, like any substance or behaviour when taken to excess problems may arise. From the research literature and clinical experience, it is clear that for some individuals their relationship with pornography is problematic. A subsequent paper will focus on this central and important aspect with the aim of developing a tentative model drawn from research literature.

**References**

Alilunas, P. (2016). *Smutty Little Movies: The Creation and Regulation of Adult Video*. Univ of California Press.

Anton, C.M., Minarcik, J., McGahan, T.C., & Bridges, A.J. (2010, November). *Subjective arousal to sexually explicit and degrading materials: The effects of gender and frequency of consumption.* Poster presented at the 44th meeting of Association for Behavioral and Cognitive Therapies, San Francisco, CA.

Attwood, F. (2005). What do people do with porn? Qualitative research into the consumption, use and experience of pornography and other sexually explicit media. *Sexuality and Culture*, *19*, 65–86.

Baer, J. L., Kohut, T., & Fisher, W. A. (2015). Is pornography use associated with anti-woman sexual aggression? Re-examining the Confluence Model with third variable considerations. *The Canadian Journal of Human Sexuality*, *24*(2), 160-173.

Bandura, A. (1977).*Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Barak, A., Fisher, W.A., Belfry, S., & Lashambe, D.R. (1999). Sex, guys, and cyberspace: effects of internal pornography and individual differences on men's attitudes toward women. *Journal of Psychology and Human Sexuality*, *11*(1), 63−91.

Baron, R.A. (1974). Sexual arousal and physical aggression: the inhibiting influence of “cheesecake” and nudes. *Bulletin of the Psychonomic Society*, *3*, 337−339.

BBC News (2017). *Girls go along with sex acts, says teacher*. Retrieved 19/12/2017: <http://www.bbc.co.uk/news/education-41499243>

Bergner, R.M., & Bridges, A.J. (2002). The significance of heavy pornography involvement for romantic partners: Research and clinical implications. *Journal of Sex & Marital Therapy*, *28*, 193–206.

Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Englewood Cliffs, NJ: Prentice Hall.

Boies, S.C. (2002). University students’ uses of and recreations to online sexual information and entertainment: Links to online and offline sexual behavior. *Canadian Journal of Human Sexuality*, *11*, 77-89.

Braun-Courville, D.K., & Rojas, M. (2009). Exposure to sexually explicit web sites and adolescent sexual attitudes and behaviors. *Journal of Adolescent Health*, *45*(2), 156-162.

Bridges, A.J. (2010). Methodological considerations in mapping pornography content. In Boyle, K. (Ed.) *Everyday pornography* (pp. 34-49). New York, NY: Routledge/Taylor & Francis Group.

Bridges, A.J., Bergner, R.M., & Hesson-McInnis, M. (2003). Romantic partners’ use of pornography: Its significance for women. *Journal of Sex & Marital Therapy*, *29*, 1–14.

Bridges, A.J., McGahan, T.C., Andrews, A.R., III, & Anton, C. M. (2009). Exploring pornography use within the context of romantic relationships: A survey of college students’ experiences. As cited in Bridges, A. J., & Morokoff, P. J. (2011). Sexual media use and relational satisfaction in heterosexual couples. *Personal Relationships*, *18*(4), 562-585.

Brownmiller, S. (1975). *Against Our Will: Men, Women and Rape*. New York: Simon & Schuster.

Butler, M. H., Pereyra, S. A., Draper, T. W., Leonhardt, N. D., & Skinner, K. B. (2018). Pornography Use and Loneliness: A Bidirectional Recursive Model and Pilot Investigation. *Journal of sex & marital therapy*, *44*(2), 127-137.

Buzzell, T. (2005). Demographic characteristics of persons using pornography in three technological contexts. *Sexuality and Culture*, *9*, 28–48.

Byers, L. J., Menzies, K. S., & O'Grady, W. L. (2004). The impact of computer variables on the viewing and sending of sexually explicit material on the Internet: testing Cooper's" Triple-A Engine". *The Canadian Journal of Human Sexuality*, *13*(3/4), 157.

Byrne, D. & Kelley, K. (1984) In: Malamuth, N.M. & Donnerstein, E. (Eds*.*) *Pornography and Sexual Aggression.* Academic Press: Orlando.

