

# **THE INFLUENCE OF PORNOGRAPHY ON YOUNG PEOPLE'S SEXUAL HEALTH AND BEHAVIOUR**

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## **Abstract**

This thesis aims to explore whether pornography use impacts upon young people's sexual health and behaviour. This is examined over a number of chapters. Chapter 1 provides an introduction to this topic through reviewing pornography use in young people, and the current identified impacts it can have. Chapter 2 is a systematic literature review on the interactions between pornography, sexual health, and sexual behaviour in young people. Here, current literature is reviewed, and the strengths and weaknesses of relevant studies are discussed. In Chapter 3 the Multiphasic Sex Inventory (MSI) is critiqued. This considers the validity and reliability of using this tool and its psychometric properties. Chapter 4 is an empirical study exploring pornography use, sexual health and sexual behaviour in young people, and considers whether there are interactions between the three variables. The data are analysed through various means, including principal component analysis (PCA). Sexual interest scales were identified and relationships were found between some scales and sexual health issues such as erectile dysfunction (ED). Chapter 5 brings together the chapters from the thesis and links the findings from the systematic literature review with the results from the empirical research paper and critique of the MSI. Implications, limitations of the thesis, and ways forward are all discussed in this chapter. This thesis also highlights the need for further research in this field, including cross-cultural studies.

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## **Chapter 1**

### **Introduction**

The Oxford Dictionary defines pornography as being “printed or visual material containing the explicit description or display of sexual organs or activity, intended to stimulate sexual excitement.” This definition is used throughout this thesis, and is a definition that other studies have also used (Hare, Gahagan, Jackson, & Steenbeek, 2014; Flood, 2016). It is worth noting that pornography takes on a number of forms, including video, images, and anime, and has a variety of productions, such as professional, amateur, and self-taken. The content of pornography can range from nudity to engagement in sexual acts, including violent sexual acts (Bleakly, Hennessy, & Fishbein, 2011; Bridges, Wosnitzer, Scharrer, Sun, & Liberman, 2010; Crabbe, 2016; Flood, 2009; Horvath et al., 2013; Livingstone et al., 2011; Martellozzo et al., 2016; Peter & Valkenburg, 2016). Genres of pornography also have a wide-range, including hardcore, group sex, erotica, BDSM, gay, and lesbian (Hare et al., 2014). However, Internet pornography is largely dominant in terms of access, and this most frequently consists of white, heterosexual pornography, aimed at a heterosexual male audience (Crabbe, 2016). This type of pornography tends not to include condom use, can be viewed as degrading women, and suggests sex is instrumental in that the behaviour is an act to get needs met and does not have an emotional context (Quadara, El-Murr, & Latham, 2017).

### **Young people’s use of the Internet and online pornography**

In 2015, Ofcom highlighted that 39% of three to four year old children used the Internet, with the rate of use increasing with age, to around 98% of 12–15 year olds accessing the Internet. It is suggested that the majority of access to the Internet is at school or at home (with 96% of children accessing it this way), but around 31% of children access the Internet when they are “out and about” (Green, Brady, Olafsson, Hartley, & Lumby, 2011), which could suggest a level of unsupervised access. There are a number of online

risks for children and young people, of which includes viewing inappropriate or illegal material (Livingstone & Haddon, 2012; Nansen et al., 2012). Internet pornography is easily accessible, and subsequently can be stumbled across by those not searching for it. This risk of inadvertent exposure is as likely to happen to children online, as it is to those who deliberately seek pornography (Martellozzo et al., 2016). Rovolis and Tsaliki (2012) investigated Internet use in young people aged 9 to 16 years old. They found that being male and an older young person increased the likelihood of exposure to pornography, compared to those who were female and younger. It was also suggested that using the Internet in a private place and being unsupervised increased the likelihood of exposure to pornography. Online pornography can be accidentally viewed on websites that are not pornographic, for example on gaming, social media, and video websites (Horvath et al., 2013). As such, people can experience inadvertent exposure to pornography. Young people using the Internet for medical or sexual information can be exposed to pornography (Horvath et al., 2013; Katz, Lee, & Byrne, 2015).

Martellozzo et al., (2016) completed an extensive study, named 'I Wasn't Sure it was Normal to Watch it', and looked into pornography use in young people aged 11 to 16 years. It was found that 53% of young people had been exposed to pornography, of which 94% reported first viewing pornography before being 14 years old. Twenty-eight percent of those exposed to pornography reported the first time was accidental, for example, seeing a pop-up advertisement, and 60% reported first viewing pornography at home. The study also discovered that 26% of young people had been sent online pornography or a link to it. Nineteen percent had pornography shown to them by someone else, without having asked to see it. Nineteen percent reported searching for pornography on their own, and 4% reported sending pornography or links to it, to others.

Pornography can act as a form of education, and the main source of sexual education for some (Crabbe, 2016; Fileborn, 2016; Flood, 2016), which can become a basis for sexual development (Walsh, 2012). The impact of pornography of young people is currently being researched.

### **Impacts of pornography**

The impact of adolescents viewing pornography can be seen globally in domains such as addiction, compulsiveness, and criminal behaviour (Owens, Behun, Manning, & Reid, 2012). Although frequently viewing pornography has not been shown to increase levels of sexual aggression (Ybarra & Mitchell (2005), it has been suggested that pornography reinforces a “pornographic script” for body type and sexual activity (Lofgren-Martenson & Mansson, 2010). It is suggested that viewing pornography reinforces the ‘type’ of sexual activities and sexual fantasies of young people, with this having a greater impact on younger viewers. Previous research has investigated the impact of pornography on adolescents’ attitudes (Braun-Courville and Rojas, 2009; Tsitsika et al. 2009), sexual behaviours (Alexy, Burgess, & Prentky, 2009; Haggstrom-Nordin et al., 2006), self-concept, social development, and interpersonal relationships (Mesch, 2009). However, it has not been investigated if pornography specifically normalises deviant sexual behaviour. Although, it does need to be identified what is deemed normal and deviant sexual activity. What has previously been classed as deviant sexual activity has now become normalised within sexual activity between adolescents (Haggstrom-Nordin et al., 2005). Pornography can impact on the likelihood of engaging in first sexual experience at an earlier age. It can also normalise sexual practices such as anal intercourse, facial ejaculation, deep fellatio, and sex with multiple partners (Quadara, El-Murr & Latham,

2017). There is also an association between pornography consumption and unsafe anal and vaginal sex, and a lack of condom use.

There are gender differences in consumption of pornography, as well as its impacts (Beyens, Vandenbosch, & Eggermont, 2014; Flood, 2009; Martellozzo et al., 2016; Sabina, Wolak, & Finkelhor, 2008). For example, Ogas and Goodam (2011) found that heterosexual men were more likely to search for heterosexual pornography with a focus on females, whereas women were more likely to search for male-targeted pornography, as well as male-to-male and paranormal romance (e.g. Vampires). Women were also more likely to use erotic books, whereas males would more likely use visual pornography. Martellozzo et al., (2016) also found that males view pornography more so than females, with males actively searching for it twice as much as females, and males had more positive attitudes towards pornography than females. It is suggested that there are gender differences in attitudes towards pornography, with females having more negative views than males. Explicitly, males have been suggested to find pornography exciting, arousing, and amusing, whereas females are more likely to find it scary and shocking. However, in children around the ages of 9 to 12 years, viewing pornography can cause upset or distress (Quadara, El-Murr & Latham, 2017). It is suggested that negative feelings towards pornography diminish with more viewing (Martellozzo et al., 2016).

Globally, young people's pornography use has become a government issue due to interventions being needed to address subsequent consequences and potential harm (Werrett, 2010; Valcke, De Wever, Van Keer, & Schellens 2011; Petley, 2014). It is suggested that having quality sexual education can support young people in protecting

them from the impacts of pornography exposure (Chang, 2010; Laouris, Aristodemou, & Fountana, 2011; Jones, Thom, Davoren, & Barrie, 2013; Pratt, 2015).

### **Progressions in pornography**

Pornography has evolved through the centuries and decades, for example in the past 15 years moving from magazines such as Zoo and Playboy (Beggan & Allison, 2003) to online websites, as well as changes such as moving from largely male heterosexual audience (Crabbe, 2016) to targeting female and LGBTQI+ audiences too (Morrison, 2004). Pornography has progressed and in the recent past, since around 2005, “sexting” has become a normalized, convenient, and accessible means of creating, distributing, and accessing pornography (Livingstone & Gorzig, 2012). Sexting, a combination of the words “sex” and “texting”, are naked, semi-naked, sexually suggestive, or explicit images, which can be distributed via text message, email or social media websites (Lee et al., 2013). It is suggested that young people “viewing images of similar-aged peers, which could be classed as age-appropriate, albeit illegal, sexual behavior” (NSPCC, 2016, <sup>[1]</sup><sub>SEP</sub>pp. 13-14). However, there are potential consequences associated with sexting (Horvath et al., 2013; Livingstone & Gorzig, 2012) and it is suggested that it can negatively impact on young people’s socialization and sexual development (Abelee, Campbell, Eggermont, & Roe; 2014; Albury & Crawford, 2012; Cooper, Quayle, Jonsson, & Svedin, 2016; Lee & Crofts, 2015; Nielsen, Paasonen, & Spisak, 2015). Some research has highlighted that “24% of 12 to 16 year olds have received a “sext” and 8% have sent a “sext” of themselves to someone else” (Steeves, 2014c, p. 5). Other research has found a similar prevalence rate of sexting, with 7% of 11 to 16 year olds having shared a naked or semi-naked photo of themselves with others. It was also reported that 12% of 11 to 16 year olds had taken a topless photo of themselves, 4% had taken a naked from

the waist down photo, and 3% had taken a completely nude photo of themselves (Martellozzo<sup>[11]</sup>et al., 2016). In another set of 11 to 16 year olds, research highlighted that 9% had received a “sext”, 5% had seen a message of others engaging in sexual behaviour, and 3% had been asked for a photo of their genitalia (Green et al., 2011). Although there has been a normalisation of sexting, and it can promote sexual development and learning, there are concerns regarding non-consensual sharing of “sexts”, which can cause emotional distress to those in the image (Abelee et al., 2014; Lee & Crofts, 2015).

### **Aims and hypotheses of the thesis**

Previous research in this field has primarily focused on adults, for example Ogas and Gaddam (2011) conducted a large study on what men and women find arousing. However the need for research on the impact of pornography on adolescents has more recently been noted. The research into sexual behaviour has largely produced prevalence rates of specific sexual acts. What it has not done is provide much literature into the interactions pornography can have on specific sexual behaviours, as well as sexual health. Nor has there been research into the content of pornography that young people are viewing (Owens et al., 2012; Peter & Valkenburg, 2016). Sexual interests of young people, therefore, are investigated within this research. In investigating the impact of pornography on young peoples’ sexual health and behaviour, this will enable better understanding and subsequently any protective strategies to be put in place. The outcomes of this work have the capacity to support legislation and policies around young people’s health in the future. To do this, there was a focus on their pornography use and how this influences said health and behaviour, given the previous literature around the impacts it can have. The majority of previous literature has focused on prevalence rates of pornography use, sexual health, and sexual behaviour, as opposed to considering the



direct interactions pornography can have. It also explored vague and broad descriptions of each aspect rather than specific interests.

In light of the lack of research reviewing the interactions between the young people's sexual health, sexual behaviour, and pornography use, the overall aim of this research is to add to the deficit in this field through both further research and critiques of studies and psychometric tools, as well as conducting an empirical research project. With this, specific research aims include:

- Identify what types of pornography young people are viewing and the frequency of use.
- Identify what types of sexual health problems young people have experienced and the frequency of these experiences.
- Identify what types of sexual behaviours young people are engaging in and the frequency of these behaviours.
- Identify if the use of pornography (both frequency and type) influences young people's sexual health and behaviour.

Chapter 2 provides a systematic literature review to explore the current literature in the field that directly compares two parameters out of pornography use, sexual health, and sexual behaviour, in young people aged 15-25 years old. This systematic review aims to explore the current literature regarding the interaction between pornography use, sexual behaviour, and sexual health in young people. Chapter 3 includes a critique of the use and psychometric properties of the Multiphasic Sex Inventory (MSI) – the most widely used measure of general sexual behaviour and problems. This considers the validity and reliability of using this tool and its psychometric properties. Chapter 4 explores

pornography use, sexual health and sexual behaviour in young people, and considers whether there are interactions between the three variables. There is a lack of research in this domain, therefore the research data provided a wealth of knowledge, and is analysed through various means, including principal component analysis (PCA). Chapter 5 brings together the chapters from the thesis and links the findings from the systematic literature review with the results from the empirical research paper and critiques of the MSI. Implications, limitations of the thesis, and ways forward are all discussed in this chapter.

### **Originality and potential benefits of the current thesis**

The use of pornography by young people and its impact on normalising deviant sexual behaviour and fantasies is unknown. The current research will identify any potential risks associated with young people viewing pornography, in particular that of deviant sexual activity. As pointed out by Owens et al., (2012) such research will help develop support for young people facing risks associated with Internet pornography. Current risks to have been identified are cybersex (Rimington & Gast, 2007; van den Eijnden, Spijkerman, Vermulst, van Rooij, & Engels, 2010), compulsive Internet use (CIU), and lack of awareness in discerning and managing online dangers (Delmonico & Griffin, 2008).

A contribution from this research includes aiding policies and education. Previous research has suggested 42% of 10 to 17 year olds had viewed pornography online, with 66% of exposures being unwanted (Wolak, Mitchell, & Finkelhor, 2007). These findings support the NSPCC's (2015) statement that pornography use in young people needs reviewing and that findings are out-dated and need revisiting. However, what is worth noting is that two thirds of young people who have viewed pornography have not actively sought it out. This research would therefore fit in with the proposal of the Online Harms

White Paper (2020), which aims to enact age verification on websites to protect young people from age-inappropriate and harmful content, including online pornography. Pornography has been suggested to negatively impact on sexual education – it is significantly associated with sexual attitudes and behaviours connected to sexually transmitted infections (STIs) (Brown & L'Engle, 2009; O'Hara, Gibbons, Gerrand, Li, & Sargent, 2013). On the other hand, some research has reported no significant correlations between pornography use and attitudes towards safe sex (Morrison et al., 2004). The results from this study can further inform policies and education of young people's sexual health and behaviour. However, the context of the thesis only allowed for some of the data to be reported – data was sought for the research questions, plus additional data was sought relating to the topic in order to gain as much information as possible in one attempt. Due to this, subsequent papers addressing the remaining data collected will be completed.

## **Chapter 2**

### **Systematic Literature Review**

*The interaction between young people's pornography use, sexual health, and sexual  
behaviour: A systematic literature review*

## **Abstract**

*Aim:* Although pornography use by young people (age 15-25) occurs frequently, it is not a widely researched topic. Despite the highly topical area, research into the influence that viewing pornography has on young people's sexual behaviour and sexual health is minimal. This systematic review aimed to explore the current literature regarding the interactions between pornography use, sexual behaviour and sexual health in young people.

*Method:* Scoping searches, both comprehensive and general, were conducted to identify the need for the current review. The strategy involved searching three major electronic databases, examining reference lists of included research papers, and contacting four key experts in the field. Inclusion/exclusion criteria and quality appraisal were conducted on each paper. All studies included ( $n = 6$ ) had a cross-sectional design, and were deemed good quality, with quality scores ranging from 57% to 82%.

*Results:* For the six studies that met the inclusion criteria, a narrative data synthesis was produced. This highlighted that pornography use in young people was seen to occur more in males than females, and material was predominantly accessed online. No studies investigated any sexual health issues young people were encountering; instead the focus was on the attitudes young people held regarding safe sex and HIV/AIDS. Findings regarding the relationship between pornography use and attitudes towards sex were inconsistent – one study suggested both positive and negative influences depending on gender, whereas another found no significant associations. All studies that examined the influence of pornography use on sexual behaviour supported a positive association

between the two variables. Two studies indicated that the influence was dependent on gender.

*Conclusion:* This systematic literature review highlighted the importance of continuing to explore the impact of pornography use on young people's sexual behaviour and health. Due to the nature of the review, certain research was excluded. Given that this is a relatively new field of research, including research that was unobtainable, unpublished, or in a language that was not English may have produced different findings. It is important to understand the full extent to which pornography has been found to associate with these factors in order to manage the sexual health and behaviours of young people, and educate them accordingly.

## **Introduction**

Research into the influence of pornography upon young people has increased over recent years, with a focus on its association with sexual health and sexual behaviour. Young people represent a significant proportion of a country's population and, as the 'next generation', their health is essential for economic and social progress (Raheel, Mahmood, & BinSaeed, 2012). In the US, young people's sexual behaviour has been a significant issue, with increases in sexually transmitted infections (STIs) occurring in those who become sexually active at a younger age (Martino, Collins, Elliott, Strachman, Kanouse, & Berry, 2006). In relation to this, a lack of knowledge regarding STIs is associated with being sexually active (Mohammadi, Mohammad, Farideh, et al., 2006; Jaffer, Al Ajmi, & Alouhaishi, 2006). Subsequently, findings regarding this relevant area will provide valuable information and guidance for sexual education, promotion of sexual health, policy makers, and program developers (Hald, Smolenski, & Rosser, 2013; Stulhofer, Busko, & Landripet, 2010).

### **Pornography use in young people**

In young people, pornography use is globally most prevalent amongst males, with females being reported to view much less in comparison (Petersen & Hyde, 2010; Stulhofer et al., 2007). Gender differences are primarily investigated in regards to pornography use in young people, as opposed to types of material viewed. However, some research has suggested that young males view hard-core pornography (which explicitly depicts sexual acts) significantly more than young females, whereas young females view soft-core pornography (which displays a lack of penetration, in that the behaviour is assumed, rather than explicitly shown) significantly more than young males, with the majority of pornography accessed via the internet, followed by TV and DVD (Hald,

Kuyper, Adam, & de Wit, 2013; Hald, Seaman, & Linz, 2013; Wright, 2013).

### **Sexual health in young people and links with pornography**

Previous research has suggested that pornography has both positive and negative consequences on young people's sexual health. Pornographic materials can act as educational tools for sexual health (Beggan & Allison, 2003). Conversely, other research has suggested that pornography impacts negatively on education due to the lack of safe sex practices involved (Thomas, 2000). In particular, there is little, if any, evidence of condom use in pornography, and its use was only considered in 1998 due to the industry heavily relying on HIV testing. Even as recently as 2016, the state of California voted against condom use in the porn industry, failing to enact the proposal. Due to the lack of regard for safe sex practice in pornography, it is suggested that viewers may also take on this disregard for safe sex practice, such as not using condoms. With actors in pornographic videos usually appearing attractive and healthy, it is suggested that this may further diminish the importance of safe sex practices (Hald, et al., 2013). In comparison to the education of other health issues, sex education and related intervention programs are more difficult to implement within society and work effectively, which in turn impacts upon the public's health. It is suggested that this is due to sociocultural influences, such as a reluctance to acknowledge that young people are engaging in sexual activity prior to marriage, with others of the same sex, or with sex workers (Raheel, Mahmood, & BinSaeed, 2012).

Longitudinal research into the relationship between pornography and sexual health is the most frequently used design, as it allows for control of a large number of potential confounding variables. Research using this design has predominantly found significant



associations between pornography use, sexual attitudes, and sexual behaviour, which primarily relate to STIs (Peter & Valkenburg, 2008; Ybarra, Mitchell, Hamburger, Diener-West & Leaf, 2011).

### **Sexual behaviour in young people and links with pornography**

Firstly, gender differences have been found in regards to masturbation. Across cultures, males' engagement in masturbation is higher than females' (Bejin, 1996; Leitenberg, Detzer, & Srebnik, 1993; Lewin, 2000; Parish, Laumann, & Mojola, 2007; Petersen & Hyde, 2010). Although, more recently, prevalence of female masturbation has increased (Dekker & Schmidt, 2003; Kontula & Haavio-Mannila, 2003), but due to socio-cultural issues, they often feel ashamed and guilty (Hogarth & Ingham, 2009).

There are several significant factors that impact upon young people becoming sexual active, including the young person's living environment, which may or may not allow access to media (Zuraayk, 1988). Access to and being exposed to media, including viewing pornography, as well as watching TV unsupervised, relates to an earlier age of becoming sexually active (Adhikari & Tamang, 2009; Chinsembu, Siziya, Muula, et al., 2008; Cohen, Farley, Taylor, et al., 2002; Haggstrom-Nordin, Hanson, & Tyden, 2005; Kuzman, Simetin, & Franelic, 2007; Selikow, Ahmed, Flisher, et al., 2009; Seme & Wirtu, 2008). Viewing pornography is widely associated with negative influences on sexual behaviour, and increased sexual health risk, such as contracting a STI (Hald, Seaman, & Linz, 2013). It is suggested that the impact of pornography on young people's sexual behaviour is more severe than in adults due their sexuality not being fully established (Stulhofer, Busko, & Landripet, 2010) and viewing it more frequently (Kagerer, et al., 2011; Morgan, 2001; Sinkovic, Stulhofer, Bozic, 2012; Traeen, Nilsen,

& Stigum, 2006; Wingood, DiClemente, Harrington, Davies, Hook, & Oh, 2001).

Viewing pornography has been associated with various sexual behaviours (Hald, Smolenski, & Rosser, 2013; Morgan, 2011). These have included higher levels of sexual arousal, lower age of losing virginity, more sexual partners, engagement in having transaction sex (i.e. paying someone for sexual acts), increased engagement in group and casual sex, less condom use, and more STIs (Braun-Courville & Rojas, 2009; Peter & Valkenburg, 2011; Stulhofer, Busko, Landripet, 2010; Traeen B, Nilsen TS, Stigum, 2006; Wingood et al., 2001; Wright & Randal, 2012). The effect pornography has on young people's sexual behaviours has primarily suggested an impact on sexual aggression and risk taking (Brown & L'Engle, 2009; Vega & Malamuth, 2007; Wosnitzer & Bridges, 2007). It has been suggested that pornography that commonly displays anal sex has influenced the rise of engagement in anal sex. Some research on this topic has not produced significant results to either support or contradict this suggestion (McBride & Fortenberry, 2010). However, Rogala and Tyden (2003) reported that females who viewed pornography were more likely to engage in anal sex than those who did not view pornography (50% compared with 27% respectively), with one third of participants believing the exposure had influenced their sexual behaviour.

It is suggested that current literature regarding the negative influence of pornography on sexual behaviour and sexual risk amongst young people has not addressed important limitations. This includes not consistently investigating the association between pornography use and a wider range of sexual behaviours, instead focusing primarily on the relationship with STIs and sexual coercion (Hald, Kuyper, Adam, & de Wit, 2013). As such, this may have led to an overvalued idea of the impact viewing pornography has

on sexual behaviours and sexual risk (Hald, 2006; Luder, Pittet, Berchtold, Akre, Michaud, & Suris, 2011).

### **The current review**

There is widespread acknowledgement of the need to address pornography use in young people (National Society for the Prevention of Cruelty to Children [NSPCC], 2015), mainly because addressing pornography use in young people is suggested to subsequently address their sexual behaviour and sexual health. One survey revealed that in the past year, 42% of young Internet users aged 10 to 17 years had been exposed to Internet pornography, with 66% of exposure being unwanted (Wolak, Mitchell, & Finkelhor, 2007). These findings support the need to better understand if viewing pornography does influence sexual behaviour and health, as it could be having an impact on those who are not seeking to view it, as well as those who are.

Young people in this review include males and females aged between 15 and 25 years. Previous research has classified the age of ‘young people’ differently, therefore, this review has used the ages of 15 to 25 as an appropriate range to cover the majority of previous research, as well as covering the age range when first experience of sexual intercourse is most likely to occur (Mosher, Chandra, & Jones, 2005) – by age 15, 25% of the population have had their first experience of intercourse, this increased quite rapidly in age ranges until age 22-24 where 90% of the population were included. The inclusion of sexual health in this review was deemed relevant due to the findings that of all those diagnosed with a sexually transmitted infection (STI), half of this population are between the age of 15 and 24 years old (The Centres for Disease Control and Prevention (CDC), 2018).

There has not previously been a review regarding the impact of pornography on sexual health and sexual behaviour in young people, thus justifying the current review. This review identified and assessed existing research looking into associations between pornography use, sexual health, and sexual behaviour in young people. The data is systematically evaluated to draw conclusions about whether viewing pornography does influence young people's sexual behaviour, and subsequent sexual health, and whether addressing pornography use is important for health policies and education purposes. Definitions of sexual behaviour vary across research; therefore this review was able to collate these categories to see the impact of pornography on sexual behaviour as a whole, as well as on specific sexual behaviours. Similarly, sexual health may be defined differently; again this review can examine the influence pornography has on specific forms of sexual health.

### ***Aim and Objectives***

This systematic review aimed to explore the interactions between viewing pornography, sexual health, and sexual behaviour in young people (aged 15-25).

Specific objectives were:

- To establish which types of pornography young people were viewing, what form of media they were viewing it on (i.e. videos, still images), and how they were gaining access to it (i.e. online websites, magazine, peer sent via text or email)
- To establish what types of sexual behaviour young people have engaged in
- To determine if there is a link between young people's pornography usage and their sexual behaviour

- To establish what forms of sexual health issues young people have encountered
- To determine if there is a link between young people's pornography usage and their sexual health

## **Method**

### **Sources of literature**

Before commencing this review, several databases were searched to establish the potential size of literature and to identify existing and on-going reviews. The scoping search was conducted using the Cochrane Database of Systematic Reviews (CDSR), the Centre for Reviews and Dissemination (DARE), and the Campbell Collaboration. The scoping search identified there was no existing or planned reviews, confirming the relevance of this review. The search then moved to scoping PsycINFO and MEDLINE, limiting results to 'reviews', in order to establish previous research in this area, thus helping to define the review question. The search was undertaken describing the research literature in the most common terms (i.e. pornography use and young people and sexual health and sexual behaviour), using basic free text terms (see below).

porn\* AND you\* AND "sex\* health\*" AND "sex\* behav\*"

This initial, brief search identified articles relevant to the current review. It indicated that through a comprehensive search, sufficient research would be retrieved to carry out a systematic literature review on the area.