Carol, A. (2007). Reflections on the positions on the polemics of pornography conference. In Mcglynn, C., Rackley, E. & Westmarland, N. (Eds.), *Positions On The Politics Of Porn: A Debate On Government Plans To Criminalise The Possession Of Extreme Pornography* (pp. 16−20). : Durham University.

Cooper, A. (1998). Sexuality and the Internet: Surfing into the new millennium. *CyberPsychology & Behavior*, *1*(2), 187-193.

Cooper, A., Galbreath, N., & Becker, M.A. (2004). Sex on the internet: Furthering our understanding of men with online sexual problems. *Psychology of Addictive Behaviors*, *18*, 223–230.

D'Amato, A. (2006). Porn up, rape down. *Northwestern Public Law Research Paper No. 913013* (June 23).

Daneback, K., Træen, B., & Mansson, S. (2009). Use of pornography in a random sample of Norwegian heterosexual couples*. Archives of Sexual Behavior*, *38*, 746–753.

Davidson, W.P. (1983). The third-person effect in communication. *Public Opinion Quarterly*, *47*, 1–15.

Davies, K. A. (1997). Voluntary exposure to pornography and men's attitudes toward feminism and rape. *Journal of Sex Research*, *34*(2), 131–137.

Demaré, D., Lips, H. M., & Briere, J. (1993). Sexually violent pornography, anti-women attitudes, and sexual aggression: A structural equation model. *Journal of Research in Personality*, *27*(3), 285-300.

Department of Culture, Media and Sport. (2016). *Child safety online: Age verification for pornography*. London, UK. Retrieved from: <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/534965/20160705_AVConsultationResponseFINAL_2_.pdf> .

Diamond, M. (1999). The effects of pornography: An international perspective. *Pornography*, *101*, 223-260.

Diamond, M. (2009). Pornography, public acceptance and sex related crime: A review. *International Journal of Law and Psychiatry*, *32*(5), 304-314.

Donnerstein, E., & Linz, D. (1986). Mass media sexual violence and male viewers: Current theory and research. *American Behavioral Scientist*, *29*(5), 601-618.

Donnerstein, E., & Linz, D. (1998). Mass media, sexual violence, and male viewers. *Mary E. Odem and Jody Clay-Warner. Wilmington, DE: Scholarly Resources, Inc*.

Duggan, S.J., & McCreary, D.R. (2004). Body image, eating disorders, and the drive for muscularity in gay and heterosexual men: The influence of media images. *Journal of homosexuality*, *47*(3-4), 45-58.

Dworkin, A. (1981). *Pornography, men possessing women*. New York: Putnam.

Fisher, W.A., & Byrne, D. (1978). Sex differences in response to erotica? Love versus lust. *Journal of Personality and Social Psychology*, *36*, 117–125.

Georgiadis, J.R., Kortekaas, R., Kuipers, R., Nieuwenburg, A., Pruim, J., Reinders, A.A. T., & Holstege, G. (2006). Regional cerebral blood flow changes associated with clitorally induced orgasm in healthy women. *European Journal of Neuroscience*, *24*(11), 3305-3316.

Green, R. (1980). Variant forms of human sexual behaviour. *Reproduction in mammals Human sexuality*, *8*, 68-97.

Gross, J.J. & Thompson, R.A. (2007). Emotion regulation: Conceptual foundations. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 3-24). New York: Guilford Press.

Grubbs, J., Kraus, S. W., & Perry, S. (2018, June 29). Self-Reported Addiction to Pornography in a Nationally Representative Sample: The Role of Use Habits, Religiousness, and Moral Incongruence. https://doi.org/10.1556/2006.7.2018.134

Grundner, T. (2000). *The Skinner Box Effect: Sexual Addiction and Online Pornography*. Lincoln, NE: Writers Club Press.

Gunther, A.C. (1995). Overrating the X-rating: The third-person perception and support for censorship of pornography. *Journal of Communication*, *45*, 27–38.

Hald, G. M. (2006). Gender differences in pornography consumption among young heterosexual Danish adults. *Archives of sexual behavior*, *35*(5), 577-585.

Hald, G.M., & Malamuth, N.M. (2008). Self-perceived effects of pornography consumption. *Archives of sexual behavior*, *37*(4), 614-625.

Hesse, C., & Pedersen, C. L. (2017). Porn sex versus real sex: How sexually explicit material shapes our understanding of sexual anatomy, physiology, and behaviour. *Sexuality & Culture*, *21*(3), 754-775.