### **Search strategy**

The literature search for this review incorporated three stages. The first stage involved

searching major electronic databases these included: Child Development & Adolescent Studies (date – present); ERIC (1966 – present); MEDLINE (1946 – present); PsycINFO (1967 – present). Initial searches were conducted on 27<sup>th</sup> and 28<sup>th</sup> February 2015 and on 24<sup>th</sup> April 2015. A second phase of searches was completed on 18<sup>th</sup> March 2017 and 7<sup>th</sup> April 2017, and the most recent searches were conducted on 8<sup>th</sup> September 2019. The next step involved searching the reference list of all included papers for relevant articles. The final step involved contacting (via email [11<sup>th</sup> April 2015; 26<sup>th</sup> and 27<sup>th</sup> May 2015]) experts in the field of pornography use and its impact on young people's sexual health and behaviour, to request any studies that may have been missed in the preliminary search. This primarily included experts who had released an abstract, but not an article. Three experts responded back via email.

### ***Search terms***

Two of the searched databases – MEDLINE and PsycINFO – were accessed via the OvidSP platform. As it uses subject headings to index the contents of the databases, the systematic search method employed mapped search terms to subject or MeSH<sup>3</sup> headings. Relevant subject headings were not identified. Alternatively, free text words were used on the OvidSP platform, whereby terms are identified in the title, abstract, or main text of articles held by the database. It has been suggested that using both subject headings and free text searching should be used in order to maximise the search accuracy (Dubdar & Fleeman, 2014), therefore this approach was conducted where possible. Some databases, including ERIC accessed via the EBSCOhost platform, do not allow for subject heading searches, therefore search terms had to be modified for various databases.

Some of the search terms, ‘pornography’ in particular, are referred to in a variety of ways throughout literature. Therefore an extensive list of definitions was created, making use of truncation and adjacency search, in order to ensure all definitions of the same concept were captured. The final set of terms was established after various versions of search terms were conducted to identify optimal search syntax whereby specificity; in that papers are relevant, and sensitivity; not having too many irrelevant papers, were considered and balanced. The final search terms are displayed below. The Boolean operators ‘OR’ (for synonyms) and ‘AND’ (to combine search terms) were used accordingly. Search terms were modified when necessary for different databases and platforms.

Porn\* OR “indecent image\*” OR erotic\* OR indecency OR sexploitation OR “adult material\*” OR “adult movie\*” OR “adult film\*” OR hard-core OR soft-core OR “obscene material\*” OR “obscene image\*” OR “sexually explicit material\*” OR “sexually explicit media” OR X-rated OR “provocative adj2 (image\* OR material\* OR media OR video\* OR photo\*)”

AND

Youth\* OR young\* OR teen\* OR adolescen\* OR child\* OR innocen\* OR juven\* OR \*pubescent OR junior OR male\* OR lad\* OR boy\* OR student\* OR (16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25) adj2 year\* OR (16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25) adj4 age\*

AND

(sex\* OR intimate\* OR passion\* OR sensual\* OR erotic\*) adj3 (Health\* OR infect\* OR disease\* OR condition\* OR state OR wellbeing OR illness\* OR sickness\* OR debilit\* OR gonorrhea OR chlamydia OR syphilis OR HIV OR AIDS OR warts OR herpes OR lice)

AND

(sex\* OR intimate\* OR passion\* OR sensual\* OR erotic\*) adj3 (behav\* OR act\* OR conduct\* OR nature\* OR practice\* OR expression\* OR decenc\* OR indecen\*)

Appendix A displays a sample set of search syntax used for PsycINFO (OvidSP platform) and ERIC (EBSCOhost platform). Following each complete search, the results from the database were exported into EndNote reference manager.

### ***Study selection***

#### ***a) Inclusion criteria and PICO***

After conducting the above searches, 219 hits were identified. Firstly, all duplicates were removed ( $n = 41$ ), leaving 180 citations. The titles and abstracts of these remaining studies were then screened to remove those irrelevant to the review, based on not meeting the inclusion criteria outlined below. After this removal ( $n = 150$ ), full text copies of the studies were then obtained of the remaining studies ( $n = 28$ ). The inclusion/exclusion criteria were then applied (see Appendix B for the full tool) to each paper and information gathered was recorded – including comments regarding each criterion. All excluded studies ( $n = 24$ ) are listed in Appendix C, all of which did not meet the PICOS criteria (outlined below). The same inclusion/exclusion criteria were applied and recorded for



articles found via hand searching, however no papers met the criteria. Similarly, the inclusion/exclusion process was applied to expert given articles – but no articles met the criteria.

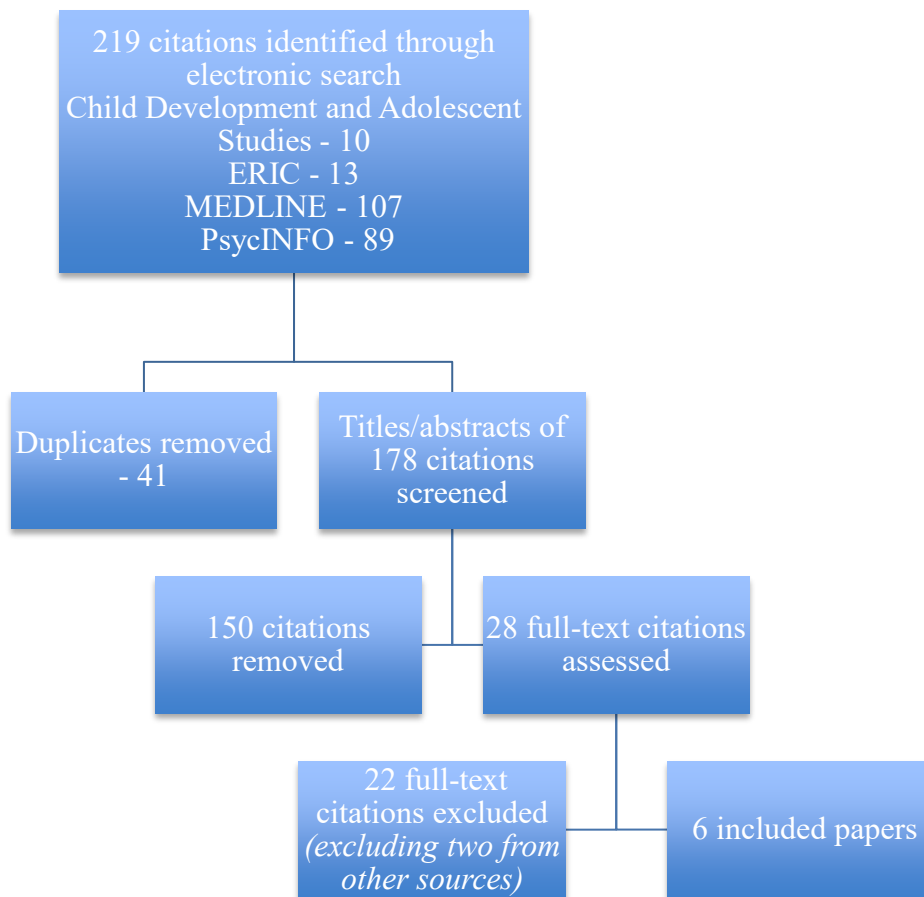
In order to devise appropriate inclusion/exclusion criteria, the PICOS (Population, Intervention, Comparator, Outcome, Study design) framework is often implemented. Adopted by the Cochrane group, it is widely used to define systematic review questions, develop search terms, and establish inclusion/exclusion criteria in quantitative studies (O'Connor, Gree, & Higgins, 2008). However, certain aspects of the framework, for example 'Intervention' was not appropriate for this review, therefore an adapted framework to best address the objectives of the review was constructed. The main inclusion criteria of the screening and selection tool (SST) are displayed below.

<i>Population:</i>	Aged 15-25 inclusive
<i>Phenomena of</i>	<ul style="list-style-type: none"><li>• Pornography use</li></ul>
<i>Interest:</i>	<ul style="list-style-type: none"><li>• Sexual health</li><li>• Sexual behaviour</li></ul>
<i>Outcome:</i>	A comparison between at least two of: pornography use; sexual behaviour; sexual health
<i>Publication type:</i>	Journal article/research paper
<i>Language:</i>	English only

Studies were excluded on the basis that

- Participant sample was aged below 15 or over 25
- If two of pornography use, sexual health, and sexual behaviour were not directly explored, or compared
- The type of publication included book chapter, editorial, commentary, dissertation theses, or secondary studies
- They were written in any other language than English

The reason for only including peer reviewed journal articles was so that they were all a high quality, unbiased, reliable source of information, which may not have happened if commentaries and editorials etc were included. When applying the inclusion/exclusion criteria, one study held a sample age range outside of the inclusion criteria (17-43 years). However, as the mean age sample was 19 (within the middle of the age range), and participants were in post-secondary (i.e. college) education, the decision was made to include the study in the review. Similarly, one study only gave the mean age of the participants (20.7 +/- 1.5 years). However, as done with the previous study, because the mean age fell within the inclusion criteria age range, and participants were college students, like the previous study, the decision was made to also include this study in the review.



*Figure 1:* Flowchart of the study selection process

#### *b) Quality assessment*

After applying the screening and selection tool, six papers remained. There was no variability in the included studies' research design – all were cross-sectional. Here, studies investigated relationships between variables that already existed in a defined population at a particular time (Khan, Dinnes, & Kleijnen, 2001). In order to move forward with this review, included papers were quality assessed. There are already established tools to assess the quality of research papers. One place to find these is the Critical Appraisal Skills Programme (CASP, 2013), however, for cross sectional studies they did not have a specific quality assessment tool. Therefore, in order to quality assess

included research papers, a search for existing tools needed to be conducted, otherwise a new tool needed developing. Three cross sectional assessment tools were found online. The first, STROBE (2007), involved a checklist of items to be included in reports of observational studies in epidemiology. The National Heart, Lung, and Blood institute (NHLBI: 2014) had a quality assessment tool for observational cohort and cross-sectional studies. However, Milton Keynes Primary Care Trust (2002) displayed ‘11 questions to help you make sense of descriptive/cross-sectional studies’. The latter tool, adapted from Guyatt, Sackett, and Cook (1993) Users’ guides to the medical literature, and set up similarly to the appraisal tools from CASP, was incorporated to assess the quality of the cross-sectional papers in this review. There were 11 questions to consider and for each of these questions there were further key points to consider when scoring the articles. However, the tool was adapted to include some of the key points as separate questions to allow each point to be carefully considered and scored. As a result, the total number of questions increased from 11 to 14. The questions covered areas such as sampling bias, measurement bias, credibility of findings, and other areas considered appropriate, such as how the results were presented and how valuable the research is. The full assessment tool used for the six cross-sectional papers that met the screening questions can be seen in Appendix D. For each question the following scoring guide was implemented:

Yes = 2 (Criteria fully met)

Partly = 1 (criteria partly met)

No = 0 (criteria not met)

Can’t tell = 0 (unclear/insufficient evidence)

The highest possible score was 28. The scores awarded for each article were converted into percentage quality scores. The higher the percentage, the better quality the article was deemed. A high number of unknowns represented less accurate reporting. As the number of included studies is relatively small (n=6), no quality score cut-off has been applied.

*c) Data extraction*

Data from the articles were extracted using a data extraction form detailed in Appendix E. The quality percentage and number of unknowns was also inputted onto the form. The form extracted the following information:

- General information (author(s), country of study)
- Study characteristics (study design, aims/objectives, data collection method, and standardisation, validity, and reliability of measures)
- Participant characteristics (number, age range, gender, ethnicity, profession, location of sample, and recruitment procedure)
- Study results (analysis used, results and significance, and conclusions)

## **Results**

### **Overview of Studies**

Table 1 presents a summary of the synthesised data for the six included studies, allowing for evaluation of how viewing pornography influences sexual health and sexual behaviour. It displays the characteristics of each article, taken from the quality assessment forms and data extractions form.

### **Methodological and study characteristics**

The studies reviewed provided a set of results from a range of countries. A divide in studies can be seen in terms of location conducted in – three studies were from Asia (two from China, and one from Saudi Arabia), two from Europe (The Netherlands and Croatia), and one from North America (Canada). The dates of the studies were mainly close together – three were conducted in 2013, one in 2012, and one in 2011 – however one study was conducted in 2004, giving a range of 9 years. Study design was uniform, with all studies employing a cross-sectional design. This was expected given the nature of the topic. The studies investigated relationships between variables that already existed in a defined population at a particular time (Khan et al., 2001).

Table 1: Characteristics and quality assessment scores of six included papers

Author(s), year & country	Study design and aims	Participant recruitment	Participant characteristics	Data collection method(s)	Measures used standardisation, validity & reliability	Findings	Strengths and weaknesses	Quality assessment score
Bacak & Stulhofer (2011)  Croatia	Cross-sectional  To examine the prevalence and correlates of masturbation among sexually active young women in Croatia.	Stratified random sampling identified 1,005 males and females in Croatia. Based on the 2001 census, the sample was stratified on county, size of settlement, age, and sex.	Initially 1,005 males and females were identified. 495 females were interviewed and a subsample was derived from this based on if they had ever had sexual intercourse, leaving 416 participants that were included in the analysis. Participants were aged 18 to 25 years old and lived in Croatia.	Questionnaire adapted from a previous national study of youth sexuality in 2005 (Stulhofer, Graham, Bozicevic, Kufrin, & Ajdukovic, 2009), collected information on sexual practices, sex-related attitudes, beliefs about sexuality, and HIV-related knowledge. First half of the questionnaire was carried out as a face-to-face interview, while the second half, focusing on sexual behaviors and the use of sexually explicit materials, was self-administered to	Due to lack of evidence, it is suggested the questionnaire is a subjective measurement with no test of validity or reliability of the measure.	Logistic regression analysis was used. Unadjusted and adjusted (controlling for other variables in the model) odds ratios (OR) are reported along with the corresponding 95% confidence intervals. Pornography use was positively associated with masturbation (AOR = 5.92, $p < .001$ ), while attendance of religious services was associated with lower odds of reporting masturbation (AOR = 0.42–0.41, $p < .05$ ).	<p><u>Strength</u> First study regarding association between pornography use and masturbation in females to be conducted in Southeastern Europe.</p> <p><u>Weaknesses</u> One quarter of contacted individuals refused to participate thus findings may not reflect the true population prevalence of female masturbation. Masturbatory frequency did not include a time frame.</p>	61%

Author(s), year & country	Study design and aims	Participant recruitment	Participant characteristics	Data collection method(s)	Measures used standardisation, validity & reliability	Findings	Strengths and weaknesses	Quality assessment score
				maximize confidentiality.				
Hald, Kuyper, Adam, & de Wit (2013)  The Netherlands	Cross-sectional  Investigate SEM consumption patterns of young people, and to assess the strength of the association between SEM consumption and a range of sexual behaviors.	Self-referred sample of adolescents and young adults in The Netherlands. Advertisements in various online and offline youth media and on electronic blackboards at schools.	4,600 – Male (1,402) and female (3,198)  Aged 15-25  Western 78.95% and non-western 21.05%	Comprehensive online sexuality study. Questionnaires assessing different aspects of young people's sexuality were completed at different points in time over a period of 6 months.	All measurements below were assessed for reliability – rating satisfactory (3), good (3), and very good (1) based on Cronbachs alpha. Measures: Sexual Sensation Seeking (Kalichman & Rompa, 1996); Sexual Self-Concept Inventory (O'Sullivan et al., 2006); Sexual assertiveness (Morokoff et al., 1997); Attitudes toward sexual coercion (Price & Byers, 1999); Nijmegen Parenting Scale (Gerrits, Dekovic, Groenendaal, Noom, 1996); and Social integration (de Graaf et al.,	Association between SEM consumption and a variety of sexual behaviors was found to be significant, accounting for between 0.3% and 4% of the total explained variance in investigated sexual behaviors. Hierarchical multiple regression analyses was used.	<u>Strength</u> Important, novel contribution to research on SEM consumption and association with sexual behaviors. Provides appropriate guidance to policy makers and program developers concerned with sexual education and sexual health promotion for young people.  <u>Weaknesses</u> Recruitment procedure does not allow the sample to be representative.	68%



Author(s), year & country	Study design and aims	Participant recruitment	Participant characteristics	Data collection method(s)	Measures used standardisation, validity & reliability	Findings	Strengths and weaknesses	Quality assessment score
					2005; L'Engle et al., 2006).			
Morrison, Harriman, Morrison, Bearden, & Ellis (2004)  Canada	Cross-sectional  Investigate variables – beyond those examined traditionally within a harms-based framework – that may be associated with exposure to SEM.	Convenience sample of university students enrolled in an introductory psychology course. Selection bias may compromise generalizability of the findings as it only included a specific population.	584 Male (202) and Female (382) Canadian post-secondary students. Aged between 17 and 43, however mean age was 19.	Questionnaire conducted in two parts Two thirds of participants completed the questionnaire during a scheduled mass testing session, which took place during class-time. One third completed the questionnaire as part of a smaller group session of 5 to 10 people.	Majority of measures had previous validity or reliability tests, or rating of psychometric properties. Measures: Exposure to SEM; Female Genital Image Scale (FGIS; Winter, 1989); Male Genital Image Scale (MGIS; Winter, 1989); Safer Sex Practices (Yzer, Fisher, Bakker, Siero, & Misovich, 1998); Self-Esteem Scale (SES, Rosenberg, 1965); Sexual Anxiety Inventory (SAI, Janda & O'Grady, 1980); Sexual Esteem Scale (SES, Snell & Papini, 1989); Sexual Experience	Virgin males reported lower levels of exposure to SEM on TV/DVD, but no difference on Internet than non-virgins. Level of SEM exposure was not found a function of male engagement in anal intercourse. Engagement in vaginal intercourse four weeks prior did not evidence higher levels of SEM exposure. Female virgins had lower SEM exposure than non-virgins. Engagement in anal intercourse evidenced significantly lower SEM	<u>Strengths</u> Research was conducted outside traditional harms-based frameworks regarding impact of pornography on sexual attitudes and behaviours  <u>Weaknesses</u> Participant's university students – unknown whether similar findings would be seen in those who are not post-secondary students. Used volunteers – research suggests differences to non-volunteers in antisocial non-conformity, self-esteem etc. thus applicability of findings to those	68%

Author(s), year & country	Study design and aims	Participant recruitment	Participant characteristics	Data collection method(s)	Measures used standardisation, validity & reliability	Findings	Strengths and weaknesses	Quality assessment score
					(Rothman, Kelly, Weinstein, O'Leary, 1999); Susceptibility of contracting sexually transmitted infection (Rothman et al., 1999; Yzer et al., 1998).	exposure. Engagement in vaginal intercourse four weeks prior evidenced higher SEM exposure. Recent engaging in anal intercourse evidenced higher SEM exposure – inferential statistics were not computed due to the small category size. Perceived importance of practicing safer sex did not correlate significantly with exposure to SEM.	who would not volunteer is unknown. No assurance (or measure implemented) to know if participants responses are accurate. As study is correlational, causal inferences cannot be drawn.	
Raheel, Mahmood, & BinSaeed (2012)  Kingdom of Saudi Arabia (KSA)	Cross-sectional  Assess the sexual practices of young educated men in KSA	Distributed randomly (although not specified how) to preparatory-year students in classrooms and the cafeteria	225 male participants aged 15-20 from the Kingdom of Saudi Arabia (KSA).  Participants were studying English, computers and	Structured, self-administered questionnaire. Questions regarding HIV and AIDS transmission.	No evidence of using valid, reliable measures, or any specificity on measures used.	About 70 (30%) reported premarital sexual activity at least once. With regard to the factors that may influence sexual behaviors, 137 (61%)	<u>Strengths</u> Raised concern young men engaging in sex may not be aware of health issues associated with unsafe sex.	57 %

Author(s), year & country	Study design and aims	Participant recruitment	Participant characteristics	Data collection method(s)	Measures used standardisation, validity & reliability	Findings	Strengths and weaknesses	Quality assessment score
			basic science subjects in the preparatory year – compulsory year of formal learning, a pre-requisite to admissions to universities in the Kingdom of Saudi Arabia.			reported watching pornographic movies.  Premarital sex was associated with exposure to pornographic movies (OR: 6.79).	<u>Weaknesses</u> Did not explore associations between unsafe sexual activity and preventative measures taken by the youth. Educated young male sample may not represent of those not attended education beyond high school level.	
Sun, Liu, Shi, Wang, Wang, & Chang (2013)  China	Cross-sectional  Assess sexual behavior and condom use among Chinese college students. Explore social-environmental and social-cognitive factors associated	Random sampling was conducted among colleges in nine Chinese provinces, representing seven main geographical areas. Around three colleges were selected in each province and cluster sampling was	19,123 male and female Chinese college students aged 20.7 years on average (+/- 1.5 year).	Self-administered questionnaire split into five sections. Section 1 investigated personal characteristics, section 2 assessed knowledge about HIV/AIDS using UNGASS indicators, section three assessed participants attitudes regarding high-risk sexual behaviors that can	To evaluate the reliability and validity of the questionnaire, two tests, separated by six weeks were conducted among 205 students. Results displayed good reliability of the questionnaire – Cronbach's alpha coefficients were higher than 0.7 for most sections of the questionnaire.	Pornography influenced females more negatively than males, despite males viewing more pornography. Increased exposure was associated with females engaging in more high-risk behaviors, having less knowledge of	<u>Strengths</u> Privacy conditions around the study may have minimized purposeful misreporting. Results may assist those working with college students in many countries and inform future studies of college student attitudes, self-efficacy, and sexual behaviour.	82%

Author(s), year & country	Study design and aims	Participant recruitment	Participant characteristics	Data collection method(s)	Measures used standardisation, validity & reliability	Findings	Strengths and weaknesses	Quality assessment score
	with risky sexual behaviors in Chinese college students.	then used to recruit students in each college.		lead to the HIV/AIDS, section four addressed sexual intercourse, section five assessed intention and self-efficacy of condom use.		HIV/AIDS, and using condoms less often. Whereas higher exposure of pornography in males was associated with positive attitudes to high-risk behaviour, and was associated with reduced nervousness of buying condoms – suggesting that pornography be associated with condom use, which is contradictory to other findings.	<u>Weaknesses</u> Self-report questionnaire may have resulted in participants intentionally underreported their engagement in high-risk behaviours.	
Wang, Wu, Zhao, Li, Zhao, Zhou, & Ji (2013)  China	Cross-sectional  Describe the HIV/AIDS-related knowledge, attitudes, and risk behavior	Quota-sampling procedure used to recruit a composite sample approximately proportionate to the overall	2254 unmarried male migrant workers in Shanghai. 77.2% were 15-24 years old.	A self-administered, anonymous questionnaire was used to collect information on knowledge, attitudes, and behavior associated	Reliability of HIV/AIDS knowledge subscale measured. Measurement of socio-demographics, sexual behaviour	Multivariate logistic regression analyses showed indicators of sexual risk behavior to include younger age at first sexual intercourse, poor	<u>Strengths</u> First study in China regarding sexual risk behavior and assessing likely associations with sexual risk behavior among unmarried male migrants.	68%

Author(s), year & country	Study design and aims	Participant recruitment	Participant characteristics	Data collection method(s)	Measures used standardisation, validity & reliability	Findings	Strengths and weaknesses	Quality assessment score
	of unmarried male migrants in Shanghai. Identify possible sexual risk behavior factors of participants.	distribution of the migrant population in 11 different occupational clusters accounting for approximately 93% of the migrants. Inclusion criteria for participants.		with increased risk of HIV/AIDS. The questionnaire covered three main areas. Section one assessed demographic characteristics of the migrant workers, peer influence, exposure to pornography, and acquaintance with someone who had HIV/AIDS and related diseases. Section two assessed knowledge of and attitudes towards HIV/AIDS. Section three assessed sexual activities and condom use.	and condom use were subjective.	perception of acquiring HIV/AIDS, frequent exposure to pornography, and having peers who engaged in sex with a non-regular sex partner.	<p>Provides insight into needed interventions to address sexual health risks in migrants.</p> <p><u>Weaknesses</u> Cross-sectional survey limits ability to draw causal inferences and means responses were measured retrospectively, thus recall bias may have occurred. Variables were self-reported, thus sexual risk behavior may be underreported, as it is a sensitive topic in China. Sampling was limited to one city, therefore, findings may not be representative for all unmarried male migrants in China.</p>	

Key: SEM = sexually explicit material

### ***Participants and recruitment***

Participant age ranged between 15 and 25 years old. Three studies gave the age range within this. One study gave the age range of 15-24 as 77.2% of the sample, with other participants being older than this (Wang et al., 2013). Two studies were included based on the mean age of the sample. One gave an age range of 17-43 years (Morrison, Harriman, Morrison, Bearden, & Ellis, 2004), however as the mean age of the post-secondary (i.e. college) student sample was 19 (within the middle of the age range), the decision was made to include the study in the review. Similarly, one study only gave the mean age of the participants (20.7 +/- 1.5 years), and as the mean age was within the age range, and with participants being college students, the decision was made to include this study in the review. Sample sizes ranged significantly. Raheel, Mahmood, & BinSaeed (2012) provided the smallest sample size of 225 pre-university students, with studies from Wang et al., (2013) and Hald, Kuyper, Adam, & de Wit (2013) having a much larger sample size (2,254 migrant workers and 4,600 students respectively). However, Sun et al., (2013) provided an extremely large sample size of 19,123 college students. The locations from where participants were drawn were mainly from educational settings, however one study used residential settings (Bacak & Stulhofer, 2011), another was conducted online, although it used students (Hald et al., 2013), and one was not clear where the participants were located (Wang et al., 2013).

### ***Study aims***

The included studies had relatively similar aims in regards to them encompassing inclusion criteria from the search and selection tool (SST). They became more varied when examined via these criteria, however they all included the assessment or investigation of at least one of pornography use, sexual behaviour, or sexual health.

Only two studies aimed to explicitly investigate two of the three variables. Only one study included the assessment of association between sexually explicit materials (pornography) and sexual behaviour (Hald et al., 2013). Again, only one study aimed to assess sexual behaviour and condom use (sexual health). However, Wang et al., (2013) did aim to investigate HIV/AIDS-related (sexual health) knowledge, attitudes and sexual risk behaviour factors. The other three studies, only explicitly stated one out of the three variables (pornography use, sexual health, sexual behaviour) in their aims, and included the association or prevalence of other ‘variables’ or ‘correlates’. Of these three studies, two included sexual behaviour as the main focus of their aim varied, and one involved sexually explicit material (pornography). Therefore, all but one study ( $n = 5$ ), aimed to explore sexual behaviour.

Another factor that was common amongst study aims was the use of sampling. Despite all meeting the inclusion criteria regarding age, not all studies in this review aimed to specifically investigate some of the above variables (i.e. pornography use, sexual health, sexual behaviour) in young people, however the majority did ( $n = 4$ ). The term young people in the review encompassed ‘young women’, ‘adolescents and young adults’, ‘young men’, and ‘college students’. Also in regards to population, three studies stated investigation into one gender only, whereas the other three, which did use both genders in their sample, did not specify. Only one study aimed to solely investigate young females (Bacak & Stulhofer, 2011).

### ***Measures of pornography use***

Studies measuring pornography use related to active consumption or exposure, referring to how often participants viewed pornography. The types of pornography viewed were only measured in one study (Hald et al., 2013). The measure of pornography for these studies ( $n = 4$ ) was developed by the authors, who created their own subscale within a questionnaire. The four studies explicitly stating measures for pornography included asking the sample how often they had viewed pornography in the past year, ranked as 1 = every day, 2 = few times weekly, 3 = few times monthly, 4 = once monthly or less, and 5 = did not use it at all (Bacak & Stulhofer 2011). For this study, the categories were collapsed into 0 = never in the past year, 1 = at least once in the past year due to small sample size. Similarly, Hald et al., (2013) assessed pornography consumption through participants providing the frequency of use, type consumed, and media used to access sexually explicit materials in past 12 months. Wang, et al., (2013) produced a slightly different subscale, whereby exposure was categorised into frequent, less frequent, and never – defined as more than three times every six months, less than three times every six months, and never, respectively. None of the measurements of pornography use were assessed for validity or reliability, however Sun et al., (2013) did test and re-test their questionnaire, which included questions regarding pornography use, and showed a good reliability score using Cronbach's alpha ( $<0.7$ ; Field, 2013).

### ***Measures of sexual health***

Measures of sexual health varied considerably and generally investigated attitudes and knowledge as opposed to physical state. Reliable measures used included: Safer Sex Practices (Yzer, Fisher, Bakker, Siero, & Misovich, 1998); susceptibility of contracting



sexually transmitted infection (Rothman et al., 1999; Yzer et al., 1998); and UNGASS indicators (UNAIDS, 2009). Studies did not share measures used. Sun et al., (2013) also devised subscales for their study regarding attitudes to high-risk sexual behaviours that can lead to HIV/AIDS; and intention and self-efficacy of condom use. Similarly, Wang et al., (2013) devised a HIV/AIDS knowledge subscale based on a National HIV Surveillance Survey. Despite some subscales having internal consistency, no assessment of validity was made on the measurements.

### ***Measures of sexual behaviour***

Overall, sexual behaviour was not well assessed in these studies, which could be due to difficulties in quantifying the behaviour. However, there were some reliable measurements to assess aspects of sexual behaviour in the studies included in this review. Similarly to those for sexual health, these measures varied greatly across studies, and included: Sexual sensation seeking (Kalichman & Rompa, 1996), Cronbach's alpha = 0.75; Sexual self-esteem (O'Sullivan et al., 2006), Cronbach's alpha = 0.84; Sexual assertiveness (Morokoff et al., 1997), Cronbach's alpha = 0.72 and 0.81 (two subscales); and Attitudes toward sexual coercion (Price & Byers, 1999), Cronbach's alpha = 0.84. Measurements without reliability stated included: Sexual Anxiety Inventory (Janda & O'Grady, 1980); Sexual Esteem Scale (Snell & Papini, 1989); and Sexual Experience (Rothman, Kelly, Weinstein, O'Leary, 1999). Again, as with measures of sexual health, these measures for sexual behaviour were also devised by authors of the included studies (Hald et al., 2013; Sun et al., 2013). In contrast to other studies, Bacak & Stulhofer (2011) assessed masturbation as a measurement of sexual behaviour. However, no assessment of validity was made on the measurements, despite some subscales having internal consistency.

### ***Quality of included studies***

There was some variability in the quality ratings of the included studies (range 57% – 82%, mean score = 67%). The main issue that affected the quality of most of the studies was that they neither justified their sample sizes, nor produced a power calculation to estimate how many participants were needed to produce a reliable estimate of the measure. Also, relating to participants, the sample was not always representative of the larger population, mainly due to many of the participant samples being recruited from higher education.

### ***Narrative data synthesis and key findings***

Study aims, participant characteristics, methodologies, and analyses varied across included studies, thus the reviewed data was not homogenous. It was therefore not appropriate to combine and synthesise the data into a meta-analysis, as it may substantially affect the outcome (Bland, 2006). A narrative data synthesis was therefore conducted, whereby key findings relating to the specified aims of this review are underlined.

#### ***– What types of pornography are young people viewing, what form of media are they viewing, and where are they gaining access to it?***

Only one study included in the review investigated what types of pornography young people are viewing. Hald et al., (2013) included ‘types of pornography used in the past 12 months’ in assessed participant characteristics. The included categories under this heading were: soft-core; hard-core, violent/forced; SM/bondage/fetish; other. Participant’s responses ( $n = 4,600$ ) were stratified by gender. This allowed gender differences in young people viewing pornography to be seen. The most frequently

viewed form of pornography was hard-core for both male and females, with a significant difference in viewing at 84.3% and 69.6% respectively. This displayed the highest difference in viewing between males and females. For soft-core pornography, females (44.4%) viewed significantly more than males (34.5%). The 'violent/force' category held no gender difference in viewing (8.1% each), and the SM/bondage/fetish, and other categories showed no significant difference.

In regards to where young people are gaining access to pornography, this was investigated by only three out of the six studies ( $n = 3$ ). Raheel et al., (2012) highlighted that 71% of their male sample accessed pornographic film via the Internet, and 24% on the television. In another study, Morrison, Harriman, Morrison, Bearden, & Ellis (2004) showed that male compared to female participants accessed more pornography, both via TV/DVD,  $t(304) = 27.65, p < .001, d = 3.17$ , and the Internet,  $t(219.4) = 18.10, p < .001, d = 2.44$ . Hald et al., (2013) also included 'types of outlets in the past 12 months' in assessed participant characteristics. Online, magazine/book, DVD/video, TV, and 'other' made up the categories for this characteristic. The study showed that pornography was viewed most frequently online (89.1% for males and 69.6% for females). Young males, compared to young females were significantly more likely to gain access to pornography online, through magazines, or DVD/video. Meaning that young females access pornography in different ways – participants' use of the TV to access pornography was significantly higher than males (42.4% and 31.1% respectively).

The review aim differentiates between the forms of media viewed, in respect to videos, still images, and stories, and how young people access pornography i.e. online websites,

magazine, DVD's, peer sent images/videos. However of the studies included in the review, none of them broke down the forms of pornography media, instead they classified it as one thing.

Overall, the studies suggest that males view pornography more than their female counterparts, with the most viewed type of pornography by far being 'hard-core'. However, it is interesting to see the gender difference in consumption of soft-core pornography – with females viewing significantly more than males. It has been identified across studies that young people are significantly more likely to access pornography via the Internet than any other way. Again, a gender difference has been reported here, with males being significantly more likely than females to access pornography online. One limitation with these findings however, is that none of the studies reporting pornography use used validated, reliable measures – they were subjective measurements devised mainly by the authors.

– *What sexual health issues have young people experienced?*

No studies included in the review assessed what sexual health issues young people might encounter. Instead, the topic of sexual health in these studies mainly focused on (and knowledge of) contracting HIV/AIDS, and some considered condom use or safe sex practices. For example, Morrison et al., (2004) assessed likelihood of contracting STI's over the next two years (male  $m = 4.8$ ,  $SD = 2.3$ , female  $m = 4.9$ ,  $SD = 2.4$ ) based on perceptions of susceptibility, number of different sexual partners, and frequency of condom use. In regards to condom use, this study also suggested that virgins (both male and female) compared to non-virgins placed higher importance on practicing safer sex,  $t(572) = 4.66, p < .001, d = .40$ .

***– Is there a link between young people’s pornography usage and their sexual health?***

Only two studies investigated the link between young people’s pornography use and their sexual health. Sun et al., (2013) results suggest a mixed impact based on gender. Increased pornography exposure in females was associated with engaging in more high-risk sexual behaviours, such as using condoms less often, and having less knowledge of HIV/AIDS. Whereas higher exposure of pornography in males promoted positive attitudes to high-risk sexual behaviours, and reduced nervousness related to buying condoms. On the other hand, Morrison et al., (2004) reported pornography use did not correlate significantly with perceived importance of practicing safer sex.

***– What types of sexual behaviour have young people engaged in?***

Of the studies included in the review, none explicitly reported the types of sexual behaviour young people were engaging in, other than Bacak & Stulhofer (2011) who did investigate masturbation among sexually active young women in Croatia – reporting that 60% of the sample masturbated. Categories of sex, which included ‘Adventurous Sex’, ‘Partner Experience’, and ‘Transactional Sex’ were investigated in relation to association with pornography consumption in one study (Hald et al., 2013). However, the experience of specific sexual behaviours in young people was not reported separately to the association with pornography use. In terms of specific sexual acts, Morrison et al., (2004) did suggest that male compared to female participants had vaginal and/or anal intercourse with more partners,  $t(244.02) = 2.81, p < .005, d = .36$ .

***– Is there a link between young people’s pornography usage and their sexual behaviour?***

Five of the six studies assessed the relationship between pornography use and sexual

behaviour in young people. All of these reported results supported the influence of pornography use on sexual behaviour, however two studies also produced results indicating that influence was dependent on gender. Various methods of data analysis were used, however three of the studies assessing associations between pornography and sexual behaviour used logistic regression analyses. Raheel et al., (2012) found having premarital sex associated with exposure to pornography (OR: 6.79). Similarly, Wang et al., (2013) reported indicators of sexual risk behaviour included frequent exposure to pornography (OR: 0.33, 95% CI: 0.11– 0.43 for never; OR: 0.69, 95% CI: 0.60– 1.81 for less frequently), as well as age at first sexual intercourse (OR: 0.67, 95% CI: 0.31– 0.91 for older age at first sexual intercourse). However, these results display low odds ratios, with variable confidence intervals. Bacak & Stulhofer (2011) reported both unadjusted and adjusted – controlling for other variables in the model – odds ratios (OR) with corresponding 95% confidence intervals. Results suggested pornography use was positively associated with masturbation (AOR = 5.92,  $p < .001$ ).

One of the studies used hierarchical multiple regression analyses. Here the influence between pornography consumption and various sexual behaviours was found to be significant, however this only accounted for 0.3% to 4% of the variance in the sexual behaviours examined (Hald et al., 2013). A full regression model, testing the multivariate associations between covariates and each of the three sexual behaviour categories ‘Adventurous Sex’, ‘Partner Experience’, and ‘Transactional Sex’, for both males and females was highly significant. Pornography use was significantly associated with ‘Adventurous Sex’ and ‘Transactional Sex’ in both young males and females. A significant association between pornography use and ‘Partner Experience’ was also found for females, however this association was not significant in male participants.

Overall, increased pornography use was significantly associated with increases in sexual behaviours investigated in the study.

The final study investigating the influence of pornography use on sexual behaviour made reference to more explicit types of behaviour and pornography. In particular, comparisons between virgin and non-virgin participants' use of pornography were made, as were for those who had engaged in anal intercourse and vaginal intercourse. Similar to other studies, this one also split the results to allow for male and female comparisons. Morrison et al., (2004) found that virgin males had used TV/DVD pornography less than non-virgins, however there was no difference between amount of sexual experience for viewing Internet pornography. Virgin females reported less overall pornography use than non-virgins. Pornography use was not found to be a function of male engagement in anal intercourse, however female engagement in anal intercourse associated with significantly lower pornography use. Conversely, recent engagement in anal intercourse suggested higher pornography use, or vice versa, however inferential statistics were not computed due to the small category size. Similar to that of anal intercourse, engagement in vaginal intercourse four weeks prior to the study did not correspond with higher levels pornography use in males. However, female participants who engaged in vaginal intercourse four weeks prior reported higher levels of pornography use. Overall, significant differences in pornography use were found as a function of sexual status – i.e. virgin or non-virgin – and current sexual activity in females.

## **Discussion**

### **Main findings of the review**

The aim of this review was to explore the impact pornography use might have on sexual health and sexual behaviour in young people, aged 15–25 years. Through using a comprehensive search strategy, and a search and selection tool (SST), which incorporated inclusion/exclusion criteria, six studies were identified for this review. All studies had a cross-sectional design and produced a quality assessment score of between 57% and 82%.

For the six studies that met the inclusion criteria, a narrative data synthesis was produced. The review findings indicate that the types of pornography used are not primarily assessed in studies. However one study, with a relatively large sample size ( $n = 4,600$ ) identified hard-core pornography as being the most viewed type by far, with soft-core viewing, the second most common, dropping to nearly half the amount that hard-core pornography is viewed (Hald et al., 2013). Three studies highlighted that pornography use in young people was seen more frequently in males than females, and material was predominantly accessed online. No studies highlighted the sexual health issues young people were encountering, however research was conducted regarding the attitudes young people held around safe sex and HIV/AIDS. Findings on the association between this and pornography consumption were inconsistent. One study investigating sexual health attitudes displayed results suggesting pornography held both a positive and negative influence, dependent on gender. Similarly, two studies also produced results indicating that influence was dependent on gender. In relation to all three variables, Bacak & Stulhofer (2011) found that viewing pornography was positively associated with masturbation in young females. Research suggested



masturbation has sexual health-related benefits (Abramson & Pinkerton, 2002; Coleman, 2003), including an educational purpose (Heiman & LoPiccolo, 1988; Wincze & Carey, 2001).

Measurement of pornography use primarily focused on consumption, rather than content. Only one study included a description of the types of pornography young males and females watched, however, these were not specifically compared with young people's sexual health or sexual behaviour. Investigating the impact of pornography use as a whole may be missing important aspects relating to the content of the pornography and specific sexual interests – for example, hard-core pornography use may have different effects on sexual health and behaviour than viewing soft-core pornography. Similarly, studies included in the review investigated how young people accessed pornography, but again, did not consider if this had any association with other variables. The type of media viewed, such as video or image, was not contemplated either. Frequency of consumption was examined in all of the studies included in the review, thus suggesting it is the quantity of pornography viewed, as opposed to the type of pornography viewed that may influence sexual health and sexual behaviour. A limitation to this strategy however, is that not assessing and categorising pornography type may influence findings and their interpretation and not allow for studies to be compared in terms of population norms. For example, regarding sexual health, many studies related to HIV/AIDS knowledge, and some condom use. Sexual health was not clearly categorised, and was poorly defined in the studies reviewed. As such, results may have been biased and would not have been comparable as they address very different issues. It would seem useful to understand what types of pornography young people are viewing and how they are accessing this material for the purpose of sexual

education, policies, and to understand how it may relate to specific sexual health issues and sexual behaviours.

The measures used throughout the included studies were not explicitly assessing sexual health or behaviour, but were abstract assessments of the variables. For example, sexual self-esteem was used as a measure to incorporate sexual behaviour, similarly, attitudes and knowledge of HIV/AIDS was used as a measure of sexual health. Some specific measures included the Sexual Anxiety Inventory (SAI, Janda & O'Grady, 1980), Sexual Esteem Scale (SES, Snell & Papini, 1989), Sexual Self-Concept Inventory (O'Sullivan et al., 2006), and Sexual Assertiveness (Morokoff et al., 1997). Although most measures reported good reliability (Cronbach's  $\alpha < 0.7$ ), not all measures had reported a reliability assessment, and only one author had validated their questionnaire. This raises questions as to how reliable other studies' questionnaires were in measuring the level of pornography use, sexual behaviour, and sexual health in young people. In turn, it also hinders adequate comparisons between participant scores and population norms. For example, it masks if participant samples are a representative of the population in terms of measured variables. It is unknown to the extent participants viewed pornography compared to population norms, as such this sample could be excessively consuming pornography and therefore creating skewed data.

All studies used self-administered questionnaires, with one also using a face-to-face interview for half the questionnaire. The self-administered form of data collection was favoured due to the suggestion it maximises confidentiality (Bacak & Stulhofer, 2011). Therefore, using a questionnaire seems the most appropriate form of collecting data given the sensitive nature of the topic. However, participants' responses may have been

prone to social desirability. None of the studies included a measure of participants' honesty in completing the questionnaire, which would have considered demand characteristics. It was highlighted in one study (Morrison et al., 2004) that assurances could not be provided that participant's responses were accurate. However, there is a need for studies to include participant anonymity in order to reduce potential socially desirable responses.

In summary, the results generally show a pattern of significant positive association between sexual behaviour and pornography consumption, with males generally viewing more than females – the latter being an expected finding. However, associations between sexual health attitudes and pornography use are limited and vary. With all studies taking on a cross-sectional design, this limits the ability to draw causal inferences from findings. Future research will need to consider methodological limitations found in this review – mainly the measures used to assess pornography use, sexual behaviour, and sexual health, and comparing these to population norms. This will better allow for associations to be verified. In addition, research should focus on actual sexual health issues associated with pornography use, as opposed to attitudes.

### **Strengths and weaknesses of review**

The strengths of this review include the quality of the comprehensive search strategy used, the well-established literature sources used, widely used databases, as well as contact with experts in the field. An appropriate inclusion/exclusion criteria was devised and used throughout, as well as a tailored quality assessment tool used for every research paper, identifying issues such as unrepresentative samples and sampling bias.

Possible publication bias due to only using published studies presented in journal articles or research papers and not including book chapters, which provide useful information in this field, is a weakness in this review. However, opposite to the suggestion that published studies tend to report significant findings, this review has identified a mixture of significant and non-significant results within the studies. The mixed results may be due to research in this field being in its early stages, which can be seen from the lack of validated measures throughout the studies. Unfortunately, although experts in the field were contacted in an attempt to obtain unpublished or relevant work, those that provided sources were not included due to factors identified in the inclusion/exclusion criteria, and one expert only provided an abstract of the work due to it being in progress. Inclusion of unpublished papers, such as the latter one described if it had been available, may have provided the review with potentially meaningful results. Similarly, studies that were initially in the 'include' category but could not be obtained, or were not in English, could have impacted on the results of the review. As the findings may have been different, it should be questioned whether the conclusion of this review is representative of all studies in this field. Finally, with regards to the quality assessment of studies, it would have been beneficial to have a second rater also complete this, in order to ensure ratings provided for each criterion were consistent. This would have increased the reliability of the assessment.

### **Implications for practice and future direction**

The measures of pornography use, sexual health, and sexual behaviour in the included studies were subjective, not validated, and often not assessed for reliability. Thus, there is a need for either validity/reliability assessments of the existing measures, or validated, reliable measures of these variables need to be constructed; assuming these

relevant features can be measured. This will then enable participants' scores to be reviewed against population norms, indicating whether participants' behaviour sit within the population norms. Similar to assessing participant population with population norms, most studies ( $n = 4$ ) included in the review had samples that were not generaliseable to the whole, or a defined, population.

It may be useful for further research to examine the influence of pornography on sexual health and behaviour in defined aged groups – for example, adolescents and young adults. The current review encompasses young people, referring to ages 15-25, based on the use of pornography and sexual behaviours amongst this age range. However, in splitting this age range, differences in the experience and influence of variables may be seen – as has been reported for gender – with different types of sexual development being seen in different age brackets (Hackett, 2010). Further work may also wish to include research into the actual sexual behaviours and health issues that young people encounter, as opposed to only attitudes. Investigating specifics would be beneficial in determining if pornography use is linked to certain physical health, such as STIs and anal injuries from performing uneducated anal intercourse. This would in turn allow for sexual education that regarded behaviour and health issues relevant to young people.

## **Conclusion**

The impact of pornography on sexual health and behaviour has been evidenced in the findings of the studies included in the review. There were inconsistent findings between sexual health attitudes and pornography consumption – one study suggested both positive and negative influences dependent on gender, whereas another found no significant correlation between the variables. All studies that looked at the influence of pornography use on sexual behaviour supported a positive association between the two variables, in that the more young people were accessing pornography, the more sexually active they were. Although, similar to findings regarding sexual health, two studies also produced results indicating that influence was dependent on gender. Given the findings and methodological limitations of the included studies, this review highlights the importance of continuing to explore the impact of pornography use on young people's sexual behaviour, but particularly sexual health. As this is a relatively new field of research, including research that was unpublished, or in a language that was not English, may have produced different findings. It is important to understand the full extent of which pornography has been found to associate with these factors in order to manage the sexual health and behaviours of young people, and educate them accordingly.

## **Chapter 3**

### **Critique of the Multiphasic Sex Inventory (MSI)**

## **Introduction**

Researchers over the years have adopted various approaches to trying to measure the full range of sexual behaviours exhibited by people. Most have focussed on pathological aspects of sexual behaviour, with the first measure of sexual deviance being The Sex Inventory (Thorne, 1966), followed by The Clark Sexual History Questionnaire (1977). The latter was noted to need considerable development before being used clinically (Paitich, Langevin, Freeman, Mann, & Handy, 1977). Due to the limited measures of sexual deviance at the time, Nichols and Molinder (1984) devised the Multiphasic Sex Inventory (MSI) to measure sexual deviance and other sexual characteristics of sex offenders. The tool was first used in conjunction with the Minnesota Multiphasic Personality Inventory (MMPI) in 1977, which itself had scales of sexual deviance. However, it was further developed into a standalone tool in 1983.

The MSI is now one of the most widely used psychometric assessments of psychosexual characteristics in sexual offenders, namely child molesters, rapists, and exhibitionists. Although the MSI was initially used with the MMPI, it elicits information independent of personality and psychopathology tests, and has in fact been found to produce data supportive of physiological indicators of arousal (Bernard, Fuller, Robbins, & Shaw, 1989). The MSI echoes the authors' conceptual framework of sex offenders' sexual interests, motivations, and behaviours (Craig & Beech, 2008). It was thus originally designed to measure the sexual characteristics of adult male sex offenders in order to evaluate sexual deviance. However, it has also been found useful in determining treatment progress and admittance or denial of offending behaviour (Clark & Grier, 1995). The MSI is used in various settings and countries in the



assessment of sex offenders (Beech, Fisher & Beckett, 1999; Dowling, Smith, Proeve, & Lee, 2000; Miner, Marques, Day, & Moeller, 1990).

Although psychometric assessments are used in assessing psychological constructs in sex offenders, they are often not empirically tested for their risk assessment and psychometric properties (Craig & Beech, 2008). Therefore, the MSI has been chosen for this critique from a scientific viewpoint, as it is one of the most widely used psychometric measures of psychosexual characteristics. It was developed for use with adults, but is also used widely with young people, as there is currently no assessment tool for sexual interests and deviance in young people. It therefore needs to be understood whether the validity of the scale stands when used in a different population, as sexual activities and norms change over developmental stages.

## **Overview**

The MSI is a 300-item self-report questionnaire designed to assess a wide range of psychosexual characteristics of sex offenders. Clients are asked to answer each item openly and honestly. There are 20 items that may be left blank, as clients are only to answer these questions if they have engaged in that particular behaviour. There is a separate question and answer sheet, whereby clients mark 'T' for True or 'F' for False for each question on the answer sheet. A taped version of the MSI has been created for those with difficulties in reading. Administration of the MSI is suggested to be simple and straightforward, and takes approximately 45 minutes to complete (Nichols & Molinder, 1984).

Although the MSI is designed for adult male sex offenders, the manual states that the test can be administered to clients aged 18 years and older, and for those under 18, parental or guardian consent should be sought. Templates are provided for hand scoring the MSI, which is reported to take 10 minutes to complete.

The MSI is comprised of 20 scales and a sexual history questionnaire. There are six validity scales, three sexual deviance scales, five atypical sexual behaviour scales, four sexual dysfunction scales, a sex knowledge and beliefs scale, and a treatment attitudes scale. These six types of scales are all used to evaluate sex offender treatment progress and openness. However, one of the validity scales, Parallel Items, has been removed from the MSI due to copyright issues. The remaining five validity scales and treatment attitude scale can be reviewed to create three validity scales and three accountability scales, as done by Craig and Beech (2008).

### ***Sexual Deviance Scales***

This includes the Child Molest Scale, the Rape Scale, and the Exhibitionism Scale, all of which measure the style, magnitude, and duration of sexually deviant behaviour. The scales are designed to identify the progress a sex offender makes cognitively and behaviourally leading up to a sex offence. The authors of the instrument postulate that cognitions start with a thought or fantasy of committing the sexual offence, and continue through self-justification, towards the planning and subsequent acting out of the offence.

### ***Atypical Sexual Outlet Scales***

This includes the Fetish Scale, Obscene Call Scale, Voyeurism Scale, Bondage and Discipline Scale, and Sado-Masochism Scale, all of which measure the individual differences of a client's sexuality and offending behaviour.

### ***Sexual Dysfunction Scales***

This includes the Sexual Inadequacy Scale, Premature Ejaculation Scale, Physical Disabilities Scale, and Impotence Scale. Research has suggested that elevation on these scales does not occur for sex offenders (Nichols & Molinder, 1984).

### ***Sex Knowledge and Beliefs Scale***

This scale primarily measures the client's knowledge of sexual anatomy and physiology, but not reproductive systems.

### ***Validity Scales***

This includes the Social Sexual Desirability Scale that identifies socially desirable responding through measuring 'normal' sex drive and interests; the Sex Obsessions Scale that measures the client's obsession with sex and proneness to exaggerate issues; and the Lie Scales that measure denial and minimisation.

### ***Accountability Scales***

This includes the Cognitive Distortion and Immaturity Scale that measures how much the client takes a victim stance to their offending behaviour and the level of responsibility accepted; the Justification Scale that examines the types of justification used to explain the client's offending behaviour, and the Treatment Attitudes Scales

that measures client's attitudes to treatment for their offending behaviour.

### ***Development of the MSI***

A pilot study conducted by Nichols & Molinder (1977) sparked the development of the MSI scales. The MSI began as a 200-item questionnaire (pilot study, 1977), and progressed to 222-items (research study, 1983), before becoming the current 300-item questionnaire (Research Edition, 1984). The MSI comprises of six scales, and 20 subtests. Prior research (McCary, 1972; Kaplan, 1974; Zilbergeld, 1980) supported the development of the Sexual Knowledge and Beliefs scale and Sexual Dysfunction scales. The sexual history questionnaire was developed to mirror a sexual history interview (Nichols & Molinder, 1984).