Hunter, N.D., & Law, S. . (1987). Brief Amici Curiae of Feminist Anti-Censorship Task Force. *U. Mich. JL Ref*, *69*, 1987-1988.

IT Facts (2004). 28% download porn at work. <http://blogs.zdnet.com/ITFacts/?p-6080>. *ZDNet Research.*

Jackson, C. A., Baldwin, A., Brents, B. G., & Maginn, P. J. (2019, April). EXPOsing Men's Gender Role Attitudes as Porn Superfans.*Sociological Forum, 34*(2), 483-500.

*Jacobellis v. Ohio*, (1964).378, U.S. 184.

Kalisch, R., Wiech, K., Herrmann, K. & Dolan, R.J. (2006). Neural correlates of self-distraction from anxiety and a process model of cognitive emotion regulation. *J Cogn Neurosci*. *18*(8), 1266–76.

Kendall, C.N. (2004). Educating gay male youth: Since when is pornography a path towards self-respect? *Journal of Homosexuality*, *47*(3-4), 83-128.

Kenrick, D. T., Gutierres, S. E., & Goldberg, L. L. (2003). Influence of popular erotica and judgments of strangers and mates. In S. Plous. (Ed.), *Understanding prejudice and discrimination* (pp. 243–248). New York: McGraw-Hill.

Kohut, T., Baer, J. L., & Watts, B. (2016). Is pornography really about “making hate to women”? Pornography users hold more gender egalitarian attitudes than nonusers in a representative American sample. *The Journal of Sex Research*, *53*(1), 1-11.

Kontula, O. (2009). *Between sexual desire and reality: The evolution of sex in Finland*. Front Royal, VA: The Population Research Institute.

Landripet, I., Stulhofer, A., & Diamond, M. (2006). Assessing the influence of pornography on sexual violence: a cross-cultural perspective. *Paper presented at the International Academy for Sex Research.* Amsterdam, The Netherlands (July 12–15).

Lawrence, K.A., & Herold, E.S. (1988). Women's attitudes toward and experience with sexually explicit materials. *Journal of Sex Research*, *24*(1), 161-169.

Levin, R.J. (2014). The pharmacology of the human female orgasm—Its biological and physiological backgrounds. *Pharmacology Biochemistry and Behavior*, *121*, 62-70.

Ley, D., Prause, N., & Finn, P. (2014). The emperor has no clothes: a review of the ‘pornography addiction’ model. *Current sexual health reports*, *6*(2), 94-105.

Linz, D., Donnerstein, E., & Penrod, S. (1987). The findings and recommendations of the Attorney General's Commission on Pornography: Do the psychological" facts" fit the political fury? *American Psychologist*, *42*(10), 946.

Linz, D.G., Donnerstein, E., & Penrod, S. (1988). Effects of long-term exposure to violent and sexually degrading depictions of women. *Journal of personality and social psychology,* *55*(5), 758.

Lo, V., & Paddon, A.R. (2000). Third-person perception and support for pornography restrictions: Some methodological problems. *International Journal of Public Opinion Research*, *12*, 80–89.

Lo, V. H., & Wei, R. (2005). Exposure to Internet pornography and Taiwanese adolescents' sexual attitudes and behavior. *Journal of Broadcasting & Electronic Media*, *49*(2), 221-237.

Lopez, P.A., & George, W.H. (1995). Men's enjoyment of explicit erotica: Effects of person‐specific attitudes and gender‐specific norms. *Journal of Sex Research*, *32*(4), 275-288.

MacKinnon, C.A., & Dworkin, A. (1988*). Pornography and civil rights. A New Day for Women's Equality*. Minneapolis, MN: Organization Against Pornography

Maddox, A.M., Rhoades, G.K., & Markman, H.J. (2011). Viewing sexually-explicit materials alone or together: Associations with relationship quality. *Archives of Sexual Behavior,* *40*(2), 441-448.

Malamuth, N.M., Addison, T., & Koss, M. (2000). Pornography and sexual aggression: Are there reliable effects and can we understand them? *Annual review of sex research*, *11*(1), 26-91.

Manning, J. C. (2006). The impact of internet pornography on marriage and the family: A review of the research. *Sexual Addiction & Compulsivity*, *13*(2-3), 131-165.

Mansson, S.A. (2000). Commercial sexuality. In B. Lewin (Ed.), *Sex in Sweden: On the Swedish sexual life* (pp. 233–259). Stockholm: Swedish National Institute of Public Health.