The MSI takes on average 45 minutes to complete and a taped version is accessible for those with reading difficulties (Nichols & Molinder, 1984).

### **Characteristics of the psychometric measure**

#### ***Level of Measurement***

The level of measurement used in the MSI is nominal level data (i.e. categorical data as each answer is in one of two categories) as participants are asked to mark each item as 'True' or 'False'.

#### ***Self-Report***

The MSI is a self-report questionnaire. Gaining information directly from participants is suggested to improve accuracy of results (Kinsey, 1953). However, it is also susceptible to socially desirable responding, with participants not answering honestly,

depending on contextual demand characteristics. Nevertheless, it is assumed that being direct in questioning will elicit more accurate results from the participants about their behaviour. In particular, Kinsey reported that a direct question opposed to indirect methods is more likely to extract accurate information about a person's sex life. Due to this, around 94% of the MSI items are direct in their approach.

Similarly in regards to concerns with honesty and openness of responding in self-report measures, the 1977 MSI pilot (Nichols & Molinder, 1977) noted that sex offenders tended to provide honest responses. Craig, Thornton, Beech, and Brown (2007) have also reported that convicted offenders often provide accurate self-report information due to already being convicted and incarcerated. As the MSI is used with convicted sex offenders, it is likely that participant's responses are accurate, however, should the tool be used with clients who are neither incarcerated nor convicted then accuracy in responses should be queried.

Within self-report measures, participants may be subject to response bias, for example participants may attempt to produce a positive or negative impression of themselves, thus creating a 'response set'. Participants may 'fake good' whereby they answer questions in a socially desirable way, or they may 'fake bad'. To account for response bias, the authors included several validity scales within the measure to pick up on reporting biases. Furthermore, the authors have designed the layout of the question and answer sheets into columns, whereby the items are set out randomly in row blocks. This is therefore not likely to set up cues or response set patterns. However, one way that could further address socially desirable responses is by implementing a Likert scale for

responses as opposed to dichotomous 'True' or 'False' options, as this has been shown to minimise socially desirable responses (Sorenson & Taylor, 2005).

### **Psychometric Properties of the MSI**

A psychometric measure is suggested a good test if it satisfies particular criteria. It should be reliable, valid, discriminating, have at least an interval scale, and have appropriate norms (Kline, 1986). These criteria will be reviewed in relation to the MSI.

### **Reliability**

#### ***Internal Reliability***

Internal reliability is where a test is self-consistent, which means that all of the items are measuring the same thing. A reliability analysis enables the properties of a scale and its items to be studied, in particular reviewing the relationships between individual items. Cronbach's alpha can be used as a model of reliability, as it is a model of internal consistency based on the average inter-item correlation.

The MSI has not run an analysis of internal consistency on most of the scales as the authors stated they were not equivalent in item difficulty, therefore were not subject to the usual methods of internal consistency analysis. However, three scales were examined for internal reliability – those were Social Sexual Desirability, Sex Obsessions, and Sexual Knowledge and Beliefs. The MSI calculated Kuder-Richardson correlations, which displayed moderate to relatively high internal item structure for the three scales: Social Sexual Desirability ( $r_u = .71$ ), Sex Obsessions ( $r_u = .65$ ), and Sexual Knowledge and Beliefs ( $r_u = .40$ ). The Kuder-Richardson test is used for an internal

consistency analysis on measurements with dichotomous options. It is suggested to be equivalent to the split-half model.

There have been limited studies that have tested for internal reliability of the MSI with different samples. Kalichman, Henderson, Shealy, and Dwyer (1992) completed the first psychometric evaluation for the MSI, which included an internal consistency analysis. A sample of convicted sex offenders, specifically rapists, was used and alpha coefficients were produced. Results ranged from 0.5 to 0.9 and suggested moderate to high reliability for the scales. In particular, the Child Molest (0.9), Rape (0.87), Social Sexual Desirability (0.87), Sex Obsessions (0.86), Bondage (0.84), and Justification (0.82) scales produced the highest levels of internal consistency. Whereas, the Sexual Knowledge and Beliefs (0.62), Sexual Inadequacy (0.53), Cognitive Distortions and Immaturity (0.53), and Exhibitionism (0.5) scales were the most diverse in content.

It is interesting that the scales that produce the lower level internal consistency are those that have been found to have construct overlap with the MMPI – in particular the Sex Obsessions and Cognitive Distortions and Immaturity scales (Kalichman, et al., 1992). However, the MMPI only accounts for 30% of variance in the MSI, and is therefore suggested to provide a considerable amount of information independent of the MMPI.

### ***Test-Retest Reliability***

Test-retest reliability examines how replicable and consistent over time results from a measure are with the same subjects. Issues with testing may arise if the time frame is too short, as results can be influenced by memory of the test (i.e. practice effects). Nichols & Molinder (1984) retested 32 subjects (who were all sex offenders, although

were all categorised as ‘child molesters’) on average with 21 days between tests. Result highlighted relative reliability over time, with a total test-retest correlation of 0.89, and no one scale being under 0.58. In particular, the coefficients of stability for the MSI scales included Pearson’s ‘r’ values for the Exhibitionism (0.92), Child Molest (0.91), Rape (0.91), Lie (0.89), Atypical Sexual Outlet (0.83), Sexual Dysfunction (0.80), Sex Obsessions (0.70), Social Sexual Desirability (0.64), and Sex Knowledge and Beliefs (0.58) scales. A minimum level of 0.7 should be achieved for test-retest reliability, and although this was achieved as an overall for the MSI, it was not achieved on a couple of scales (Sex Knowledge and Beliefs and Social Sexual Desirability). The lower reliability of the Sex Knowledge and Beliefs scale ( $r = .58$ ) is consistent with the internal consistency correlation mentioned previously ( $r_u = .40$ ) and is suggestive of a scale that is not very reliable. However, for the most part, the MSI appears to be a reliable test that is consistently measuring each aspect that is being assessed.

Simkins, Ward, Bowman, & Rinck (1989) completed a test-retest analysis by administering the MSI to 122 clients prior to treatment commencing, after three months, six months, and finally nine months. No significant changes were found in the MSI scales found during this nine-month period. Overall test-retest correlations on the initial administration and three-month retest ranged from 0.42 to 0.84, with an average of 0.71, which is good.



## **Validity**

### ***Face Validity***

Face validity considers whether a measure appears to be testing what it is supposed to be testing. It relates to whether items are worded clearly and participants can recognise what they are being asked. However, a test can have good face validity and not actually be a valid measurement. Similarly, a test can lack face validity but still have general validity and measure what it claims to. The latter is beneficial as it reduces demand characteristics and response bias.

To enhance the level of face validity, the authors ensured items were direct to avoid confusion. However, to aid face validity but manage potential demand characteristics, scale items are set out randomly in row blocks to reduce response set patterns and avoid socially desirable answers, as items were not ordered in their scales. Conversely, Kalichman et al., (1992) suggested a possibility of response bias in the MSI as face validity allows for denial and faking of sexual deviance. Therefore it was suggested that scale scores are interpreted with a consideration to respondent motivation.

### ***Concurrent Validity***

Concurrent validity assesses how much a measure correlates with other tests purporting to measure the same construct. Although new tests can be validated against an established measure, this is only useful if the original test is actually valid (Kline, 1986). The MSI has undergone a concurrent ‘type’ validation during the 1977 pilot study through correlating sex offenders MSI scores on the child molest scale with their treatment progress. However, as there are a limited number of psychometrics that

measure sexual deviance and psychosexual characteristics, there is no research to demonstrate that the MSI has concurrent validity.

In regards to the pilot study, validity coefficients for the Child Molest scale (0.61) highlighted that sex offenders were more open about their sexual offending following treatment. Similarly, Wing (1983) found a slight positive correlation between scores on the Child Molest scale (0.21) and treatment progress, and a high positive correlation between scores on the Rape scale (0.74) and treatment progress.

### ***Predictive Validity***

Predictive validity determines if a test accurately predicts future behaviour. As previous behaviour is one of the best predictions of future behaviour (Monahan, 1981), the MSI could enable predictions of future engagement in sexual behaviour and sexual offending to be made, as the tool reviews past behaviour. The MSI has validity scales, however these do not detect lying, only suspected lying, which means results cannot be interpreted (Seto, 2003). Therefore, if participants are not honest in their responses, incorrect predictions could be made. Although the MSI reviews past behaviour, the authors have not stated that the tool was developed as a predictive measure.

Although the MSI may not be predictive of future sexual behaviour, it has been suggested to predict engagement in treatment and progression (success or failure) with 70.9% accuracy (Simkins, Ward, Bowman, & Rinck, 1989). The MSI was able to predict 30% to 47% of treatment variance, with the Cognitive Distortion and Immaturity, Lie, and Sex Knowledge and Beliefs scales primarily predicting treatment progress and outcome (Simkins, Ward, Bowman, & Rinck, 1989).

The MSI is used to identify treatment need and assess cognitive changes in sex offender treatment programmes. However, there is limited literature that examines the risk assessment properties of the MSI in predicting sexual recidivism (Craig & Beech, 2008). Craig, Browne, Beech, & Stringer (2006) administered the MSI to 119 sex offenders, and followed up after an average of 106 months, so that recidivists could be compared to non-recidivists. Recidivists were found to obtain significantly higher scores on the Cognitive Distortions and Immaturity, Treatment Attitudes, Sexual Social Desirability, and Rape scales compared to non-recidivists. Therefore some of the scales of the MSI could be suggestive of having the ability to predict sexual recidivism.

### ***Content Validity***

Content validity assesses whether a test measures all aspects of the subject under investigation. If content validity is poor, the tool will not be giving a full depiction of the subject being assessed. For example, the MSI needs to include all possible aspects relating to sexual deviance so an accurate assessment of sexual deviancy can be made.

The authors intended to account for content validity by having judges' ratings on all of the items of the MSI. All judges were experts in the field of sexual deviance, and the 11 of them categorised all of the MSI items into 14 categories. 13 of these related to the MSI scales, and one was "no category" for items that could not be sorted into any of the other 13 categories.

However, as the authors' stated, sexual deviance is "neither a clinical entity or a legal concept" (pp. 1), therefore Nichols and Molinder (1984) had to provide a definition that

they would be working from. As there is no one definition, which does not alter with time, the MSI's content validity is questionable as it may not be including all possible aspects relating to sexual deviance.

### ***Construct Validity***

Construct validity overlaps with other aspects of validity, and assesses the extent to which a test works as a construct, measuring what it is intended to measure. It is concerned with whether test score interpretations are consistent with the theoretical terms (Cronbach & Meehl, 1955). To test for construct validity it must be demonstrated that the phenomenon being measured actually exists. Therefore the construct validity of the MSI is dependent on a model or theory of sexual deviance. However, the authors have stated in their manual that "there is no theory of sexual deviation" (pp. 2). Therefore the potential of gaining construct validity is questionable on this basis.

The more evidence of construct validity, the better, but there is not a single method for assessing the construct validity of a test. Different methods have to be combined to uncover the overall construct validity of a test. There are convergent and divergent validity results of the MSI, which together represent the construct validity of the MSI. Kalichman et al., (1992) explored the relationship between MSI scales and sex offender characteristics. The study found construct validity for the MSI through: a negative relationship between victim ages and Child Molest scores; positive correlations between the Sex Obsessions and Sexual Dysfunctions scales, and suicide attempts; a negative correlation between the Justifications scale and suicide attempts; a negative correlation between IQ and the Exhibitionism scale; a positive correlation between IQ and the Sexual dysfunction and Cognitive Distortion scales; a negative correlation

between self-esteem and the Child Molest scale; a positive relationship between trait anger and the Rape scale; a positive relationship with trait anxiety and the Exhibitionism scale; and a negative correlation between socially desirable response sets and the Rape, Sex Obsessions, and Cognitive Distortions and Immaturity scales. Many of these correlations between the MSI and other psychometrics echo what is expected from theoretical and clinical descriptions of sexual offenders.

### **Normative Samples**

Normative samples provide a score for a clinical population. This allows the scores for the sample under investigation to be compared against a population norm. This provides an understanding of how expected a participant's behaviour is. Without this comparison sample, investigated sample scores become less meaningful.

The original authors of the MSI gathered data from 322 participants. This included 140 child molesters (92 community based and 48 from a state hospital), 30 rapists, and 20 exhibitionists. Some of the participants were also reviewed following the end of treatment. This included 54 child molesters and 22 rapists. Producing normative data on treated and untreated paedophiles. A control sample of 56 non-clinical participants completed the study, all of who had a normative MMPI profile. The norms for the MSI scales were obtained from this sample. The authors, particularly when testing the validity of the tool, often used a college control group, as well as the sex offender groups. It should be considered how well a college group represent the normal population.

For a psychometric assessment to be of use, there needs to be a standardised population that provides normative data for participants to be compared to (Craig & Beech, 2008). The MSI normative samples comprised American participants, who were primarily Caucasian. This has highlighted some issues when using the MSI in different countries, despite the tool being widely used (Beech, Fisher & Beckett, 1999; Miner *et al.*, 1990). Dowling *et al.*, (2000) conducted a comparison of American and Australian sex offender samples using the MSI. It found that, although there were similarities in the profiles produced, there were consistently higher levels in the paraphilia, dysfunction, and denial scales. As such, it was highlighted that clinicians should be cautious when applying the MSI normative data to Australian sex offenders, as well as when interpreting response profiles due to there being considerable variation in the normative data. It was suggested this caution should be applied until a larger Australian normative sample was obtained.

### **Conclusion**

The MSI assesses sexual deviance and psychosexual characteristics of sexual offenders and is widely used across settings and countries (Beech, Fisher & Beckett, 1999). It is used within prisons, hospitals, and community settings, and in particular there is a heavy reliance on it for Sex Offender Treatment Programmes. This is largely due to the Cognitive Distortion and Immaturity, Lie, and Sex Knowledge and Beliefs scales predicting treatment progress and outcome (Simkins, Ward, Bowman, & Rinck, 1989). The MSI is used to identify treatment need and assess change in cognitive distortions by sex offender treatment programmes. However, it has also been suggested to have risk assessment properties. Recidivists have been found to have significantly higher

scores on the Cognitive Distortions and Immaturity, Treatment Attitudes, Sexual Social Desirability, and Rape scales compared to non-recidivists (Craig *et al.*, 2006).

The wide use of the tool is likely due to it being relatively quick, easy, and flexible to administer to large samples, allowing for a vast amount of quantitative data to be produced. However, it may also be due to the limited number of assessments of sexual deviance, and the MSI being one of the few psychometric assessments that is a reliable and accurate measure of psychosexual functioning (Craig & Beech, 2008).

Although it is widely used, there are limitations to the tool's application to other samples, as highlighted by Dowling *et al.*, (2000). When using the MSI with an Australian sample, issues were raised on the applicability of the normative sample. This lead to the suggestion that clinicians needed to apply caution when using the MSI and interpreting results. It would be useful to review if other countries have similar problems with the MSI normative sample, given it is used across multiple countries (Beech *et al.*, 1999).

Overall, the MSI is the only commonly-used psychometric measure for psychosexual characteristics. It is suggested to be a moderately to highly reliable tool, however, there may be need for further exploration of its reliability and validity (Kalichman, *et al.*, 1992). It is reported to have good psychometric properties, a good evidence base, and it has the ability to identify denial (Kalmus & Beech, 2005), treatment progress (Simkins *et al.*, 1989), and potential recidivism (Craig *et al.*, 2006) in offenders.

Given that current measures of sexual behaviour and sexual deviance are primarily aimed at adults, it would be useful to consider the development of a tool specifically for young people.



**Chapter 4**  
**Research Project**

*An exploration of young people's pornography use, sexual health, and sexual  
behaviour: Is there a link?*

## **Abstract**

*Introduction:* Previous research has investigated the association between pornography and adolescents' attitudes (Braun-Courville & Rojas, 2009; Tsitsika, et al., 2009), sexual behaviours (Alexy, Burgess, & Prentky, 2009; Haggstrom-Nordin et al., 2006), self-concept, social development, and interpersonal relationships (Mesch, 2009). It has also been suggested that pornography reinforces a "pornographic script" for gender roles, body type and sexual activity (Lofgren-Martenson & Mansson, 2010), subsequently putting pressure on young people to engage in particular sexual activity. However, it has not been investigated if pornography is specifically associated with particular adolescent sexual behaviour, such as anal sex. In investigating the impact of pornography on young peoples' sexual health and behaviour, it will enable better understanding and subsequently help identify any protective strategies to be put in place, as well as contribute to educational and health policies.

*Method:* Participants were young males and females aged 16 to 25. A thematic analysis of content categories contained within a leading free access pornography website (i.e. Pornhub) identified the 50 largest categories based on the volume of available videos. This was incorporated into a questionnaire designed to gain insight into young people's pornography use, sexual health, and sexual behaviours. The analysis of the data compared participants' responses to sexual interests and health experiences. Patterns of responding were explored for underlying dimensionality (scales) using Principal Component Analysis (PCA). Written responses to open-ended questions regarding perceptions of the effects of pornography were also analysed using Thematic Analysis

*Results:* Sexual interest scales were identified and relationships were found between

some scales, as well as relationships found between these scales and levels of sexual coercion. A thematic analysis was conducted to uncover whether participants found pornography had caused them any problems. The most prominent issue raised was that it had caused problems with their sex life and/or romantic relationships.

## **Introduction**

### **Development of sex research**

Alfred Kinsey, a sexologist who founded the Institute of Sex Research at Indiana University in 1947, conducted preliminary research into sexual behaviour and sexual interests of men in 1948, and later of women. Kinsey aimed to gather a collection of facts about sexual behaviour. The purpose of this research was to enable readers to interpret these findings in line with their own views and morals (Kinsey Institute, 2016). Kinsey began collecting data from 1938 until 1963. In this time he reviewed males' potential behaviours to reach orgasm, and what might influence sexual behaviour. Examples of the former included intercourse and masturbation, and examples of the latter included age, marital status, occupation, and religion. To collect such data, Kinsey interviewed 5300 males and 5940 females – all participants where 'white' in ethnicity and the majority were young adults. The interviews involved questions, which dependent upon experience, could reach up to 521 items, although the average number of questions was 300. The interviews elicited information about socioeconomic issues, physical issues, marital status, and sexual experiences. Results included findings on the prevalence of anal sex, vaginal sex (including length of, frequency, position, and age of first experience), masturbation, foreplay, oral sex, orgasm, premarital sex, fantasy, nudity, bisexuality, sadomasochism, sex with prostitutes, the age of maximum sexual activity, and homosexuality. From data on the latter, Kinsey developed a Heterosexual-Homosexual rating scale (1948).

Specifically, Kinsey (1948; 1953) reported that 11% of males had engaged in anal sex – a female comparison could not be made due to data not being available. In terms of

fantasy, today's literature encompasses thoughts about carrying out specific sexual acts, however, in Kinsey's research, fantasy simply related to having sexual thoughts and becoming aroused. The percentage of males having sexual fantasies and masturbating was relatively high at 89%. Although Kinsey provided a wealth of knowledge for that period in time, it provides little more than frequencies of certain behaviours, which at times are vague. It does not include issues such as sexual health, which has perhaps become more salient as sexual freedom has become a part of modern life. Also, issues have been raised on the ethicality of Kinsey's research, as it minimised the impact of sexual offending on the victim, and the responsibility of the perpetrator (Knight, 2003). This subsequently negatively impacted children and females both in law and society, with females displayed as either sexually repressed or promiscuous (Knight, 2003).

In 1982, Masters, Johnson, and Kolodny wrote a book to educate the general public on sexual matters. Through interviewing hundreds of participants, they were able to cover a wide range of sexual matters – sexual anatomy, sexual physiology, contraception, sexuality in children, adolescents, and adults, gender roles, communication, fantasy, masturbation, sexual orientation, sexual assault, paraphilias, sexual dysfunctions and disorders, and finally, sexually transmitted disease. The purpose of this book was to better inform the public on these matters, which would enable them to aid their sexual satisfaction (Masters, Johnson, & Kolodny 1988). Ten years later, Breakwell & Fife-Schaw (1992) completed a study to identify sexual activities and preference in 16 to 20 year-olds. Specific sexual activity was reviewed due to the then rise in heterosexuals contracting HIV, which was at the time suspected to be because of an increase of heterosexual anal sex, however the origin remains unclear. The study identified that in the heterosexual male sample, 58.2% had engaged in oral sex, 68.4% in vaginal sex,

and 9.2% in anal sex – for all of these behaviours, engagement increased over age (Breakwell & Fife-Schaw, 1992).

From here, the study of sexual behaviour has developed and encompasses different aspects of research. Not only have various behaviours been researched, but also comparisons between males' and females' sexual behaviour have been made. Gender differences are evident in the prevalence of masturbation, with males displaying higher prevalence rates (Bejin, 1996; Leitenberg, Detzer, & Srebnik, 1993; Lewin, 2000; Parish, Laumann, & Mojola, 2007; Petersen & Hyde, 2010). Although female masturbation has increased over the years (Dekker & Schmidt, 2003; Kontula & Haavio-Mannila, 2003), with this now occurring in around 60% of sexually active young females (Bacak & Stulhofer, 2011). However, this data could be highlighting that females are now more prepared to acknowledge masturbating. Such differences in prevalence are suggested to be due to societal and cultural norms leading to females often feeling guilty and ashamed about masturbation (Hogarth & Ingham, 2009).

### **The influence of pornography on sexual behaviour**

Young people experience the onset of sexual development; therefore it is important to understand the impact pornography can have on them and their development (Quadara, El-Murr, & Latham, 2017). Research has noted that increased use of pornography is related to a young age of becoming sexually active (Häggström-Nordin et al., 2005; Kraus & Russell, 2008; Morgan, 2011). Specifically, young males who had used pornography between the ages of 12 and 14 years were three times more likely to have engaged in oral sex and sexual intercourse between the ages and 14 and 16 years, than those who had not used pornography (Brown & L'Engle, 2009). The correlation was

also apparent in young females, however at a lower rate of twice as likely for oral sex, and 1.5 times as likely for sexual intercourse.

Pornography use has often been suggested to have a negative impact on sexual behaviour and sexual risk (Hald, Seaman, & Linz, 2013). There is an association between pornography use and engagement in sexual harassment and sexual coercion in young males (Bonino, Ciairano, Rabaglietti, & Cattelino, 2006; Brown & L'Engle, 2009; Simons<sup>[11]</sup> et al., 2012). Explicitly, young males who used pornography between the ages of 12 and 14 years were more likely to engage in sexually aggressive behaviours two years later (Brown & L'Engle, 2009). Alexy, Burgess, & Prentky (2009) investigated a sample of adolescents who had sexually offended, and found that those who used pornography were more likely to engage in sexual coercion or forced sexual acts. Of this sample, those who had been sexually aggressive and had conduct issues were more likely to use pornography frequently, and watch violent pornography (Kjellgren et al., 2010). However, Ybarra & Mitchell (2005) suggested that frequent pornography use isn't linked to sexual aggression; instead there are other predisposing factors such as antisocial traits, hostility towards women, interest in domination, and lower intelligence. It is suggested that young people with these predispositions are more likely to use pornography, including violent pornography, and more likely to be impacted by the dominating gender scripts (Malamuth & Huppert, 2005; Ybarra & Mitchell, 2005).

To account for the gender differences in research around pornography use and sexual aggression, it may be worth considering if there are gender differences in consumption of pornography. Hald et al., (2013) gained prevalence rates for types of pornography

viewed in the past 12 months in their participant sample ( $n = 4,600$ ). Males (84.3%) viewed significantly more hard-core pornography (which explicitly depicts sexual acts) than females (69.6%), whereas females (44.4%) viewed significantly more soft-core pornography (which displays a lack of penetration, in that the behaviour is assumed, rather than explicitly shown) than males (34.5%). There were no significant differences between genders viewing in the other categories. It may be that there was difficulty in interpreting prevalences due to the categories being over-inclusive and not specifying precisely what individuals were interested in. As such in looking at the association between pornography on sexual behaviour, it may be worth reviewing if specific types of pornography are associated with specific sexual behaviour.

There is the notion that the link between pornography use and risky sexual behaviours is causal, which is the stance this thesis takes. However, it should be noted that there might be other underlying factors that could explain this link, such as lack of adult supervision (Adhikari & Tamang, 2009), lack of education, and the influence of young people's brain development, where the underdeveloped adolescent brain can lead to impulsivity and risk-taking (Romer, 2010).

### **The influence of pornography on sexual attitudes**

Pornography includes body and personality stereotypes. With men being strong, muscular, and dominant, and women being slender with large breasts, and submissive (Mattebo et al., 2012). These stereotypes are dominant in media and society, but are amplified in the majority of pornography (Quadara, El-Murr, & Latham, 2017). The body stereotypes are typically unobtainable, but seen as ideal by many young people. Regardless of gender, young people seem to share the belief that men and women



should act in specific ways when engaging in sexual activity (Martellozzo et al., 2016). In line with this, research suggests that pornography use correlates with gender-stereotyped beliefs about sex in young people (Brown & L'Engle, 2009; Häggström-Nordin et al, 2006; Peter & Valkenburg, 2009a), with this being somewhat stronger in young males (ter Bogt et al., 2010; Peter & Valkenburg, 2016). Increased use of pornography was also seen to be associated with increases in young people's objectification of women, and believing that their main purpose lies in sexually satisfying men (ter Bogt et al., 2010; Peter & Valkenburg, 2007). Overall, viewing pornography more often is significantly associated with increased belief in stereotypes (Brown & L'Engle, 2009), with this being stronger in young males and also linking to attitudes around sexual violence (Stanley et al., 2016). It is worth noting that holding strong gender stereotypes is associated with an increased likelihood of engaging in sexual aggression or sexual violence (Clarke & Stermac, 2011; Murnen, Wright, & Kaluzny, 2002).

Löfgren-Mårtenson & Månsson (2010) reported that pornography was seen to be a distortion and exaggeration of the truth. In particular, males described their experience of pornography as very different from their sexual experiences. Similarly, Baker (2016) reported 77% of young people reported pornography as not being realistic. However, Martellozzo et al., (2016) found that when investigating pornography use in 11-16 year olds, 53% of males and 39% of females reported it as being realistic. Research has suggested that pornography use can correlate to dissatisfaction of sexual behaviour in young people. In particular, Peter & Valkenburg (2009b) found this to be the case in a sample of 1,052 young males and females. This finding was supported by Morgan (2011), who highlighted that the type of pornography viewed linked with both sexual

preference and sexual dissatisfaction in young people. As such, it was suggested that pornography holds unrealistic expectations of sexual activity.

Research has noted that young females experience anxiety about what their partners expect them to do sexually (Häggström-Nordin et al., 2009; Martellozzo et al., 2016). In particular, Löfgren-Mårtenson and Månsson (2010) highlighted that young females had concerns regarding what their boyfriends expected of them if they watched pornography together. On the other hand, research has consistently reported that more relaxed attitudes towards sex are associated with increased use of pornography (Braun-Courville & Rojas, 2009; Häggström-Nordin, et al., 2005; Häggström-Nordin et al., 2006; Peter & Valkenburg, 2006b, 2008b, 2010b, 2016; Brown & L'Engle, 2009; Doornwaard, Bickham, Rich, ter Bogt, & van den Eijnden, 2015).

Perhaps due to the issues raised above, the influence pornography has on young people's sexual health should be considered.

### **The influence of pornography on sexual education**

More recent sexual education has focussed on respect and mutuality, however this contradicts the depiction given in pornography (Peter & Valkenburg, 2010a). As such, pornography has been suggested to negatively impact on sexual education (Brown & L'Engle, 2009; O'Hara, Gibbons, Gerrand, Li, & Sargent, 2013; Peter & Valkenburg, 2008; Ybarra, Mitchell, Hamburger, Diener-West & Leaf, 2011). It rarely depicts safe sex practices (Thomas, 2000), and viewers may subsequently take on a similar view, especially given that pornography actors appear healthy and attractive (Hald, et al., 2013). However, the reality for pornography actors includes a high prevalence of

disease, as well as vaginal and anal tearing. In line with this, Sun et al., (2013) suggests frequent pornography use by females relates to having less knowledge about HIV/AIDS, using condoms less often, and engaging in more high-risk behaviors. However, this research then highlighted that frequent pornography use in males was associated with reduced nervousness related to buying condoms, and less likelihood of engaging in high-risk sexual behaviour. Similarly, other research has suggested pornography provides sexual education for young people. In particular, Playboy magazines in the past have provided information on STIs and rape recovery (Beggan & Allison, 2003). On the other hand, some research has reported no significant correlations between pornography use and attitudes towards safe sex (Morrison et al., 2004). Despite one third of sexually active individuals contracting an STI by the age of 24 (Rideout, 2001), there is a lack of studies describing what sexual health problems young people might experience. Instead ‘sexual health’ in such studies – which have displayed inconsistent findings – often related to attitudes and knowledge around STIs and safe sex.

### **Aim and purpose of research**

The current study aims to investigate the influence of pornography on young people’s sexual health and behaviour. There is a need to review and address pornography use in young people (NSPCC, 2015) as it relates to their sexual health and behaviour. Over 10 years ago, it was reported that 42% of 10 to 17 year olds had viewed pornography online, with 66% of exposures being unwanted (Wolak, Mitchell, & Finkelhor, 2007). These findings support the NSPCC’s (2015) statement that pornography use in young people needs reviewing and that findings are out-dated and need revisiting. However, what is worth noting is that two thirds of young people who have viewed pornography

have not actively sought it out. Therefore there is a need to better understand the influence of pornography on sexual health and behaviour, and its impact generally on a vulnerable population. The choice to focus partly on young males in this study was influenced by the findings from Morrison et al., (2004) that males access Internet pornography more than females. However, the choice to also focus on females in this study is due to the underrepresentation of them in previous sexual research. It is Internet pornography that is the most commonly accessed media (Petersen & Hyde, 2010; Wright, 2013), but which young people are also being unwittingly exposed to (Wolak et al., 2007). With this in mind, and with this generation of young people having easy access to the Internet, it seems vital to consider the associations between viewing pornography and sexual health and behaviours.

Prior literature presents findings on the influence of pornography on various factors in young people. However, there is a lack of research on whether pornography specifically normalises or glamorizes particular sexual behaviours, such as anal sex. Furthermore, prior literature has not focused on the influence of pornography on a wider range of sexual behaviours and health issues, rather it has tended to focus primarily on safe sex practices and sexually transmitted infections (STIs) (Hald et al., 2013). A limitation of such research is that findings may lead to an overestimation of the influence of pornography on sexual health and behaviour (Hald, 2006; Luder, Pittet, Berchtold, Akre, Michaud, & Suris, 2011). Therefore, the current research aims to expand on this. Finally, the current research will differentiate between the forms of pornography viewed, in respect to videos, still images, and stories, and how young people access pornography i.e. online websites, magazine, DVDs, peer-sent images/videos. It will also specify what types, or categories, of pornography young people are viewing. This

will progress from previous measurements of pornography primarily focusing on consumption, rather than content (Hald et al., 2013).

Research aims include:

- To establish what types of pornography young people are viewing, and how they are accessing it (i.e. online websites, magazine, peer sent via text or email).
- To determine if there is a link between young people's pornography use and their sexual health.
- To determine if there is a link between young people's pornography use and their sexual behaviour.

Research hypotheses, based on developmental theory, are as follows:

- Viewing more pornography will be associated with higher rates of sexual behaviours, in line with social learning theory (Bandura, 1977).
- Viewing a particular type of pornographic content is assumed to develop a 'script' for young people, which in turn will relate to the 'type' of sexual activity young people engage in.
- Viewing more pornography will relate to more sexual health problems (as condom use and safe sex practices are limited in pornography [Quadara, El-Murr, & Latham, 2017]), which may include sexually transmitted infections (STIs) and experience of erectile dysfunction (ED).

## **Methodology**

### **Sample**

The sample was made up of 334 participants aged between 16 and 25 years, with a mean age of 20.2 years old (S.D. = 1.32). Previous literature on this subject has used participants from the age of 10 (Ybarra & Mitchell, 2005) to 22 years old (Braun-Courville & Rojas, 2009). However, this study focused on young people aged 16 to 25 years old, as developmentally, this age range typically covers when people first engage in sexual intercourse (Mosher, Chandra, & Jones, 2005).

184 (55.1%) of the participants identified as female, 148 (44.3%) identified as males, and 2 (0.6%) identified as 'other'. Regarding sexuality; 76.8% reported to be heterosexual, 17.7% reported to be bisexual, 4.5% stated they were homosexual, and 1% preferred not to say. Along with this, just over half of participants were in a relationship (52.1%) whereas the rest reported being single (47.9%).

Of the sample, 93% reported being British. With regards to religion, the majority (70%) did not assign to a religion, 24% reporting to be Christian, and 6% reporting a different religious affiliation.

Participants were primarily sourced from educational institutions: 281 (84.1%) were university students (primarily undergraduates from a UK university) and 8 were school or sixth form students (2.4%), with the remainder (45; 13.5%) being in some form of employment or unemployed. Fully informed consent was sought from all participants.

## **Procedure**

This study was conducted in two stages. Firstly, a thematic analysis was completed on the categories of pornographic videos on a top porn tube site named “Pornhub” – a free access pornography website. The aim of completing the thematic analysis was to identify the 50 largest categories of pornographic videos, based on the volume of videos available from a list of themes. This list of 50 pornographic categories was then incorporated into the second stage of the study. Due to an absence of a comprehensive measure, the second stage involved developing a questionnaire to collect the required data. The questionnaire, entitled the Pornography and Sexual Health Inventory (POSHI) is divided into three parts, collecting three aspects of data – pornography use, sexual health, and sexual behaviour. The POSHI was developed with an over-inclusive set of items as it was unclear what form of questioning would elicit the most reliable data. The first stage of the study enabled incorporation of a valid and representative set of pornographic themes within this first section of the questionnaire, with the aim of developing a set of sexual interest scales. The majority of items were created as ordinal response items to allow for meaningful measurement, whereby a smallest space analysis (SSA) would be appropriate. For part of the sexual behaviour section, open-ended questions were used to elicit participant’s perception of the impact of pornography on sexual behaviour, whereby a thematic analysis would be used.

The POSHI was made up of 168 items and took around 25 minutes to complete. The questionnaire was uploaded to Limesurvey – a reliable and widely used website to collect data – in February 2017. To complete the questionnaire, participants created a unique code in order for them to identify their responses, should they wish to withdraw from the study. Prior to giving consent, participants were provided with a detailed

information sheet regarding the nature of the questionnaire, and appropriate contact details were provided.

The research was advertised verbally, over email, and over social media sites such as Facebook, where a web link to the Pornography and Sexual Health Inventory (POSHI) – the questionnaire developed for the research – was provided. The participants were therefore a self-selected, convenience sample. Apart from being between the ages of 16 and 25, participants did not need to meet any specific requirements to complete the study. As long as participants could provide fully informed consent themselves, there were no exclusion criteria.

Following completion of the questionnaire, data were analysed to review any trends across subgroups. Participants' responses on sections of the questionnaire were compared. Potential emerging patterns were explored using principal component analysis (PCA). For the section on participant's perception of the impact of pornography on sexual behaviour, a thematic analysis was used to develop themes in responses.

In order to ensure potential participants were able to provide fully informed consent, they were provided with an information sheet explaining the purpose and procedure of the study, and had the opportunity to ask any questions. Participants were not deceived prior to the study, and were made aware in the information sheet about what the research aims and purpose were, what would happen to their data, their right to anonymity and confidentiality – which will be ensured throughout the study – and their right to withdraw is explained. All participants were aged 16 or over and had the ability



to provide consent for themselves. Participants were provided with an opportunity to speak to the researcher after completing the questionnaire via contact details provided. Appropriate supervision for the researcher was provided, especially due to the potentially sensitive nature of the study.

Participants who agreed to take part were made aware of their right to withdraw from the study. They were informed that withdrawal could occur up until they submitted their questionnaire, or afterwards using their unique code to retrieve and delete the data. Furthermore, they were assured that withdrawing and choosing not to participate would not impact them in any way, and they would still have the opportunity to be debriefed. Data from partially completed questionnaires (where participants had chosen to withdraw part-way through), were not included in the analysis. All responses were made anonymous online, however participants created a unique code for their questionnaire that only they knew, in case they wished to withdraw their data. The reasoning for this anonymity was that responses were then not identifiable to participants.

Data came via an online platform, which was converted into excel and then SPSS. These were all kept on the supervisor's PC, a University computer, which was secure, and was only accessible by the researcher and supervisor.

Potential risks for participants were considered. It was noted that in speaking about the potentially sensitive subject of sexual behaviour, health, and pornography use, feelings of embarrassment, judgement, or sexual arousal might have arisen. To control for this, participants were made aware that such subjects were being discussed only in the

context of this study and solely for the purpose of deriving data. Furthermore, participants were reminded that their responses would not be judged, and would remain confidential. Finally, participants were debriefed following their participation.

## **Measures**

A questionnaire, the Pornography and Sexual Health Inventory (POSHI) (see Appendix F for full questionnaire) was developed to derive details of young people's demographics, pornography use, sexual health, and sexual behaviour. A measure of Erectile Dysfunction (ED) was also included; the International Index of Erectile Function-5 (IIEF-5) was included towards the end of the questionnaire to measure erectile function (Rosen, Riley, Wagner, Osterloh, Kirkpatrick, & Mishra, 1997). A measure of sexual coercion was also included; the Sexual Coercion Scale from the Revised Conflict Tactics Scale (RCTS) was included at the end of the questionnaire to measure sexual aggression (Straus, Hamby, Boney-McCoy & Sugarman, 1996). Data were collected within different sections of the questionnaire - Demographics, Sexual Relationships, Brief Personality, Social History, Living Arrangements, Attitudes towards sexuality; Pornographic Interests and Behaviours; Sexual Health Characteristics; Sexual Behaviour, and Sexual Function.

Using open and closed questions, the questionnaire identified the frequency of different 'types' of pornography viewed, sexual health issues experienced, and the type of sexual behaviours engaged in. Further details included answers to questions on peer influence, sexual education and level of comfort in receiving this, gaining consent, and thoughts on sexual activity and sexual fantasies. Data primarily allowed for comparisons to be

made between pornography viewed, sexual health experienced, and sexual activities participated in.

A self-report questionnaire is a relatively simple and inexpensive way of gaining data from respondents. It enables patterns to be revealed between groups, and provides anonymity and confidentiality, which may not be provided by other measures (Bacak & Stulhofer, 2011). Given the potentially sensitive nature, a questionnaire therefore may be the most appropriate and effective method of collecting data. However, as previously pointed out, self-report can result in inaccurate reporting if influenced by participants social desirability and recall bias (Gagne, 2005).

### ***Pornography and Sexual Health Inventory (POSHI)***

Informed by relevant research and theory, the Pornography and Sexual Health Inventory (POSHI) was devised to assess a wide range of pornographic interests and sexual behaviours. As there is currently no measure to assess these behaviours, devising the POSHI was essential for this study to gain a measure of pornography use, sexual health and sexual behaviours. Within the POSHI, 18 items measured participants' engagement in the following sexual behaviours; masturbation (solo and mutual), vaginal intercourse, anal intercourse, sex toy use, and bondage. Participants were also questioned on whether there were any sexual behaviours they did not want to engage in, but that their partner did (where they had responded that they had a partner).

Pornography use was assessed through the overall frequency of participants current pornography use, i.e. "Currently, how frequently do you view pornography?" [1=less than once a month, 2 = once a month, 3 = two or more times a month, 4 = once a week,

5 = two or more times a week, 6 = once a day, 7 = two or more times a day]. The POSHI then progressed to question how often participants viewed specific material, using a 4-point scale, i.e. “For all of these ‘search terms’, how often have you viewed these types of pornography?” – never, once, sometimes, or regularly. This covered the 50 pornography themes identified from conducting the thematic analysis.

The POSHI was developed to be exhaustive, and as such some of the content is outside the scope of the thesis as it is planned for another project.

### ***Sexual Aggression***

In addition, the Sexual Coercion Scale from the Revised Conflict Tactics Scale (RCTS; Straus, Hamby, Boney-McCoy & Sugarman, 1996) was included at the end of the questionnaire to measure sexual aggression. The Sexual Coercion Scale was developed to consider three levels of coercion (insistence, threats of force and actual force) with three sexual acts (oral, vaginal and anal). However, for the purpose of this study, an additional five items were added to the scale in order to cover a wider variety of sexual behaviours. This included whether individuals had insisted or forced a partner into a threesome, bondage or into shaving their genitals. The reliability of the original scale (seven items) was performed via the Cronbach’s alpha ( $\alpha = .495$ ) suggesting low reliability. However, with the additional five items, the reliability of the scale improved ( $\alpha = .631$ ).

### **Ethical Considerations**

For this study to proceed, ethical approval was sought from the Research Ethics Committee at the University of Birmingham. To ensure ethical approval, the BPS code

of ethics and conduct (BPS, 2009) and the HCPC standards of proficiency (HCPC, 2012) were adhered to.

### **Treatment of Data**

Responses to the POSHI resulted in the production of non-linear data. Due to this, factor analysis – a multivariate technique for linear data, which identifies if correlations between variables are due to their relationship with latent variables (Field, 2013) – was not an appropriate analysis to use. Therefore, Multidimensional Scaling (MDS) – another multivariate technique that identifies relationships between variables, but for non-linear data (Wickelmaier, 2003) – was initially chosen as the statistical analysis for this data. The analysis of data aimed to identify any trends in participants' responses to pornography use. These patterns of responding were examined through using MDS techniques, including Smallest Space Analysis (SSA; (Guttman, 1968), which identified any underlying themes in young peoples' sexual interests.

SSA was used to explore the data initially before reanalysing, however this was difficult to interpret (see Appendix F). It was then identified that principal component analysis (PCA) would be more appropriate for the analysis, as the data was ordinal as opposed to interval and parametric. Data was treated according to whether it met parametric requirements with items examined individually. As such an ordinal matrix was selected in SPSS and the tau coefficient was selected. The aim of this was to explore any underlying dimensions within the data that could be used as the basis for scales. PCA is a multivariate technique used for identifying linear components in a set of variables (Field, 2013). PCA is typically used to support the construct validity of psychological tests.

## Results

### Descriptive statistics

The data revealed that 100% of the sample had viewed pornography and 96% reported to currently viewing pornography. The average age to first view pornography was 11 years old (11.67 years; SD= 1.84), whereas the average age to first use pornography for sexual pleasure was 13 years old (13.12 years; SD= 1.58). On average young people reported currently viewing pornography “two or more times a week”, whereas the average young people had previously viewed pornography was “two or more times a day”. The average “time spent per session” was “10-30 minutes”; and the mean number of years spent viewing pornography was 7.51 years.

A Pearson Chi-Square analysis showed that males were significantly more likely to view pornography than females ( $\chi^2 (2) = 19.199, p < .001$ ).

To consider whether pornography consumption is related to engaging in specific sexual behaviours, a series of Spearman's correlations were conducted. Findings showed a positive correlation between pornography consumption and oral sex ( $r = .155, N = 334, p = .005$ ), anal sex ( $r = .146, N = 334, p = .008$ ), sex toy use ( $r = .169, N = 334, p = .002$ ) and bondage use ( $r = .139, N = 334, p = .011$ ). 67% of young people reported “at least half the time” the pornography they view is different from the sexual acts they engage in, whereas 13% reported the pornography they view is “almost always or always” different from what they do in real life. 33% reported the pornography they view is different from what they engage in sexually either “never or almost never” or “less than half the time”.

A Mann Whitney U Test was completed in order to allow for comparison between those currently and those who do not currently view pornography for number of sexual partners and experience of STI's. This analysis was chosen as the data was not normally distributed. For the number of sexual partners, those who currently viewed pornography had a significantly higher median number of sexual partners than those who did not currently view pornography ( $U = 5186.5$ ,  $Z = -3.329$ ,  $p = .001$ ). For STI's, no significant difference was discovered between current viewers and non-current viewers of pornography.

### **Pornography scales**

The POSHI covered the 50 pornography themes identified from conducting the thematic analysis, using a 4-point scale i.e. "For all of these 'search terms', how often have you viewed these types of pornography?" – never, once, sometimes, or regularly. A starting point was to look at any potential underlying scales within the reported sexual interests of the participants. As this is a new tool, some scales needed to be derived to tap into different sexual interests. This was achieved through using a principal axis factor analysis with oblique rotation, and six scales look interpretable.

In order to explore whether there was any structure to the patterns of interest, and therefore whether they form scales, a classical test theory approach was adopted. The 50 sexual interest variables were analysed using, factor analysis to examine linear structure, multidimensional scaling and reliability analysis to derive a meaningful set of pornographic interest scales. A principal components analysis (PCA) was applied, with oblique rotation (as factors were assumed to be related). The number of factors extracted was determined via a combination of the Kaiser criterion (Eigen over 1) and

examined the scree plot (Cattell method). The resultant solution was six factors provided below. The pattern matrix is provided as it represents the best fit of the original correlation matrix. The six-factor solution below explains 66% of the variance, with the first factor explaining 50%, indicating that there may be an underlying general factor for porn interests.

The scale's reliabilities were tested via Cronbach's alpha, with the following results for each component being found:

1. Young/fantasy – 0.88
2. Sexual objectification – 0.92
3. Hard-core/violent – 0.91
4. Soft-core – 0.88
5. Image – 0.90
6. Fetish – 0.7

NB: The sexual objectification category could be interpreted as a female interests scale due to the name of items included in it, however, a decision was made to consider this as sexual objectification based on the type of material it covers.

Below highlights the items, based on video category, in each scale, with the number of the scales above correlating to the numbers of the components below. Some of the items did not fit in a specific scale because they were present in multiple themes. For example 'anal' lands across 'young/fantasy', 'hard-core/violent', and 'image'.



Table 2: Pattern Matrix for 50 top pornography categories

	Component					
	1 Young/ fantasy	2 Sexual objectif- ication	3 Hard- core/ violent	4 Soft- core	5 Image	6 Fetish
Young/Teen	.764	.079	-.036	.048	.077	-.091
18 year old	.700	.113	.049	.046	.125	-.016
Virgin/First time	.651	-.040	.133	.079	.072	-.131
College	.450	.151	.092	.242	.188	.155
Family members	.426	-.136	.233	.022	.139	-.392
Anal	.299	.158	.243	.023	.292	-.075
Lesbian	.072	.683	.217	-.107	.079	.026
Vagina/Pussy	.316	.650	-.034	.003	.062	-.019
Oral/Licking-out/going down	.069	.644	.072	.218	-.099	-.114
Masturbation on other/ Handjob/ Fingering	-.024	.641	.055	.191	-.050	-.226
Solo Masturbation	-.136	.622	-.042	.032	.187	-.298
Female orgasm/Ejaculation/ Squirting	.041	.602	.196	-.025	.224	.088
Sex toys/ Vibrator/ Dildo	-.126	.532	.380	.063	.080	-.033
Boobs	.301	.526	.053	-.047	.247	.054
Ass	.325	.381	.092	-.059	.353	.001
Oral/Blow-job/Head	.231	.326	-.092	.274	.234	-.102
Threesomes/ Orgies/ MMF/ FFM	.273	.321	.317	.028	.098	.050
BDSM	-.208	.178	.760	.064	.047	-.102
Rough/Hard	.052	.127	.732	.047	.049	.007
Forced	.116	-.070	.722	-.097	-.137	-.367
Hard-core	.112	.110	.644	.027	.173	-.029
Role play	.134	.109	.548	.300	.047	.209
18 & Abused	.425	-.140	.496	.031	-.015	-.233
Slag/ slut/ whore	.197	.000	.480	.106	.169	-.083
Location (e.g. Bathroom/ Outside/ Car)	.153	.092	.378	.330	.099	.077
Professionals (i.e. Teacher/ Fireman/ Nurse)	.297	.103	.313	.195	.166	.166
No Condom	.095	-.132	.040	.747	.176	-.045
Condom	-.031	-.124	.048	.689	.262	-.155
Straight	.249	.295	.043	.557	-.127	-.009
Penis/Cock/Dick	.139	.266	.000	.512	-.342	-.373
Soft-core	-.102	.212	.280	.477	.122	.058
Foreplay	.066	.415	.099	.450	-.051	-.031
Specific positions (e.g. Cowgirl, Doggy)	.043	.164	.196	.393	.320	.066
Fuck/Shag/Sex	.289	.318	.089	.388	-.017	-.073

Bisexual	.070	.341	.157	.370	-.200	-.277
Nationality/ Race (e.g. Latino/ Italian/ Chinese)	.074	.077	.039	.000	.735	-.081
Nationality/ Race (e.g. Latino/ Italian/ Chinese)	.074	.077	.039	.000	.735	-.081
Hair colour (e.g. Blonde)	.253	.068	-.098	.184	.600	.091
Black	.097	.063	-.017	.201	.550	-.191
Tattoos/ Piercings	-.126	.058	.210	.064	.543	-.154
Body type (e.g. Fat/Slim)	.189	.049	.056	.028	.540	-.047
Camera/ Video/ POV	.163	.276	.100	.182	.459	.152
Older Adults/MILF	.330	.147	.082	-.077	.450	-.123
Celebrity	.249	-.001	.076	.171	.436	.034
Amateur	.196	.223	.149	.227	.253	.012
Gay	.104	.048	.155	.213	-.074	-.554
Transsexual/Transvestite	.075	.083	.183	-.052	.232	-.521
Balls/Teabagging	-.082	.145	-.037	.228	.246	-.521
Urinating or defecation/ Watersports/ Golden shower/ Scat	.197	.188	.168	-.106	.099	-.508
Religion	-.068	.013	.254	.175	.350	-.364
Sperm/Cumshot/Jizz	.267	.239	-.100	.236	.194	-.285

Extraction Method: Principal Component Analysis  
Rotation Method: Oblimin with Kaiser Normalization  
Pattern Matrix – Rotation converged in 34 interactions

Principal components analysis (PCA) with oblique rotation, which assumes that the factors are related, was used to analyse the data. This form of analysis was used to generate scales for underlying dimension of sexual interest, rather than the 50 categories outlined above. Since not all factors were interpretable and the analysis is somewhat exploratory at this stage, not all components were used. Four components made good theoretical sense in the context of the wider literature (Hald, Seaman, & Linz, 2013; Hald, Smolenski, & Rosser, 2013; Wright, 2013), so these were examined for reliability and used as scales. For the remainder of the research, the following four scales, derived from a PCA will be used to compare sexual health and behaviour, as they represent emerging key themes of interest: “hard-core/violent”, “sexual objectification”, “young/fantasy”, and “soft-core”.

## Sexual Coercion

Using the four scales produced from the PCA, a regression analysis was conducted in order to examine the variables that associated with sexual coercion. The correlations between total sexual coercion scores and the scales (“hard-core/violent”, “young/fantasy”, “sexual objectification”, and “soft-core”) are highlighted in Table 3. This displays sexual coercion as being positively correlated with the four scales.

*Table 3: Inter-correlations between Sexual Coercion and all four scale variables in the regression analysis (N=334)*

		Sexual Coercion	Hard-core /violent	Young/ fantasy	Sexual Objectification
Hard-core /violent	r	.182			
	p	.001			
Young/fantasy	r	.205	.671		
	p	.000	.000		
Sexual Objectification	r	.132	.678	.701	
	p	.016	.000	.000	
Soft-core	r	.183	.689	.640	.764
	p	.001	.000	.000	.000

All variables accounted for 6% of the variance of sexual coercion in the sample. “Hard-core/violent” and “Young/fantasy” pornography were both significantly associated with sexual coercion, suggesting that individuals viewing pornography of this nature are likely to be more sexually coercive with their partners. With that, participants who scored more highly on the sexual coercion scale viewed more “hard-core/violent” pornography ( $\beta=.211$ ,  $p=.001$ ) and “young/fantasy” pornography ( $\beta=.174$ ,  $p=.041$ ), but viewed less “sexual objectification” pornography ( $\beta=-.220$ ,  $p=.036$ ). The “sexual objectification” pornography category was negatively associated with sexual coercion. As such individuals who view this pornography, which contains the objectification of women, are less likely to be sexually coercive in sexual relationships. This could

suggest that the decision to label this category as such was incorrect, and it may better have been defined as “female interest”. “Soft-core” pornography was not a significant predictor of sexual coercion.