Mansson, S.A., Daneback, K., Tikkanen, R., & Lofgren-Martenson, L. (2003). *Love and sex on the Internet*. Gothenburg, University of Gothenburg.

Marston, C., & Lewis, R. (2014). Anal heterosex among young people and implications for health promotion: A qualitative study in the UK. *BMJ open*, *4*(8), e004996.

Matthews, R. (2015). Female prostitution and victimization: A realist analysis. *International review of victimology*, *21*(1), 85-100.

McKay, H.B., & Dolff, D.J. (1985). *The impact of pornography: A decade of literature (Working Papers on Pornography and Prostitution No. 13).* Canadian (Ottawa): Department of Justice.

*Miller v. State of California*, (1973). 413, U.S. 15.

Morgan, R. (1980). Theory and practice: pornography and rape. In L. Lederer (Ed.), *Take Back the Night: Women on Pornography* (pp. 134−140). New York: William Morrow.

Morrison, T.G., Morrison, M.A., & Bradley, B.A. (2007). Correlates of gay men's self-reported exposure to pornography. *International Journal of Sexual Health*, *19*(2), 33-43.

Ogas, O., & Gaddam, S. (2012). *A billion wicked thoughts: What the Internet tells us about sexual relationships*. New York, NY: Plume.

Optenet, (2010). Retrieved from <http://www.optenet.com/en-us/new.asp?id=270>

Padget, V. R., Brislin-Slutz, J.A., & Neal, J.A. (1989). Pornography, erotica, and attitudes toward women: the effects of repeated exposure. *The Journal of Sex Research,* *26*, 479−491.

Perry, S. L., & Schleifer, C. (2017). Race and Trends in Pornography Viewership, 1973–2016: Examining the Moderating Roles of Gender and Religion. *The Journal of Sex Research*, 1-12.

Peter, J., & Valkenburg, P.M. (2006). Adolescents’ exposure to sexually explicit online material and recreational attitudes toward sex. *Journal of Communication*, *56*, 639–660.

Peter, J., & Valkenburg, P. (2011). The use of sexually explicit internet material and its antecedents: A longitudinal comparison of adolescents and adults. *Archives of Sexual Behavior*, *40*(5), 1015–1025.

Pizzol, D., Bertoldo, A., & Foresta, C. (2016). Adolescents and web porn: a new era of sexuality. *International journal of adolescent medicine and health*, *28*(2), 169-173.

Pornhub. (2017). *Year in Review*. Retrieved from: <http://www.pornhub.com/insights/2017-year-in-review>

Poulsen, F.O., Busby, D.M., & Galovan, A.M. (2013). Pornography use: Who uses it and how it is associated with couple outcomes. *Journal of sex research*, *50*(1), 72-83.

Regnerus, M.D. (2007). *Forbidden fruit: Sex and religion in the lives of American teenagers*. New York: Oxford University Press.

Regnerus, M., Gordon, D., & Price, J. (2016). Documenting pornography use in America: a comparative analysis of methodological approaches. *The Journal of Sex Research*, *53*(7), 873-881.

Reid, R.C., Carpenter, B.N., Hook, J.N., Garos, S., Manning, J.C., Gilliland, R., ... & Fong, T. (2012). Report of findings in a DSM‐5 field trial for hypersexual disorder. *The journal of sexual medicine*, *9*(11), 2868-2877.

Reiss, I. L. (1986). *Journey into Sexuality: An exploratory voyage*. Englewood Cliffs, NJ: Prentice-Hall.

Rissel, C., Richters, J., de Visser, R. O., McKee, A., Yeung, A., & Caruana, T. (2017). A profile of pornography users in Australia: Findings from the second Australian study of health and relationships. *The Journal of Sex Research*, *54*(2), 227-240.

Rosser, B.R.S., Smolenski, D.J., Erickson, D., Iantafﬁ, A., Brady, S.S., Grey, J.A., ... Wilkerson, J.M. (2013). The effects of gay sexually explicit media on the HIV risk behavior of men who have sex with men. *AIDS and Behavior*, *17*(4), 1488–1498.

Russell, D.E.H. (1980). Pornography and violence: what does the new research say? In L. Lederer (Ed.), *Take Back the Night: Women on Pornography* (pp. 218−238). New York: William Morrow.