To assess whether there were any gender differences within sexual coercion, a Mann Whitney U test was conducted. No significant differences between genders was identified ( $U=13230$ ,  $Z=-.541$ ,  $P=.588$ ).

An analysis of qualitative data identified that some participants engaged in certain sexual acts due to their sexual partners. Four common themes were identified for the question “What sexual acts have you engaged in because your partner wanted to but you did not, and why?”. These included vaginal intercourse (16%), oral sex (11%), anal activity (6%) and mutual masturbation (2%). With regards to the “why”, answers primarily included “feeling pressured” and “being too drunk”. Females wrote the majority of responses to this question about their male sexual partners.

### **Relationship to erectile dysfunction (ED)**

Using the International Index of Erectile Function-5 (IIEF-5), participants’ experience of erectile function was considered. A score of 0 to 5 is awarded for each question. 81% of participants were found to have no ED. 15% of participants were found to have mild ED, 2% mild-moderate ED, 1% moderate and 1% severe ED. The relationship between pornography consumption and erectile dysfunction (ED) was also considered. Here, four questions that identified pornography use were correlated against scores for ED. The four questions used were: “current frequency of viewing pornography”; “previous

frequency of viewing pornography at most”; “current longest time spent per viewing session”; and “years spent viewing pornography”. Answers for “current and previous frequency of viewing pornography” were coded from 0 (Not at all) to 7 (Two or more times a day). Answers for “longest time spent viewing was coded” from 0 (Not at all) to 5 (Several hours), and “years spent viewing pornography” was calculated by subtracting the age that participants first viewed pornography for sexual pleasure from their current age.

A Spearman’s rho correlation test was used to discover a correlation between pornography use and sexual function. This data was non-parametric, ordinal, and there was one independent variable, hence this test being chosen. Eight correlation tests were completed. No significant correlation was found between ED and “current frequency of viewing pornography”. “previous most frequent viewing of pornography”, “time spent per viewing session”, or “years spent viewing pornography”.

### **Thematic analysis of qualitative responses**

Table 4 below summarises the problems identified by participants into themes. Qualitative responses by participants were analysed using Thematic Analysis. The most prominent issues (with a count of 28; 8%) are with their sex life and/or romantic relationships. Following this, issues such as impacting their beliefs and expectations of sex (count 23; 7%), and body confidence and appearance issues (count 21; 6%), were also relatively high. The lesser issues raised through this thematic analysis were difficulties with parental concern (count 4; 1%) and a lack of physical or emotional education (count 7; 2%).

*Table 4: Themes found through thematic analysis of the question “Do you think viewing porn has ever caused you any problems?”*

Theme	Count (Percentage)	Examples
Affecting beliefs/ expectations regarding sexual behaviour	23 (7%)	<p>“A warped distortion of what an intimate relationship/sex is”</p> <p>“Causes unrealistic expectations”</p> <p>“Corrupting standards and expectations”</p> <p>“Unrealistic expectation of other people's sex drives”</p>
Confidence/ appearance issues	21 (6%)	<p>“Body confidence issues”</p> <p>“Believing my labia was too big and ugly, therefore affecting my confidence”</p> <p>“Comparing the size of my genitals to the actors”</p>
Sexual acts and interests encouraged	15 (4%)	<p>“Wanting to do what I watch”</p> <p>“Normalising abuse”</p> <p>“Wanting more aggressive sex in real life after viewing pornography”</p>
Sex life/ relationships impacted	28 (8%)	<p>“Anxiety about receiving oral sex”</p> <p>“Couldn't enjoy sex with a previous partner without viewing porn at the same time”</p> <p>“Relationship issues”</p> <p>“Don't know what a real relationship should be like”</p> <p>“Erectile dysfunction”</p>
Lack of education/emotional issues	7 (2%)	<p>“Confusion about sex and female orgasms growing up”</p> <p>“Feelings of guilt and shame”</p> <p>“It makes me feel like I've gone against my morals”</p>
Parental concern	4 (1%)	<p>“Mum found search history - disagreed fundamentally with porn. Damaging for our relationship”</p> <p>“Parental concerns”</p>

Count refers to the number of participants who reported the theme.

## Discussion

This research adds valuable data and insight into a poorly researched area. The health and behaviour of younger people should be of utmost priority to society. However, when their sexual health and behaviours are not considered, this impacts on the ability to fully care for and support younger generations. The current research was carried out to address this deficit. In reviewing whether or not the research aims and hypotheses have been met, each one will be discussed in turn.

*- To establish which types of pornography young people are viewing, and how they are accessing it (e.g. online websites, magazine, peer sent via text or email).*

The Pornography and Sexual Health Inventory (POSHI; Murgatroyd and Bishopp, 2017, unpublished) includes a pornography interest scale that empirically derived the 50 top pornography themes identified from conducting the thematic analysis, using a 4-point scale i.e. “For all of these ‘search terms’, how often have you viewed these types of pornography?” – never, once, sometimes, or regularly. The type of pornography viewed was recorded and this allowed for particular interest scales to be developed through using a principle component analysis with oblique rotation – primarily “hard-core/violent”, “soft-core”, “young/fantasy”, and “sexual objectification”.

Previous research by Hald, Kuyper, Adam, & de Wit (2013) gained prevalence rates for types of pornography viewed in their participant sample ( $n = 4,600$ ). Categories of pornography included hard-core, soft-core, violent/forced, and SM/bondage/fetish. Hard-core pornography was displayed as the most frequently viewed. In regards to gender difference, males (84.3%) viewed significantly more hard-core pornography

than females (69.6%), whereas females (44.4%) viewed significantly more soft-core pornography than males (34.5%). There were no significant differences between gender viewing in the other categories, nor was this something considered in this study. However, they did not break down pornography consumption into the categories, such as the 50 categories that were included in this study.

With regards to how young people were accessing pornography; this was primarily identified to be via the online websites. Previous research has also considered this, and Morrison et al., (2004) suggested that virgin males viewed TV/DVD pornography less often than non-virgins, however no difference was found between these participants in viewing Internet pornography.

***- To determine if there is a link between young people's pornography use and their sexual health***

One hundred percent of the participants had viewed pornography and 96% reported to currently viewing pornography. A comparison was made between those who were currently viewing pornography and those who were not currently viewing pornography for number of sexual partners and experience of STIs. For the number of sexual partners, those who were currently viewing pornography had a significantly higher median number of sexual partners than those who were not currently viewing pornography ( $U = 5186.5$ ,  $Z = -3.329$ ,  $p = .001$ ). For STI's, no significant difference was discovered between current viewers and current non-viewers of pornography.



***- To determine if there is a link between young people's pornography use and their sexual behaviour***

As reported previously, there is a positive correlation between pornography consumption and oral sex ( $r = .155$ ,  $N = 334$ ,  $p = .005$ ), anal sex ( $r = .146$ ,  $N = 334$ ,  $p = .008$ ), sex toy use ( $r = .169$ ,  $N = 334$ ,  $p = .002$ ) and bondage use ( $r = .139$ ,  $N = 334$ ,  $p = .011$ ). It is worth noting that 67% of young people reported at least half the time the pornography they view is different from what they do in real life, whereas 13% reported the pornography they view is almost always or always different from what they do in real life.

It is worth noting that previous research has identified pornography as an influential factor in sexual behaviour (Alexy, Burgess, & Prentky, 2009; Haggstrom-Nordin, Sandberg, Hanson, & Tyden, 2006). Pornography use has often been suggested to have a negative impact on sexual behaviour and sexual risk (Hald, Seaman, & Linz, 2013). This influence has further been suggested to be more severe in adolescents than adults, as they have a higher rate of exposure (Morgan, 2001; Sinkovic, Stulhofer, Bozic, 2012; Traeen, Nilsen, & Stigum, 2006), and are in the process of developing their sexuality (Stulhofer, Busko, & Landripet, 2010). Frequent pornography use has been associated with sexually risky behaviour (Wang, Wu, Zhao, Li, Zhao, Zhou, & Ji, 2013), masturbation (Bacak & Stulhofer, 2011), and increases in sexual behaviour (Hald, Kuyper, Adam, & de Wit, 2013). In terms of anal and vaginal intercourse, pornography use was not previously found to be associated with engagement in these sexual behaviours; however 'recent experience of anal intercourse' was suggestive of higher pornography use. The depiction of anal sex in pornography has risen over the years, and it has been suggested that this has influenced a rise in individuals engaging in anal

sex. There is little research that either supports or disputes this claim (McBride & Fortenberry, 2010), which could be because it is a recent phenomenon. However, Rogala and Tyden (2003) suggested females who viewed pornography, compared to those who did not, were almost twice as likely to engage in anal sex – with one third of their sample reporting they were influenced by pornography.

In line with engagement in anal sex, another link between pornography use and sexual behaviour is the use of sexual coercion. An analysis of qualitative data identified that some participants engaged in certain sexual acts for their sexual partners or due to encouragement from them. Four common themes were identified in responses to the question “What sexual acts have you engaged in because your partner wanted to but you did not, and why?”. These included vaginal intercourse (16%), oral sex (11%), anal activity (6%) and mutual masturbation (2%). With regards to the “why”, answers primarily included “feeling pressured” and “being too drunk”. The majority of responses to this question were from females, referring to their male partner. To assess whether there were any gender differences with regards to sexual coercion, a Mann Whitney U test was conducted. No significant differences between genders was identified ( $U=13230$ ,  $Z=-.541$ ,  $P=.588$ ).

Using the four scales produced from the PCA, a regression analysis was conducted in order to examine the variables that were associated with sexual coercion. The correlations between total sexual coercion scores and the scales (“hard-core/violent”, “young/fantasy”, “sexual objectification”, and “soft-core”) showed that sexual coercion was positively correlated with the four scales. In contrast, previous research has suggested that frequent use of pornography has not been linked to increased sexual

aggression (Ybarra & Mitchell, 2005). However it has been suggested that it promotes more distorted attitudes towards females, which, in turn, may influence sexual aggression (Donat & D'Emilio, 1992; Jozsa & Jozsa, 1980).

Another impact pornography can have on sexual behaviour is through problematic sexual relationships. Through a thematic analysis, problems caused by young people viewing pornography were identified. The most prominent issues (with a count of 28; 8%) were with their sex life and/or romantic relationships. Participants experienced anxiety around engaging in sexual acts, or found they couldn't enjoy sex without watching pornography. To a slightly lesser extent, young people were noting that it impacted upon their beliefs and expectations of sex (count 23; 7%), in that they had unrealistic views of sexual behaviour; and body confidence and appearance issues (count 21; 6%), in that they believed their genitalia should look differently. The lesser issues raised through this thematic analysis were difficulties with parental concern (count 4; 1%) and a lack of education and emotional issues (count 7; 2%). Pornography has been seen to be associated with sexual attitudes (Braun-Courville & Rojas, 2009; Tsitsika, Critselis, Kormas, Konstantoulaki, Constantopoulos, & Kafetzis, 2009), self-concept, social development, and interpersonal relationships (Mesch, 2009). Similarly, pornography use has been found to reinforce pornographic scripts of sexual behaviour and stereotyped body images (Lofgren-Martenson & Mansson, 2010). These scripts typically outline male and female roles in sex, which tend to depict females as sexual objects. This leads to peer and societal pressure on young people to engage in certain sexual behaviours.

***- Viewing more pornography will be associated with higher rates of sexual behaviour.***

The data revealed that 100% of the sample had viewed pornography and 96% reported to currently viewing pornography. The average age to first view pornography is 11 years old (11.67 years; SD= 1.84), whereas the average age to first use pornography for sexual pleasure is 13 years old (13.12 years; SD= 1.58). The mode of “current frequency viewing” was “two or more times a week”; the mode of “previous frequency viewing” was “two or more times a day”; the mode of “time spent per session” was “10-30 minutes”.

***- Viewing a particular pornography content will relate to the ‘type’ of sexual activity young people engage in.***

The type of pornography viewed did correlate, both positively and negatively with sexual coercion. “Hard-core/violent” and “Young/fantasy” pornography were both significantly associated with sexual coercion, suggesting that individuals viewing pornography of this nature are likely to be more sexually coercive with their partners. With that, participants who scored more highly on the sexual coercion scale viewed more “hard-core/violent” pornography ( $\beta=.211$ ,  $p=.001$ ) and “young/fantasy” pornography ( $\beta=.174$ ,  $p=.041$ ), but viewed less “sexual objectification” pornography ( $\beta=-.220$ ,  $p=.036$ ). The “sexual objectification” pornography category was negatively associated with sexual coercion. As such individuals who view this pornography, which contains the objectification of women, are less likely to be sexually coercive in sexual relationships. “Soft-core” pornography was not significantly associated with sexual coercion.

***- Viewing more pornography will relate to more sexual health problems, of which may include sexually transmitted infections (STIs) and experience of erectile dysfunction (ED).***

Young people did not have any more or less sexual health problems in relation to STIs whether they currently viewed pornography or currently did not. For STI's, no significant difference was discovered between viewers and non-viewers of pornography. However, qualitative data suggested viewing pornography has caused young people problems. The most prominent issues (with a count of 28; 8%) are with their sex life and/or romantic relationships. Following this, issues included as impacting beliefs and expectations of sex (count 23; 7%) and body confidence and appearance issues (count 21; 6%).

There were no significant correlations found between ED and length or frequency of viewing pornography. Eighty one per cent of participants were found to have no ED, 15 % were found to have mild ED, 2% mild-moderate ED, 1% moderate and 1% severe ED. It is worth noting that all participants had either viewed or were currently viewing pornography, and therefore these results do not account for a comparison sample of ED in people who do not view pornography. As such, the same distribution of ED problems may occur in a population who have never used pornography.

### **Limitations of the current study**

One limitation lies in the difficulty defining and gaining a population of young people. The definition of young people is varied. With other research suggesting a young person is anyone from the age of 10 years old, into early adulthood (25 years plus). The Oxford dictionary suggests a young person is “a person generally from 14 to 17 years of age.”

However, for this research project, young people referred to those aged 16 to 25 years old, yet in the systematic literature review, they were defined as those aged 15 to 25 years old. The reasoning behind the upper limit is that research suggests that the majority of people will have lost their virginity by this age. The reason behind having to change the lower limit to 16 in the research project was due to gaining consent from the participant. At the age of 16, people are able to provide fully informed consent for themselves, under this age a parent or guardian is required to provide consent. Also, as the questionnaire was posted online, it would be difficult to know for sure whether the parents or guardians of an under 16 year old had actually provided their consent. Had schools (both teachers and parents) been more open to having the questionnaire completed with their students, then a sample consisting of younger participants could have been used. This seems important given that participants reported using pornography for sexual pleasure on average from age 13, and participants reported health implications to stem from this, such as issues with romantic relationships in later life (i.e. around 21 years old). It may be useful for further research to examine the influence of pornography on sexual health and behaviour in defined aged groups – for example, adolescents and young adults.

Following this, another limitation is that the sample may not truly be representative of people aged 16 to 25, as the sample consisted predominately of students and less so of those in full-time employment or unemployment. This is due to the sample being a convenience sample, based on posting links to the online survey on social media platforms such as Facebook. As the researcher and undergraduate students who worked on the study used such platforms, it most likely was unknowingly shared to other student populations. In an attempt to sample a younger age range, the researcher

approached schools to use sixth form populations (16-18 year old). However, none of the institutions approached were willing to take part in the research due to concerns over the sensitive nature of the material.

### **Strengths of the study**

This was the first study of its kind to employ a specially-designed measurement of pornography use, sexual health, and sexual behaviour in young people, whereby not purely prevalence rates were accounted for. It is worth noting that a limitation of many previous studies includes the means of reporting pornography use was not through implementing a validated, reliable measures, but instead subjective measurements devised by the researchers. This study used a measure that may be possible to validate into a psychometric scale for sexual interests.

As the POSHI is a new tool, scales needed to be derived to tap into different sexual interests. This was achieved through using a principle axis factor analysis with oblique rotation and six scales appeared interpretable. In investigating the impact of pornography on young peoples' sexual health and behaviour, it will enable better understanding and subsequently any protective strategies to be put in place, as well as contribute to educational and health policies. As pointed out by Owens et al., (2012) such research will help develop support for young people facing risks associated with Internet pornography.

### **Contributions to policy**

Previous research has suggested that 42% of 10 to 17 year olds had viewed pornography online, with 66% of exposures being unwanted (Wolak, Mitchell, & Finkelhor, 2007).

These findings support the NSPCC's (2015) statement that pornography use in young people needs reviewing and that findings are out-dated and needs revisiting. However, what is worth noting is that two thirds of young people who have viewed pornography have not actively sought it out. Pornography has been suggested to negatively impact on sexual education – it is significantly associated with sexual attitudes and behaviours connected to sexually transmitted infections (STIs) (Brown & L'Engle, 2009; O'Hara, Gibbons, Gerrand, Li, & Sargent, 2013; Peter & Valkenburg, 2008; Ybarra, Mitchell, Hamburger, Diener-West & Leaf, 2011). On the other hand, some research has reported no significant correlations between pornography use and attitudes towards safe sex (Morrison et al., 2004). The results from this study can further inform policies and education of young people's sexual health and behaviour.

### **Contribution to clinical practice**

This research can support clinical practice as the POSHI can be developed into a reliable psychometric tool for measuring sexual interests, pornography use, and sexual health issues in young people. Having a standardised questionnaire specifically for young people would be beneficial for clinical use as opposed to using adult measures, for example the multiphasic sex inventory being used in youth sex offender populations. Research would also benefit from a single standardised measure for use over time and place, so that different researchers are not using different measures.



## **Conclusion**

As is displayed in the demographic results, this study produced data that is similar to previous studies on pornography use in young people, and the interactions this can have with their sexual health and behaviour. However, where this study differs, is that it was able to consider a vast array of pornography categories – 50 in total through using a thematic analysis on the most widely searched topics. From this, pornography interest scales were identified – again, differing from previous research. Therefore, it is possible to develop a psychometric scale for sexual interest as a direct result of this research, which has not previously been achieved through earlier studies.

## **Future research**

One way forward would be to gain a sample of different ages, including children and young people. However, this would likely be faced with ethical concerns around speaking to children and young people of a certain age about pornography use. Particularly as there may be concern that the pornography categories could be exposing children and young people to such information, which they are not currently aware of. Another way forward is by completing cross-cultural studies, which can not only account for differences in ethnicities, but also capture cultural differences. A second study utilising the POSHI has been conducted at the University of Saarland in Germany under the guidance of the research supervisor. This research needs reviewing and considering in relation to this study, so that it provides a starting point for future research.

## **Chapter 5**

### **Discussion**

This thesis aimed to explore whether pornography use impacts upon young people's sexual health and behaviour. The majority of previous literature has focused on prevalence rates of pornography use, sexual health, and sexual behaviour, rather than investigating any potential interactions pornography can have with these.

Firstly, a systematic literature review was conducted to establish what was already known about the impact of pornography on young people; secondly, a critique of the Multiphasic Sex Inventory (MSI) was carried out, with it being important to establish a reliable way of measuring individuals' sexual behaviours and practices, with there currently being no existing measure to do this other than the MSI which is designed to measure sexual deviance; thirdly, an empirical research project was carried out on the influence of pornography on young people's sexual health and behaviour. A summary of findings for each of these chapters will be discussed below.

## **Summary of findings**

### **Chapter 2 - Systematic Literature Review**

This systematic review explored the current literature regarding the impact pornography use in young people has on their sexual behaviour and sexual health. Scoping searches, both comprehensive and general, were conducted to identify the need for the current review. The search strategy involved searching three major electronic databases, examining reference lists of included research papers, and contacting four key experts in the field. An inclusion/exclusion criteria and quality appraisal was conducted on each paper. All studies included ( $n = 6$ ) had a cross-sectional design, and were deemed good quality, with quality scores ranging from 57% to 82%.

For the six studies that met the inclusion criteria (Bacak & Stulhofer, 2011; Hald, et al., 2013; Morrison, et al., 2004; Raheel, et al., 2012; Sun, et al., 2013; Wang, et al., 2013), a narrative data synthesis was produced. This highlighted that pornography use in young people was seen to occur more in males than females, and material was predominantly accessed online. No studies highlighted the sexual health issues young people were encountering; instead focus was on the attitudes young people held regarding safe sex and HIV/AIDS. Findings between viewing pornography and subsequent attitudes were inconsistent – one study suggested there were both positive and negative influences dependent on gender (Sun, et al., 2013), whereas another found no significant associations (Morrison, et al., 2004). All studies that examined the influence of pornography use on sexual behaviour found a positive association between the two variables. Although, similar to findings regarding sexual health, two studies also produced results indicating that influence was dependent on gender.

One study, with a large sample size ( $n = 4,600$ ), identified hard-core pornography as being the most viewed type, with soft-core viewing, the second most common, dropping to nearly half (Hald, et al., 2013). In relation to all three variables, Bacak & Stulhofer (2011) found that viewing pornography was positively associated with masturbation in young females. Research suggests masturbation has sexual health-related benefits (Abramson & Pinkerton, 2002; Coleman, 2003), including an educational purpose (Heiman & LoPiccolo, 1988; Wincze & Carey, 2001).

Measurement of pornography use primarily focused on frequency of use, rather than content. Only one study included a description of the types of pornography young males and females watched, however, these were not specifically compared with young

people's sexual health or sexual behaviour (Hald, et al., 2013). Investigating the impact of pornography use as a whole may be missing important aspects relating to the content of the pornography and specific sexual interests – for example, hard-core pornography use may have different effects on sexual health and behaviour than viewing soft-core pornography. Hard-core pornography is explicit in nature, whereas soft-core is more suggestible. As such, explicit acts are depicted as well as unsafe practice in hard-core pornography. Therefore, in line with social learning theory (Bandura, 1977), young people could copy what they see and attempt sexual acts whilst simultaneously lacking the necessary understanding and knowledge around them, and also engage in unsafe sex such as not using condoms.

The type of media viewed, such as video or still image, was not examined either. Frequency of consumption was examined in all of the studies included in the review, thus suggesting it is the quantity of pornography viewed, as opposed to the type of pornography viewed that may be associated with sexual health and sexual behaviour. A limitation to this strategy however, is that not assessing and categorising pornography type may influence findings and their interpretation and not allow for studies to be compared in terms of population norms. For example, regarding sexual health, many studies were related to HIV/AIDS knowledge, and some condom use. If the influence of sexual health was not categorised, and encompassed sexual health as a whole, results may have been biased and would not have been comparable as they address very different issues.

In summary, the results showed a pattern of significant positive association between sexual behaviour and pornography consumption, with males generally having viewed

more than females. However, associations between sexual health attitudes and pornography use were limited and equivocal. As all studies adopted a cross-sectional design, this limited the ability to draw causal inferences from findings. Future research will need to consider methodological limitations found in this review – mainly the measures used to assess pornography use, sexual behaviour, and sexual health, and comparing these to population norms. This would better allow for associations to be verified. In addition, research should focus on actual sexual health issues associated with pornography use, as opposed to attitudes. Further work on measures of sexual health also needs to be considered, due to the lack of a standardised measure used in these studies.

### **Chapter 3 - Critique of the Multiphasic Sex Inventory**

A review of the Multiphasic Sex Inventory (MSI) was chosen for this thesis as it is a widely used tool developed for adults, but is used within young people's settings. There is no assessment tool for sexual interests and deviance in young people, and validated standardised measures for any population are generally lacking. Due to the limited measures of sexual deviance at the time, Nichols and Molinder (1984) devised the Multiphasic Sex Inventory (MSI) to measure sexual deviance and other sexual characteristics of sex offenders. The tool was first used in conjunction with the Minnesota Multiphasic Personality Inventory (MMPI) in 1977, which itself had scales of sexual deviance. However, it was further developed into a standalone tool in 1983. The MSI is now one of the most widely used psychometric assessments of psychosexual characteristics in sexual offenders. It is used within various settings, and there is a heavy reliance of it for measuring progress after Sex Offender Treatment Programmes (Simkins, Ward, Bowman, & Rinck, 1989). The MSI is primarily used to

identify treatment need and assess change in sex offenders, however, it has also been suggested to have risk assessment properties.

The tool is quick, easy, and flexible to administer to large samples, allowing for a vast amount of quantitative data to be produced. The MSI is one of the few psychometric assessments that is a reliable and accurate measure of psychosexual functioning (Craig & Beech, 2008). It is suggested to be a moderately to highly reliable tool, however there may be need for further exploration of its reliability and validity (Kalichman, et al., 1992).

Although it is so widely used, there are limitations to the tools application to other samples, as highlighted by Dowling *et al.*, (2000). When using the MSI with an Australian sample, issues were raised on the applicability of the normative sample. This lead to the suggestion that clinicians needed to apply caution when using the MSI and interpreting results. It would be useful to review if other countries have similar problems with the MSI normative sample, given it is used across multiple countries (Beech et al., 1999). It is worth considering whether the MSI can appropriately be applied to young people, without issues, or whether a new measure would need devising.

#### **Chapter 4 - Empirical research study**

Previous research has investigated the impact of pornography on adolescents' attitudes (Braun-Courville & Rojas, 2009; Tsitsika, et al., 2009), sexual behaviours (Alexy, Burgess, & Prentky, 2009; Haggstrom-Nordin et al., 2006), self-concept, social development, and interpersonal relationships (Mesch, 2009). It has also been suggested

that pornography reinforces a “pornographic script” for gender roles, body type and sexual activity (Lofgren-Martenson & Mansson, 2010), subsequently putting pressure on young people to engage in particular sexual activity. However, it has not been investigated if pornography specifically normalises particular adolescent sexual behaviour, such as anal sex. In investigating the association between pornography on young peoples’ sexual health and behaviour, it enabled better understanding and subsequently any protective strategies to be put in place, as well as contribute to educational and health policies.

Participants were young males and females aged 16 to 25. A thematic analysis of content categories contained within a leading free access pornography website (i.e. Pornhub) identified the 50 largest categories based on the volume of available videos. This was incorporated into a questionnaire designed to gain insight into young people’s pornography use, sexual health, and sexual behaviours.

The analysis of the data compared participants’ responses to sexual interests with health experiences. Sexual interest scales were developed using PCA, and these were identified to be: “hard-core/violent”, “soft-core”, “young/fantasy”, and “sexual objectification”. Further analysis of the data suggested potential risks associated with young people viewing pornography, in particular concerning their sexual health.