Sabina, C., Wolak, J., & Finkelhor, D. (2008). The nature and dynamics of Internet pornography exposure for youth. *CyberPsychology & Behavior*, *11*(6), 691-693.

Sapolsky, B.S., & Zillmann, D. (1981). The effects of soft-core and hard-core erotica on provoked and unprovoked hostile behavior*. Journal of Sex Research*, *17*(4), 319-344.

Schneider, J.P. (2000). Effects of cybersex addiction on the family: Results of a survey. *Sexual Addiction & Compulsivity*, *7*, 31–58.

Schneider, J.P. (2002). Effects of cybersex problems on the spouse and family. In A. Cooper (Ed.), *Sex and the Internet: A guidebook for clinicians* (pp. 169–186). New York: Brunner/Routledge.

Seidman, E. (2004). The pretreat: Contemporary patterns of pornography use and the psychodynamic meaning of frequent pornography use for heterosexual men. *Dissertation Abstracts International: Section B. Sciences and Engineering*, *64*(8), 4063.

Sigel, L.Z. (2000). Filth in the wrong people's hands: Postcards and the expansion of pornography in Britain and the Atlantic World, 1880-1914. *Journal of Social History*, *33*(4), 859-885.

Sintef, (2013). Retrieved from <http://www.sintef.no/en/latest-news/big-data-for-better-or-worse/>

Sherkat, D.E., & Ellison, C. G. (1997). The cognitive structure of a moral crusade: Conservative Protestantism and opposition to pornography. *Social Forces*, *75*, 957–980.

Skinner, B.F. (1938). *The Behavior of organisms: An experimental analysis*. New York: Appleton-Century.

Stack, S., Wasserman, I., & Kern, R. (2004). Adult social bonds and use of Internet pornography. *Social Science Quarterly*, *85*, 75–88.

Stahl, S.M. (2001). The Psychopharmacology of Sex, Part 1. *Journal of Clinical Psychiatry*. *62* (2): 80-81.

Stein, D., Silvera, R., Hagerty, R., & Marmor, M. (2012). Viewing pornography depicting unprotected anal intercourse: Are there implications for HIV prevention among men who have sex with men?. *Archives of Sexual Behavior*, *41*(2), 411-419.

Strossen, N. (2000). *Defending pornography: Free speech, sex, and the fight for women's rights*. NYU Press.

Thomas, J.A. (2000). Gay male video pornography: Past, present and future. In R. Weitzer (Ed.), *Sex for sale: Prostitution, pornography and the sex industry* (pp 49–66). New York: Routledge.

Tsitsika, A., Critselis, E., Kormas, G., Konstantoulaki, E., Constantopoulos, A., & Kafetzis, D. (2009). Adolescent pornographic internet site use: a multivariate regression analysis of the predictive factors of use and psychosocial implications. *CyberPsychology & Behavior*, *12*(5), 545-550.

Tylka, T.L. (2015). No harm in looking, right? Men’s pornography consumption, body image, and well-being. *Psychology of Men & Masculinity*, *16*(1), 97.

Warner, M. (2000). *The trouble with normal: Sex, politics, and the ethics of queer life*. Cambridge, MA: Harvard University Press.

Wéry, A., Deleuze, J., Canale, N., & Billieux, J. (2018). Emotionally laden impulsivity interacts with affect in predicting addictive use of online sexual activity in men. *Comprehensive psychiatry*, *80*, 192-201.

Whitty, M.T. (2003). Pushing the wrong buttons: Men’s and women’s attitudes toward online and offline infidelity. *Cyberpsychology & Behavior*, *6*, 569–579.

Wondracek, G., Holz, T., Platzer, C., Kirda, E., & Kruegel, C. (2010, June). Is the Internet for Porn? An Insight Into the Online Adult Industry. In Proc. *Workshop on Economics of Information Security.*

Wright, P. J., Tokunaga, R. S., Kraus, A., & Klann, E. (2017). Pornography consumption and satisfaction: A meta-analysis. *Human Communication Research*, *43*(3), 315-343.

Zillmann, D. (1989). The effects of prolonged consumption of pornography. In D. Zillmann & J. Bryant (Eds.), *Pornography: Research advances and policy considerations* (pp. 127-158). Hillsdale, NJ: Lawrence Erlbaum

Zillmann, D., & Bryant, J. (1988). Pornography's impact on sexual satisfaction. *Journal of Applied Social Psychology*, *18*(5), 438-453.