The data revealed that 100% of the sample had viewed pornography and 96% reported to currently viewing pornography. The average age to first view pornography was 11 years old, whereas the average age to first use pornography for sexual pleasure was 13 years old. This fits in with Martellozzo, et al.’s (2016) finding that 94% of young people



first viewed pornography the age of 14 years. It was evidenced that males were significantly more likely to view pornography than females, which fits in with previous literature (Hald, Seaman, & Linz, 2013; Hald, Smolenski, & Rosser, 2013; Martellozzo, et al., 2016; Sun, et al., 2013; Wright, 2013). There was a positive correlation between pornography consumption and oral sex, anal sex, sex toy use, and bondage use. There was no significant difference between current viewers and current non-viewers of pornography and STI's. This differs from previous research that suggests a link between pornography use and STI's (Brown & L'Engle, 2009; O'Hara, Gibbons, Gerrand, Li, & Sargent, 2013).

Using the four scales produced from the PCA, a regression analysis was conducted in order to examine the variables that most predicted sexual coercion. The correlations between total sexual coercion scores and the scales ("hard-core/violent", "young/fantasy", "sexual objectification", and "soft-core") were positively correlated. "Hard-core/violent" and "Young/fantasy" pornography were both significant predictors of sexual coercion, suggesting that individuals viewing pornography of this nature were likely to be more sexually coercive with their partners. With that, participants who scored more highly on the sexual coercion scale viewed more "hard-core/violent" pornography and "young/fantasy" pornography, but viewed less "sexual objectification" pornography. The "sexual objectification" pornography category was negatively associated with sexual coercion. As such individuals who viewed this pornography, which contained the objectification of women, were less likely to be sexually coercive in sexual relationships.

Participants were asked whether they believed viewing pornography had had any

particular negative consequences for them. Their responses were analysed for particular themes. Findings suggested that the most prominent issues (with a count of 28) were with their sex life and/or romantic relationships. Following this, issues such as impacting their beliefs and expectations of sex (count 23) and body confidence and appearance issues (count 21) were also relatively high.

Where this study differs from others (e.g. Bacak & Stulhofer, 2011; Hald, et al., 2013; Morrison, et al., 2004; Raheel, et al., 2012; Sun, et al., 2013; Wang, et al., 2013), is that it was able to consider a vast array of pornography categories – 50 in total, through using a thematic analysis on the most widely searched topics. From this, pornography interest scales were identified through a principal component analysis (PCA) – which largely differs from previous research. Ogas and Goddam (2011) were able to provide information on what adults found sexually arousing based on pornography viewed, however scales of sexual interest were not developed from this, instead they kept the pornography categories as interests. From the development of sexual interest scales, it is possible to develop a psychometric scale for sexual interest, which has not previously been achieved through earlier studies.

## **Implications**

### **Education**

There is some suggestion that pornography acts as a form of sexual education for young people, but that it can impact upon their sexual development. In particular, pornography is suggested to provide a “sexual script”, which can impact on the expectations of sex (Brown & L’Engle, 2009; Löfgren-Mårtenson & Månsson, 2010; Morgan, 2011; Sun et al., 2016). However, there is also research to support pornography being a means of

educating young people about biological facts, bodily functions, sexual acts, techniques and positions, and that sex is a normal and healthy aspect of adult life (Allen, 2006; Arrington-Sanders et al., 2015; Häggström-Nordin et al., 2006; Hare et al., 2014; Löfgren-Mårtenson & Månsson, 2010; Martellozzo et al., 2016; McKee, 2010; Romito & Beltramini, 2011; Rothman et al., 2015; Smith, 2013; Tomson et al., 2014). Self-confidence can also be seen to develop with an increased knowledge about sexuality (Sabina, Wolak, & Finkelhor, 2008). Minority young people, whether by ethnicity or sexual orientation, are suggested to use pornography more so than the majority as sexual education, and find beneficial effects from this (Arrington-Sanders et al., 2015; Brown & L'Engle, 2009; Harper et al., 2015; Kubicek et al., 2010; Kvalem, Traeen,<sup>[1]</sup><sub>[SEP]</sub> & Ianta , 2016; McCormack & Wignall, 2016; McNair, 2013; Peter & Valkenburg, 2011c; Tomson et al., 2014). For example, research has suggested that queer representations in pornography have helped young people in accepting their own queer sexuality (McCormack & Wignall, 2016; Tomson et al., 2014).

Sexual education is largely provided in a de-sexualised manner (Allen, 2006; Löfgren-Mårtenson & Månsson, 2010; Smith, 2013), in that it factually considers anatomy and the physical act of sex, as opposed to including sexuality and emotions. However, The United Nations Population Fund (UNFPA; 2016) expressed that comprehensive sexuality education should enable young people to protect their health, wellbeing, and dignity. This program includes human rights principles, and encompasses gender equality and enables empowerment of young people. This sex education program states that information should be age-appropriate and enable for understanding around development for that age group. It also promotes engaging parents and caregivers, as well as the wider community in order to support healthy sexual development (UNFPA,

2016). This form of best practice for sexual education can be seen in the Netherlands and Sweden (Quadara, El-Murr, & Latham, 2017).

Young people's use of pornography has been highlighted as an issue for governments (Werrett, 2010; Valcke, De Wever, Van Keer, & Schellens 2011; Petley, 2014). Interventions have been established globally due to the potential harms related with pornography use in young people (Quadara, El-Murr, & Latham, 2017). Such interventions aim to protect young people and promote healthy sexual development (Chang, 2010; Laouris, Aristodemou, & Fountana, 2011; Jones, Thom, Davoren, & Barrie, 2013). In particular, the UK government introduced filter schemes in 2016 to enable protection from some websites, which would not have been achievable without Internet providers being involved (Leitch & Warren, 2015; Parliament of the UK, 2016). Similarly, legislations and guidelines are in place, and are accessible to Internet providers and social media websites, to reduce the likelihood of unwanted exposure to pornography (Levin, 2010; De Haan,<sup>[1]</sup><sub>SEP</sub> Van der Hof, Bekkers, & Pijpers, 2013; Newman & Bach, 2004; Sarabdeen & De-Miguel-Molina, 2010). However, there is debate as to whether filter schemes infringe on human rights, and limits peoples ability to search particular contents online, which may relate to sexuality, sexual health, and wellbeing (Leitch & Warren, 2015). Therefore consideration needs to be made as to whether protecting children from potentially harmful unwanted exposure to pornography outweighs the human rights of people's freedom to search online. It is also worth noting that there is yet to be an evaluation of the effects of filter schemes (Quadara, El-Murr, & Latham, 2017). As such, the proposal of parental restriction on Internet devices is likely to meet similar concerns around human rights.

Currently there is a lack of education for sex and pornography in school, which generally leaves parents to tackle this issue with their children, which may or may not occur (Sifferlin, 2019). There may be an argument that it is the right of the parent to educate their child about sexual matters, however, following the results of this thesis, it is clear that children as young as 10 are viewing pornography, and those at the age of 13 are using it for sexual pleasure, so it is likely the case that parents would not think or perhaps not want to broach this subject with children of such a young age. For children and younger people, particularly those who are unaware of or uninterested in sex are likely to be distressed if exposed to pornography (Green et al., 2013; Mitchell, et al. 2007). It is unclear whether parents are aware of this data, and therefore may miss the opportunity to talk to their children in a timely manner. Instead, they may be discussing matters after these young people have already been viewing pornography for some time and have been impacted by what they have viewed. As such, it is suggested that school is an ideal environment in which to address sexual matters, including pornography, with young people. Having a set curriculum ensures consistency across teaching and that all young people gain the same learning.

Research has identified that education around pornography needs to include topics on mental health and wellbeing, especially as pornography use and exposure is associated with symptoms of depression in young people (Peter & Valkenburg, 2006a; Wolak, Mitchell & Finkelhor, 2007; Ybarra & Mitchell, 2005). Compulsive use should also be covered, as young people who experience lower psychological wellbeing, lower self-esteem, and symptoms of depression can develop symptoms of compulsive pornography use (Doornwaard, van den Eijnden, Baams, Vanwesenbeeck, & ter Bogt 2016). Similarly, those who use pornography as a means of escapism, distraction, or to

alleviate negative feelings, can develop symptoms of compulsive pornography use (Wery & Billieux, 2015).

The means of educating young people on a potentially sensitive topic is contentious. It is likely that a set curriculum in schools would be met with protests from ethical, moral, and religious stand points. A specific example of this occurred outside a school in Nottingham in 2019, where the general public protested against lessons on sex education and LGBT+ matters (Independent, 2019). Although appropriate education into sex and pornography is vital for the development of young people, there is the concern that such education could be provided to some who are uninterested in or unaware of sex, and this could cause them distress (Green et al., 2013; Mitchell, et al. 2007). This ethical issue is likely to outweigh the need of education to the many.

## **Future Directions**

### **Psychometric tool development**

There is a lack of standardised measure for sexual behaviours and interests in young people. As such, this may have led to the contradictory findings in the literature – all researchers were using a different, potentially non-validated and unreliable measure. This thesis aimed to address this deficit. The current research study used a measure that may be possible to validate into a psychometric scale for sexual interests. Further studies need to be conducted using this new instrument, to test for its validity. As a second study utilising the POSHI has been conducted at the University of Saarland in Germany under the guidance of the research supervisor, this will allow for both sets of data to be used to validate the POSHI and develop the POSHI II.

Developing a standardised measure would also allow for a regular systematic survey to be carried out, which would enable changes in young people's sexual behaviour and interests to be tracked over time. With this data, 'norms' would be able to be identified, and therefore sexual education could be tailored around these. Overall, better supporting the health of young people.

## References

- Abelee, M. V., Campbell, S. W., Eggermont, S., & Roe, K. (2014) Sexting, mobile porn use, and peer group dynamics: boys' and girls' self-perceived popularity, need for popularity, and perceived peer pressure. *Media Psychology*, 17, 6–33.
- Abramson, P. R., & Pinkerton, S. D. (2002). *With pleasure: Thoughts on the nature of human sexuality*. Oxford, UK: Oxford University Press.
- Adhikari, R., & Tamang, J. (2009). Premarital sexual behavior among male college students of Kathmandu, Nepal. *BMC Public Health*, 9, 241.
- Albury, K., & Crawford, K. (2012). Sexting, consent and young people's ethics: Beyond Megan's Story *Continuum: Journal of Media & Cultural Studies*, 26(3), 463–473.
- Alexy, E. M., Burgess, A. W., & Prentky, R. A. (2009). Pornography use as a risk marker for an aggressive pattern of behavior among sexually reactive children and adolescents. *Journal of the American Psychiatric Nurses Association*, 42, 442-453.
- Allen, L. (2006). "Looking at the real thing": Young men, pornography, and sexuality education. *Discourse: Studies in the Cultural Politics of Education*, 27, 69–83.
- Arrington-Sanders, R., Harper, G.W., Morgan, A., Ogunbajo, A., Trent, M., & Fortenberry, J. D. (2015). The role of sexually explicit material in the sexual development of same-sex-attracted black adolescent males. *Archives of Sexual Behavior*, 44(3), 597–608.
- Bacak, V., & Stulhofer, A. (2011). Masturbation among sexually active young women in Croatia: Associations with religiosity and pornography use. *International Journal of Sexual Health*, 23(4), 248-257.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.



- Beech, A. R., Fisher, D. & Beckett, R. C. (1999). *An Evaluation of the Prison Sex Offender Treatment Programme*. UK Home Office Occasional Report. Home Office Publications Unit, 50 Queen Anne's Gate, London, SW1H 9AT, England. Available electronically from:  
[www.homeoffice.gov.uk/rds/pdfs/occ-step3.pdf](http://www.homeoffice.gov.uk/rds/pdfs/occ-step3.pdf)
- Beggan, J. K., & Allison, S. T. (2003). "What Sort of Man Reads *Playboy*?" the Self-Reported Influence of *Playboy* on the Construction of Masculinity. *The Journal of Men's Studies*, 11, 189-206.
- Bejin, A. (1996). Female masturbation in France: Estimation and analysis of an underreported practice. In M. Bozon & H. Leridon (Eds.), *Sexuality and the social sciences: A French survey on sexual behavior*, 253–264. Dartmouth, UK: Aldershot.
- Bernard, G., Fuller, A., Robbins, L., & Shaw, T. (1989). *The child molester*. New York: Brunner/Mazel.
- Beyens, I., Vandenbosch, S., & Eggermont, L. (2014). Early adolescent boys' exposure to internet pornography: relationships to pubertal timing, sensation seeking, and academic performance *The Journal of Early Adolescence*, 35(8), 1045–1068.
- Bleakley, A., Hennessy, M., & Fishbein, M. (2011). A model of adolescents' seeking of sexual content in their media choices *The Journal of Sex Research*, 48(4), 309–315.
- Bonino, S., Ciairano, S., Rabaglietti, E., & Cattellino, E. (2006). Use of pornography and self-reported engagement in sexual violence among adolescents *European Journal of Developmental Psychology*, 3(3), 265–288.

- Braun-Courville, D. K., & Rojas, M. (2009). Exposure to sexually explicit websites and adolescent sexual attitudes and behaviors. *Journal of Adolescent Health, 45*(2), 156–162.
- Breakwell, G. M., & Fife-Schaw, C. (1992). Sexual activities and preference in a United Kingdom sample of 16 to 20-year-olds. *Archives of Sexual Behaviour, 21*(3), 271-293.
- Bridges, A. J., Wosnitzer, R., Scharrer, E., Sun, C., & Liberman, R. (2010) Aggression and sexual behaviour in best-selling pornography videos: A content analysis update *Violence Against Women, 16*(10), 1065–1085.
- Brown, J. D., & L'Engle, K. L. (2009). X-Rated sexual attitudes and behaviors associated with US early adolescents' exposure to sexually explicit media. *Communication Research, 36*, 129–51.
- Chang, C. (2010). Internet safety survey: who will protect the children? *Berkeley Technology Law Journal, 25*(1), 501–527.
- Chinsembu, K. C., Siziya, S., Muula, A. S. et al. Prevalence and social correlates of sexual intercourse among school-going adolescents in Namibia. *SAHARA Journal, 5*(3), 129–35.
- Clark, M. & Grier, P. E. (1995). Using the multiphasic sex inventory with child molesters. *Psychological Report, 77*, 623-625.
- Clarke, A. K., & Stermac, L. (2011). The influence of stereotypical beliefs, participant gender, and survivor weight on sexual assault response. *Journal of Interpersonal Violence, 26*(11), 2285–2302.
- Cohen, A. D., Farley, T. A., Taylor, S. N. et al. (2002). When and where do youths have sex? The potential role of adult supervision. *Pediatrics, 110*, 66.
- Coleman, E. (2003). Masturbation as a means of achieving sexual health. *Journal of*

- Psychology & Human Sexuality*, 14(2), 5–16.
- Cooper, K., Quayle, E., Jonsson, L., & Svedin, C.G. (2016). Adolescents and self-taken sexual images: A review of the literature. *Computers in Human Behaviour*, 55, 706–716.
- Crabbe, M. (2016). Young people need to hear about porn before they see it. Retrieved from [www.huffingtonpost.com.au/maree-crabbe/we-need-to-talk-to-our-kids-about-porn](http://www.huffingtonpost.com.au/maree-crabbe/we-need-to-talk-to-our-kids-about-porn).
- Craig, L. A. & Beech, A. (2008). Psychometric Assessment of Sexual Deviance. In A. Beech, L. Craig, & K. Browne (Eds.), *Assessment and Treatment of Sex Offenders: A Handbook*. John Wiley & Sons Ltd.
- Craig, L. A., Browne, K. D., Beech, A. R. & Stringer, I. (2006). Psychosexual characteristics of sexual offenders and the relationship to sexual reconviction. *Psychology, Crime and Law*, 12, 231–244.
- Craig, L. A., Thornton, D., Beech, A. R. & Browne, K. D. (2007). The relationship of statistical and psychological risk markers to sexual reconviction in child molesters. *Criminal Justice and Behavior*, 34, 314–329.
- Critical Appraisal Skills Programme (CASP), (2013). *Critical Appraisal Skills Programme: Making sense of evidence*. Retrieved from: <http://www.casp-uk.net>
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52, 281–302.
- De Haan, J., Van der Hof, S., Bekkers, W., & Pijpers, R. (2013). Self-regulation. In B. O'Neill, E. Staksrud, & S. McLaughlin (Eds.), *Towards a better Internet for children: Policy pillars, players and paradoxes* (1st ed., pp. 111–129). Goteborg: Nordicom.

- Dekker, A., & Schmidt, G. (2003). Patterns of masturbatory behavior: Changes between the sixties and the nineties. *Journal of Psychology & Human Sexuality*, 14(2), 35.
- Donat, P. L. N., & D'Emilio, J. (1992). A feminist redefinition of rape and sexual assault: Historical foundations and change. *Journal of Social Issues*, 48, 9-22.
- Doornwaard, S. M., Bickham, D. S., Rich, M., ter Bogt, T. F. M., & van den Eijnden, R. J. J. M. (2015). Adolescents' use of sexually explicit Internet material and their sexual attitudes and behavior: Parallel development and directional effects. *Developmental Psychology*, 51(10), 1476–1488.
- Doornwaard, S. M., van den Eijnden R. J., Baams, L., Vanwesenbeeck, I., & ter Bogt, T. F. (2016). Lower psychological well-being and excessive sexual interest predict symptoms of compulsive use of sexually explicit internet material among adolescent boys *Journal of Youth and Adolescence*, 45(1), 73–84.
- Dowling, N., Smith, D., Proeve, M., & Lee, J. K. P. (2000). The Multiphasic Sex Inventory: A Comparison of American and Australian Samples of Sexual Offenders. *Australian Psychologist Volume*, 35(3), 244-248.
- Dubdar, Y., & Fleeman, N. (2014). Developing my search strategy and applying inclusion criteria. In A. Boland, M. G. Cherry, & R. Dickson (Eds.). *Doing A Systematic Review: A Students' Guide*, 33-59. London: Sage
- Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics* (4<sup>th</sup> Ed.). London: Sage Publications
- Fileborn, B. (2016). Justice 2.0: Street harassment victims' use of social media and online activism as sites of informal justice. *The British Journal of Criminology*.

- Flood, M. (2009). The harms of pornography exposure among children and young people *Child Abuse Review*, 18, 384–400.
- Flood, M. (2016). *Submission 250: Harm being done to Australian children through access to pornography on the Internet*.
- Gagné, C. G. G. (2005). Improving self-report measures of non-adherence to HIV medications. *Psychology & Health*, 20(6), 803-816.
- Green, L., Brady, D., Olafsson, K., Hartley, J., & Lumby, C. (2011). *Risks and safety for Australian children on the Internet: Full findings from the AU Kids Online survey of 9–16 year olds and their parents*. Sydney: ARC Centre of Excellence for Creative Industries and Innovation.
- Guttman, L. (1968). A general nonmetric technique for finding the smallest coordinate space for a configuration of points. *Psychometrika*, 33, 469-506.
- Hackett, S. (2010). *Children behaving badly: Peer Violence between Children and Young People*. John Wiley & Sons, Ltd.
- Häggström-Nordin, E., Hanson, U., & Tydén, T. (2005). Associations between pornography consumption and sexual practices among adolescents in Sweden. *International Journal of STD & AIDS*, 16(2), 102–107.
- Häggström-Nordin, E., Sandberg, J., Hanson, U., & Tyden, T. (2006). ‘It’s everywhere!’ Young Swedish people’s thoughts and reflections about pornography. *Scandinavian Journal of Caring Sciences*, 20(4), 386–393.
- Häggström-Nordin, E., Tyden, T., Hanson, U., & Larsson, M. (2009). Experiences of and attitudes towards pornography among a group of Swedish high school students. *European Journal of Contraception Reproduction Health Care*, 14(4), 277–284.

- Hald, G. M., Kuypers, L., Adam, P. C., & de Wit, J. B. (2013). Does viewing explain doing? Assessing the association between sexually explicit materials use and sexual behaviors in a large sample of Dutch adolescents and young adults. *Journal of Sexual Medicine*, 10(12), 2986-2995.
- Hald, G. M., Seaman, C., & Linz, D. (2013). Sexuality and pornography. In: Tolman D, Diamond L (Editors-in-Chief), Bauermeister J, George W, Pfaus J, Ward M (Associate Editors), eds. *APA handbook of sexuality and psychology: Vol. 2. Contextual approaches*. Washington, DC: American Psychological Association.
- Hald, G. M., Smolenski, D., & Rosser, B. R. (2013). Perceived effects of sexual explicit media among men who have sex with men and psychometric properties of the pornography consumption effect scale (PCES). *Journal of Sexual Medicine*, 10, 757–67.
- Hald, G.M. (2006). Gender differences in pornography consumption among young heterosexual Danish adults. *Archive of Sexual Behaviour*, 35, 577–85.
- Hare, K., Gahagan, J., Jackson, L., & Steenbeek, A. (2014). Perspectives on “pornography”: Exploring sexually explicit Internet movies’ influences on Canadian young adults’ holistic sexual health. *The Canadian Journal of Human Sexuality*, 23(3), 148–158.
- Harper, G. W., Serrano, P. A., Bruce, D., & Bauermeister, J. A. (2015). The Internet’s multiple roles in facilitating the sexual orientation identity development of gay and bisexual male adolescents *American Journal of Mens Health*, 10(5), 359-376.
- Heiman, J. R., & LoPiccolo, J. (1988). *Becoming orgasmic: A sexual and personal growth program for women* (2nd ed.). New York, NY: Prentice Hall.

- Hogarth, H., & Ingham, R. (2009). Masturbation among young women and associations with sexual health: An exploratory study. *Journal of Sex Research, 46*(6), 558–567.
- Horvath, M.A.H., Alys, L., Massey, K., Pina, A., Scally, M., & Adler, J.R. (2013). *“Basically ... porn is everywhere”: A Rapid Evidence Assessment on the Effects that Access and Exposure to Pornography has on Children and Young People. Project Report* London: Office of the Children’s Commissioner for England.
- Independent. (2019). LGBT+ protests: Demonstrations spread to primary school in Nottingham. Retrieved from <https://www.independent.co.uk/news/education/education-news/lgbt-protests-nottingham-fernwood-primary-school-birmingham-amir-ahmed-a9016741.html>
- Jaffer, Y. A., Al Ajim M., & Alouhaishi, K. (2006). Knowledge, attitude and practices of secondary school pupils in Oman: II. Reproductive health. *Eastern Mediterranean Health Journal, 12*, 50–60.
- Jones, S. C., Thom, J. A., Davoren, S., & Barrie, L. (2013). Internet filters and entry pages do not protect children from online alcohol marketing. *Journal of Public Health Policy, 35*(1), 75–90.
- Jozsa, B. & Jozsa, M. (1980). *Dirty Books, Dirty Films and Dirty Data*. In L. Lederer (Ed.), *Take Back the Night: Women on Pornography* (204-217). New York: Morrow.
- Kagerer, S., Klucken, T., Wehrum, S., Zimmermann, M., Schienle, A., Walter, B., Vaitl, D., & Stark, R. (2011). Neural activation toward erotic stimuli in homosexual and heterosexual males. *Journal of Sexual Medicine, 8*, 3132–43.

- Kaiser Family Foundation, American Social Health Association. *Sexually Transmitted Diseases in America: How Many Cases and at What Cost?* 1998. CA: KFF and ASHA.
- Kalichman, S. C., Henderson, M. C., Shealy, L. S. & Dwyer, M. (1992). Psychometric properties of the Multiphasic Sex Inventory in assessing sex offenders. *Criminal Justice and Behavior*, 19, 384– 396.
- Kalmus, E., & Beech, A. R. (2005). Forensic assessment of sexual interest: A review. *Aggression and Violent Behavior*, 10, 193–217.
- Kaplan, H. S. (1974). *The new sex therapy*. New York: Brunner/Mazel.
- Katz, S. J., Lee, T., & Byrne, S. (2015). Predicting parent–child differences in perceptions of how children use the Internet for help with homework, identity development and health information. *Journal of Broadcasting & Electronic Media*, 59(4), 574–602.
- Khan, K, S., Dinnes, J., & Kleijnen, J. (2001). Systematic reviews to evaluate diagnostic tests. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 95(1), 6-11.
- Kinsey Institute (2016). Data from Alfred Kinsey Studies. Retrieved from: <http://www.kinseyinstitute.org/research/ak-data.html>
- Kinsey, A, C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual Behavior in the Human Male*. Philadelphia: Saunders.
- Kinsey, A, C., Pomeroy, W. B., Martin, C. E., & Gebhard, P. H. (1998). *Sexual Behavior in the Human Female*. Philadelphia: Saunders. (Original work published in 1953).



- Kjellgren, C., Priebe, G., Svedin, C. G., & Långström, N. (2010). Sexually coercive behavior in male youth: population survey of general and specific risk factors. *Archives of Sexual Behavior*, 39(5), 1161–1169.
- Kline, P. (1986). *A handbook of test construction: Introduction to psychometric design*. New York: Methuen & Co.
- Knight, R. H. (2003). How Alfred C. Kinsey's Sex Studies Have Harmed Women and Children. Retrieved from: <http://www.cwfa.org/how-alfred-c-kinseys-sex-studies-have-harmed-women-and-children/>
- Kontula, O., & Haavio-Mannila, E. (2003). Masturbation in a generational perspective. *Journal of Psychology & Human Sexuality*, 14(2), 49–83.
- Kraus, S.W., & Russell, B. (2008). Early sexual experiences: the role of Internet access and sexually explicit material. *CyberPsychology & Behavior*, 11(2), 162–168.
- Kubicek, K., Beyer, W. J., Weiss, G., Iverson, E., Kipke, & M. D. (2010). In the dark: young men's stories of sexual initiation in the absence of relevant sexual health information *Health Education and Behaviour*, 37(2), 243–263
- Kühn, S., & Gallinat, J. (2011). A quantitative meta-analysis on cueinduced male sexual arousal. *Journal of Sexual Medicine*, 8, 2269–75.
- Kuzman, M., Simetin, I. P., & Franelic, I. P. (2007). Early sexual intercourse and risk factors in Croatian adolescents. *Collegium Antropologicum*, 31(2), 121–30.
- Kvalem, I. L., Traeen, B., & Ianta, A. (2016). Internet pornography use, body ideals, and sexual self-esteem in Norwegian gay and bisexual men. *Journal of Homosexuality*, 63(4), 522–540.

- Laouris, Y., Aristodemou, E., & Fountana, M. (2011). Teaching Internet safety in virtual Environments. *International Journal of Media and Cultural Politics*, 7(1), 67–76.
- Lee, M., & Crofts, T. (2015). Gender, pressure, coercion and pleasure: Untangling motivations for sexting between young people *British Journal of Criminology*, 55, 454–473.
- Lee, M., Crofts, T., Salter, M., Milivojevic, S., & McGovern, A. (2013). “Let’s get sexting”: Risk, power, sex and criminalisation in the moral domain ” *International Journal for Crime and Justice*, 2(1), 35–49.
- Leitch, S., & Warren, M. (2015). Applying classification controls to Internet content in Australia. *Journal of Information, Communication & Ethics*, 13(2), 829–7.
- Leitenberg, H., Detzer, M. J., & Srebnik, D. (1993). Gender differences in masturbation and the relation of masturbation experience in preadolescence and/or early adolescence to sexual behavior and sexual adjustment in young adulthood. *Archives of Sexual Behavior*, 22(2), 87–98.
- Levin, J. (2010). Internet censorship: the debate rages on. *Screen Education*, 59, 46–61.
- Lewin, B. (2000). *Sex in Sweden: On the Swedish sexual life*. Stockholm, Sweden: National Institute of Public Health.
- Livingstone, S., & Gorzig, A. (2012). “Sexting”: the exchange of sexual messages online among European youth In A Gorzig, L Haddon & S Livingstone (Eds.) *Children, Risk and Safety on the Internet* (pp. 151–164) Bristol: Polity Press.
- Livingstone, S., & Haddon, L. (2012). Theoretical framework for children’s Internet use In A Gorzig, L Haddon & S Livingstone (Eds.), *Children, risk and safety on the Internet* (pp. 1–14) Bristol: Polity Press.

- Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. (2011). *Risks and safety on the internet: the perspective of European children: full findings and policy implications from the EU Kids Online survey of 9-16 year olds and their parents in 25 countries*. EU Kids Online, Deliverable D4. EU Kids Online Network, London, UK.
- Löfgren-Mårtenson, L. & Månsson, S.A. (2010). Lust, love, and life: A qualitative study of Swedish adolescents' perceptions and experiences with pornography. *The Journal of Sex Research*, 47(6), 568–579.
- Luder, M. T., Pittet, I., Berchtold, A., Akre, C., Michaud, P., Suris, J. C. (2011). Associations between online pornography and sexual behavior among adolescents: Myth or reality? *Archive of Sexual Behaviour*, 40, 1027–35.
- Malamuth, N., & Huppert, M. (2005). Pornography and teenagers: the importance of individual differences. *Adolescent Medicine Clinics*, 16(2), 315–326.
- Martellozzo, E., Monaghan, A., Adler, J.R., Davidson, J., Leyva, R. and Horvath, M.A.H. (2016). I wasn't sure it was normal to watch it. London: NSPCC. Retrieved from: [learning.nspcc.org.uk/media/1187/mdx-nspcc-occ-pornography-report.pdf](http://learning.nspcc.org.uk/media/1187/mdx-nspcc-occ-pornography-report.pdf)
- Martino, S. C., Collins, R. L., Elliott, M. N., Strachman, A., Kanouse, D. E., & Berry, S. H. (2006). Exposure to degrading versus nondegrading music lyrics and sexual behavior among youth. *Pediatrics*, 118(2), 430-441.
- Masters, W. H., Johnson, V. E., & Kolodny, R. C. (1988). *Masters and Johnson on sex and human loving*. Boston: Little Brown.
- Mattebo, M., Larsson, M., Tydén, T., Olsson, T., & Häggström-Nordin, E. (2012). Hercules and Barbie? Reflections on the influence of pornography and its

- spread in the media and society in groups of adolescents in Sweden. *European Journal of Contraception and Reproductive Health Care*, 17, 40–49.
- McBride, K. R., & Fortenberry, J. D. (2010). Heterosexual anal sexuality and anal sex behaviors: a review. *Journal of Sex Research*, 47(2), 123-136.
- McCary, J. L. (1972). *Sexual myths and fallacies*. New York: Van Nostrand Reinhold.
- McCormack, M., & Wignall, L. (2016). Enjoyment, exploration and education: understanding the consumption of pornography among young men with non-exclusive sexual orientations. *Sociology*, 1–17.
- McKee, A. (2010). Does pornography harm young people? *Australian Journal of Communication*, 37(1), 17–36.
- McNair, B. (2013). *Porno? Chic!: how pornography changed the world and made it a better place*. Abingdon, Oxon ; Routledge.
- Mesch, G. S. (2009). Social bonds and Internet pornographic exposure among adolescents. *Journal of Adolescence*, 32, 601-618.
- Milton Keynes Primary Care Trust. (2002). 11 questions to help you make sense of cross sectional studies. Retrieved from: descriptive/cross-sectionalstudies<https://reache.files.wordpress.com/2010/03/cross-sectional-appraisal-tool.pdf>
- Miner, M. H., Marques, J. K., Day, D. M. & Moeller, J. R. (1990). Impact of relapse prevention in treating sex offenders: Preliminary findings. *Annals of Sex Research*, 3, 165–185.
- Mitchell, K. J., Wolak, J., & Finkelhor, D. (2007). Trends in youth reports of sexual solicitations, harassment and unwanted exposure to pornography on the Internet. *Journal of Adolescent Health*, 40(2), 116–126.
- Mohammadi, M. R., Mohammad, K., Farahani, F., Farahani, K., Alikhani, S., Zare,

- M., Tehrani, F. R., Ramezankhani, A., & Alaeddini, F. (2006). Reproductive knowledge, attitudes, and behavior among adolescent males in Tehran, Iran. *International Family Planning Perspective*, 32, 35–44.
- Monahan, J. (1981). *Predicting violent behaviour: An assessment of clinical techniques*. Beverley Hills, CA: Sage Publications.
- Morgan, E. M. (2011). Associations between young adults' use of sexually explicit materials and their sexual preferences, behaviors, and satisfaction. *Journal of Sexual Medicine*, 48(6), 520–530.
- Morrison, T. G., Harriman, R., Morrison, M. A., Bearden, A., & Ellis, S. R. (2004). Correlates Of Exposure To Sexually Explicit Material Among Canadian Post-Secondary Students. *Canadian Journal of Human Sexuality*, 13(3-4), 143-156.
- Mosher, W.D., Chandra, A., & Jones, J. (2005). Sexual behavior and selected health measures: Men and women 15–44 years of age, United States, 2002. *Advance data from vital and health statistics*, 15(362), 1-55.
- Murnen, S. K., Wright, C., & Kaluzny, G. (2002). If “boys will be boys,” then girls will be victims? A meta-analytic review of the research that relates masculine ideology to sexual aggression. *Sex Roles*, 46(11), 359–375.
- Nansen, B., Chakraborty, K., Gibbs, L., MacDougall, C., & Vetere, F. (2012). Children and digital wellbeing in Australia: Online regulation, conduct and competence *Journal of Children and Media*, 6(2), 237–254.
- National Society for the Prevention of Cruelty to Children. (2016). *Online safety*. Retrieved from [www.nspcc.org.uk/preventing-abuse/keeping-children-safe/online-safety](http://www.nspcc.org.uk/preventing-abuse/keeping-children-safe/online-safety)
- Newman, A., & Bach, D. (2004). Self-regulatory trajectories in the shadow of public power: resolving digital dilemmas in Europe and the United States.

*Governance: An International Journal of Policy, Administration, and Institutions*, 17(3), 387–413.

NHLBI (National Heart, Lung, and Blood institute). (2014) Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies. Retrieved from: <https://www.nhlbi.nih.gov/health-pro/guidelines/in-develop/cardiovascular-risk-reduction/tools/cohort>

Nichols, H. R. & Molinder, I. (2000). *Multiphasic Sex Inventory-II* (Version 2). Available from: Nichols and Molinder, 437 Bowes Drive, Tacoma, WA 98466, USA.

Nichols, H. R., & Molinder, I. (2010) Nichols and Molinder Assessments, Inc. Experts in Sex Offender Assessment and Treatment. Retrieved from <http://www.nicholsandmolinder.com/index.php>

Nichols, H., & Molinder, I. (1984). *Manual for the Multiphasic Sex Inventory*. Tacoma, WA: Nichols & Molinder Assessments.

Nielsen, S., Paasonen, S., & Spisak, S. (2015). “Pervy role-play and such”: girls’ experiences of sexual messaging online. *Sex Education*, 15(5), 472–485.

NSPCC. (2015). ChildLine porn campaign confronts issue of young people and porn Retrieved from: <http://www.nspcc.org.uk/fighting-for-childhood/news-opinion/sue-minto-we-cannot-shy-away-talking-about-porn/>

O’Connor, D., Green, S., & Higgins, J. P. T. (2008). Defining the review questions and developing criteria for including studies. In J. P. T. Higgins, & S. Green (Eds.), *Cochrane Handbook for Systematic Reviews of Interventions*.

O’Hara, R. E., Gibbons, F. X., Gerrand, M., Li, Z., & Sargent, J. D. (2013). Greater exposure to sexual content in popular movies predicts earlier sexual debut and increased sexual risk taking. *Psychological Science*, 23, 984–993.

- Ofcom (2015). *Children and parents: Media use and attitudes report*. Online Ofcom
- Ogas, O & Goddam, S. (2011). *A billion wicked thoughts: What the world's largest experiment reveals about human desire*. Penguin Group (USA) Inc.
- Online Harms White Paper. (2020). Retrieved from:  
<https://www.gov.uk/government/consultations/online-harms-white-paper/public-feedback/online-harms-white-paper-initial-consultation-response>
- Owens, E. W., Behun, R. J., Manning, J. C., & Reid, R. C. (2012). The Impact of Internet Pornography on Adolescents: A Review of the Research. *Sexual Addiction & Compulsivity*, 19, 99-122.
- Paitich, D., Langevin, R., Freeman, R., Mann, K., & Handy, L. (1977). The Clark SHQ: A clinical sex history questionnaire for males. *Archives of Sexual Behavior*, 6(5), 421-436.
- Parish, W. L., Laumann, E. O., & Mojola, S. A. (2007). Sexual behavior in China: Trends and comparisons. *Population and Development Review*, 33(4), 729–756.
- Peter, J., & Valkenburg, P. M. (2006a). Adolescents' exposure to sexually explicit material on the Internet. *Communication Research*, 33(2), 178–204.
- Peter, J., & Valkenburg, P. M. (2006b). Adolescents' exposure to sexually explicit online material and recreational attitudes toward sex. *Journal of Communication*, 56(4), 639–660.
- Peter, J., & Valkenburg, P. M. (2007). Adolescents' exposure to a sexualized media environment and their notions of women as sex objects. *Sex Roles*, 56(5), 381–395.
- Peter, J., & Valkenburg, P. M. (2008). Adolescents' exposure to sexually explicit Internet material and sexual preoccupation: A threewave panel study. *Media*

*Psychology*, 11, 207–34.

- Peter, J., & Valkenburg, P. M. (2008b). Adolescents' exposure to sexually explicit Internet material, sexual uncertainty, and attitudes toward uncommitted sexual exploration: Is there a link? *Communication Research*, 35(5), 579–601.
- Peter, J., & Valkenburg, P. M. (2009a). Adolescents' exposure to sexually explicit Internet material and notions of women as sex objects: assessing causality and underlying processes. *Journal of Communication*, 59(3), 407–433.
- Peter, J., & Valkenburg, P. M. (2009b). Adolescents' exposure to sexually explicit Internet material and sexual satisfaction: a longitudinal study. *Human Communication Research*, 35(2), 171–194.
- Peter, J., & Valkenburg, P. M. (2010a). Adolescents' use of sexually explicit Internet material and sexual uncertainty: The role of involvement and gender. *Communication Monographs*, 77(3), 357–375.
- Peter, J., & Valkenburg, P. M. (2010b). Processes underlying the effects of adolescents' use of sexually explicit Internet material: The role of perceived realism. *Communication Research*, 37(3), 375–399.
- Peter, J., & Valkenburg, P. M. (2011). The influence of sexually explicit internet material on sexual risk behavior: A comparison of adolescents and adults. *J Health Commun*, 16, 750–65.
- Peter, J., & Valkenburg, P. M. (2011c). The influence of sexually explicit Internet material on sexual risk behavior: A comparison of adolescents and adults. *Journal of Health Communication*, 16(7), 750–765.
- Peter, J., & Valkenburg, P.M. (2016). Adolescents and pornography: a review of 20 years of research *The Journal of Sex Research*, 53(4), 509–531.
- Petersen, J. L., & Hyde, J. S. (2010). A metaanalytic review of research on gender



- differences in sexuality, 1993–2007. *Psychological Bulletin*, 136(1), 21–38.
- Petley, J. (2014). The regulation of pornography on video-on-demand in the United Kingdom. *Porn Studies*, 1(3), 260–284.
- Piaget, J. (1936). *Origins of intelligence in the child*. London: Routledge & Kegan Paul.
- Pratt, R. (2015). The porn genie is out of the bottle: Understanding and responding to the impact of pornography on young people. *InPsych*, 37(2). Retrieved from [www.psychology.org.au/inpsych/2015/april/pratt](http://www.psychology.org.au/inpsych/2015/april/pratt)
- Quadara, A., El-Murr, A. & Latham, J. (2017). *The effects of pornography on children and young people: An evidence scan*. Melbourne: Australian Institute of Family Studies.
- Raheel, H., Mahmood, M. A., & BinSaeed, A. (2012). Sexual practices of young educated men: implications for further research and health education in Kingdom of Saudi Arabia (KSA). *Journal of Public Health*, 35(1), 21-26.
- Rideout, V. (2001). Generation Rx. com: how young people use the internet for health information. Menlo Park, CA: Kaiser Family Foundation.
- Rogala, C., & Tyden, T. (2003). Does pornography influence young women's sexual behavior? *Women's Health Issues*, 13, 39–43.
- Romer, D. (2010). Adolescent Risk Taking, Impulsivity, and Brain Development: Implications for Prevention. *Developmental Psychobiology*, 52(3), 263-276.
- Romito, P., & Beltramini, L. (2011). Watching pornography: gender differences, violence and victimization: An exploratory study in Italy. *Violence Against Women*, 17(10), 1313–1326.
- Rosen, R., Riley, A., Wagner, G., Osterloh, I. H., Kirkpatrick, J., & Mishra, A. (1997). The International Index of Erectile Function (IIEF): A

- multidimensional scale for assessment of erectile dysfunction. *Urology*, 49, 822-830.
- Rothman, E. F., Kaczmarzsky. C., Burke, N., Jansen, E., & Baughman, A. (2015). “Without porn ... I wouldn’t know half the things I know now”: a qualitative study of pornography use among a sample of urban, low-income, Black and Hispanic youth. *Journal of Sex Research*, 52(7), 736–746.
- Rovolis, A., & Tsaliki, L. (2012). Pornography In A Gorzig, L Haddon & S Livingstone *Children, Risk and Safety on the Internet*, 165–176. Bristol: Polity Press
- Sabina, C., Wolak, J., & Finkelhor, D. (2008). The nature and dynamics of Internet pornography exposure for youth *CyberPsychology & Behaviour*, 11(6), 691–693.
- Sarabdeen, J., & De-Miguel-Molina, M. (2010). Social network sites and protection of children: regulatory framework in Malaysia, Spain and Australia. *WSEAS Transactions on Computers*, 9(2), 134–143.
- Selikow, T. A., Ahmed, N., Flisher, A. J. et al. I am not ‘umqwayito’: a qualitative study of peer pressure and sexual risk behavior among young adolescents in Cape Town, South Africa. *Scand J Public Health*, 37(2), 107–12.
- Seme, A., & Wirtu, D. (2008). Premarital sexual practices among school adolescents in Nekemte town, East Wollega. *Ethiopian Journal of Health Development*, 22(2), 167–73.
- Seto, M. C. (2003). Psychophysiological Assessment of Paraphilic Sexual Interests. In E. Janssen (Ed.), *Proceedings of the 2003 Kinsey Institute Conference on Reproductive Psychophysiology*. Bloomington, IN: Kinsey Institute.
- Sifferlin, A. (2019). Retrieved from: <https://time.com/why-schools-cant-teach-sex-ed/>

- Simkins, L., Ward, W., Bowman, S., & Rinck, C. M. (1989). The Multiphasic Sex Inventory: Diagnosis And Prediction Of Treatment Response In Child Sexual Abusers. *Annals of Sex Research*, 2, 205-226.
- Simons, L. G., Simons R. L., Lei, M. K., & Sutton, T. E. (2012). Exposure to harsh parenting and pornography as explanations for males' sexual coercion and females' sexual victimization. *Violence and Victims*, 27(3), 378–395.
- Sinkovic, M., Stulhofer, A., & Bozic, J. (2012). Revisiting the association between pornography use and risky sexual behaviors: The role of early exposure to pornography and sexual sensation seeking. *Journal of Sex Research*, 50(7), 633-41.
- Smith, M. (2013). Youth viewing sexually explicit material online: addressing the elephant on the screen. *Sexuality Research and Social Policy*, 10(1), 62–75.
- Sorenson, S. B., & Taylor, C. A. (2005). Female aggression toward male intimate partners: An examination of social norms in a community-based sample. *Psychology of Women Quarterly*, 29, 78-96.
- Stanley, N., Beter, C., Wood, M., Aghtaie, N., Larkins, C., Lanau, A., & Overlien, C. (2016). Pornography, sexual coercion and abuse and sexting in young people's intimate relationships: a European study. *Journal of Interpersonal Violence*, 33(19), 2919–2944.
- Steeves, V. (2014b). *Young Canadians in a Wired World, Phase III: Encountering racist and sexist content online*. Ottawa: MediaSmarts.
- STROBE (Strengthening the reporting of observational studies in epidemiology). (2007). Checklist for cohort, case-control, and cross-sectional studies (combined). Retrieved from: <http://www.strobe-statement.org/?id=available-checklists>

- Stulhofer, A., Busko, V., & Landripet, I. (2010). Pornography, sexual socialization, and satisfaction among young men. *Archive of Sexual Behaviour*, 39, 168–78.
- Stulhofer, A., Landripet, I., Momcilovic, A., Matko, V., Kladaric, P., & Busko, V. (2007). Pornography and sexual satisfaction: Any relationship? In S. Knudsen, L. Lofgren-Martenson, & S. A. Mansson (Eds.), *Generation P? Youth, gender, and pornography*, 66–84. Copenhagen, Denmark: Danish University of Education Press.
- Sun, C., Bridges, A., Johnson, J. A., & Ezzell, M. B. (2016). Pornography and the male sexual script: An analysis of consumption and sexual relations. *Archives of Sexual Behaviour*, 45(4), 983–994.
- Sun, X., Liu, X., Shi, Y., Wang, Y., Wang, P., & Chang, C. (2013). Determinants of risky sexual behavior and condom use among college students in China. *AIDS Care*, 25(6), 775–783.
- ter Bogt, T. F. M., Engels, R. C. M. E., Bogers, S., & Kloosterman, M. (2010). “Shake It Baby, Shake It”: Media preferences, sexual attitudes and gender stereotypes among adolescents. *Sex Roles*, 63(11), 844–859.
- The Centres for Disease Control and Prevention (CDC) (2018). CDC Fact Sheet: Reported STDs in the United States, 2018. Retrieved from <https://www.cdc.gov/nchhstp/newsroom/docs/factsheets/STD-Trends-508.pdf>
- 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*, 49–66. New York: Routledge.
- Thorne, F. C. (1966). The sex inventory. *Journal of Clinical Psychology*, 22(4), 367–374.

- Tomson, L., Byrne, M., & Trust, Z. T. C. (2014). *He's the stud and she's the slut: Young people's attitudes to pornography, sex and relationships report*. Edinburgh: Zero Tolerance. Retrieved from [www.zerotolerance.org.uk/Projects/AttitudesResearch](http://www.zerotolerance.org.uk/Projects/AttitudesResearch)
- Traeen, B., Nilsen, T. S., & Stigum, H. (2006). Use of pornography in traditional media and on the Internet in Norway. *Journal of Sex Research*, 43, 245–54.
- Tsitsika, A., Critselis, E., Kormas, D., 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 and Behavior*, 12, 545-550.
- United Nations Population fund (UNFPA). (2016). *Comprehensive sexuality education: Overview*. Retrieved from [www.unfpa.org/comprehensive-sexuality-education](http://www.unfpa.org/comprehensive-sexuality-education)
- Valcke, M., De WEVER, B., Van Keer, H., & Schellens, T. (2011). Long-term study of safe Internet use of young children. *Computers & Education*, 57(1), 1292–1305.
- Vega, V., & Malamuth, N. M. (2007). Predicting sexual aggression: the role of pornography in the context of general and specific risk factors. *Aggressive Behaviour*, 33(2), 104-17.
- Walsh, J. (2012). *Talk soon. Talk Often: A guide for parents talking to their kids about sex*. Perth: Department of Health, Government of Western Australia.
- Wang, K. W., Wu, J. Q., Zhao, H. X., Li, Y. Y., Zhao, R., Zhou, Y., & Ji, H. L. (2013). Unmarried male migrants and sexual risk behavior: a cross-sectional study in Shanghai, China. *BMC Public Health*, 13, 1152.

- Werrett, J. (2010). Aligning cyber-world censorship with real-world censorship. *Connecticut Public Interest Law Journal*, 9(2), 357–386.
- Wery, A., & Billieux, J. (2015). Problematic cybersex: conceptualization, assessment, and treatment. *Addictive Behaviors*, 64, 238-246.
- Wickelmaier, F. (2003). *An Introduction to MDS*. Sound Quality Research Unit, Aalborg University, Denmark
- Wincze, J. P., & Carey, M. P. (2001). *Sexual dysfunction: A guide for assessment and treatment* (2nd ed.). New York, NY: Guilford Press.
- Wing, S. (1983). Unpublished study (findings may be obtained from S. Wing by writing to Western Washington State Hospital, Fort Steilacoom, WA 98494).
- Wingood, G. M., DiClemente, R. J., Harrington, K., Davies, S., Hook, E. W., & Oh, M. K. (2001) Exposure to X-rated movies and adolescents' sexual and contraceptive-related attitudes and behaviors. *Pediatrics*, 107, 1116–9.
- Wolak, J., Mitchell, K., & Finkelhor, D. (2007). Unwanted and wanted exposure to online pornography in a national sample of youth Internet users. *Pediatrics*, 119(2).
- Wosnitzer, R. J. and Bridges, A. (2007). Aggression and Sexual Behavior in Best-Selling Pornography: A Content Analysis Update. Paper presented at the annual meeting of the International Communication Association, TBA, San Francisco, CA.
- Wright, P. J. (2013). U.S. males and pornography, 1973–2010: Consumption, predictors, correlates. *Journal of Sexual Research*, 50, 60–71.
- Wright, P. J., & Randall, A. K. (2012). Internet pornography exposure and risky sexual behavior among adult males in the United States. *Computers in Human Behaviour*, 28, 1410–6.

- Ybarra, M. L., & Mitchell, K. J. (2005). Exposure to Internet pornography among children and adolescents: A national survey. *CyberPsychology and Behaviour*, 8(5), 473-486.
- Ybarra, M. L., Mitchell, K. J., Hamburger, M., Diener-West, M., & Leaf, P. J. (2011). X-rated material and perpetration of sexually aggressive behavior among children and adolescents: Is there a link? *Aggressive Behaviour*, 37, 1–18.
- Zilbergeld, B. (1980). *Male sexuality*. New York: Bentam Books.
- Zuraayk, H. (1988). A framework of ideas for development of a research agenda for the working group on reproductive health. Cairo: Population Council.

## **Appendices**

Appendix A – Search terms and syntax developed to access data on EBSCOhost and

OvidSP platforms

Appendix B – Screening and selection tool (SST)

Appendix C – List of excluded studies ( $n = 24$ )

Appendix D – Quality assessment form for cross-sectional studies

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Appendix F – Smallest Space Analysis (SSA) description and figure

Appendix G – Pornography and Sexual Health Inventory



## Appendix A

**Search terms and syntax developed to access data on ERIC (EBSCOhost platform) PsycINFO (OvidSP platform).**

### ***EBSCOhost – ERIC terms (number of hits in brackets)***

1. porn\* (527)
2. “indecent image\*” (1)
3. erotic\* (152)
4. indecency (27)
5. sexploitation (3)
6. “adult material\*” (37)
7. “adult movie\*” (3)
8. “adult film” (1)
9. hard-core (262)
10. soft-core (2)
11. “obscene material\*” (30)
12. “sexually explicit material\*” (29)
13. “sexually explicit media” (4)
14. X-rated (18)
15. provocative N3 (image OR material OR media OR video OR photo) (20)
16. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 (1,040)
17. youth\* (65,445)

18. young\* (99,088)
19. teen\* (9,889)
20. adolescen\* (69,228)
21. child\* (334,876)
22. innocen\* (652)
23. juven\* (6,374)
24. junior (44,944)
25. \*pubescent (23)
26. male\* (49,349)
27. lad\* (5,655)
28. boy\* (24,443)
29. student (737,055)
30. (16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25) N3  
year\* (19,445)
31. (16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25) N4 age\*  
(17,282)
32. 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30  
or 31 (1,009,003)
33. (sex\* OR intimate\* OR passionate\* OR sensual\* OR erotic\*) NEAR/3  
(Health\* OR infect\* OR disease\* OR condition\* OR state OR wellbeing OR  
illness\* OR sickness\* OR debilit\* OR gonorrhea or chlamydia OR syphilis  
OR HIV OR AIDS OR warts OR herpes or lice) (4,059)
34. (sex\* OR intimate\* OR passionate\* OR sensual\* OR erotic\*) NEAR/3  
(behav\* OR act\* OR conduct\* OR nature\* OR practice\* OR expression\* OR  
decenc\* OR indecen\*) (3,393)

35. 16 AND 32 AND 33 AND 34 (13)

***OvidSP – PsycINFO terms (number of hits in brackets)***

1. Porn\* (2,903)
2. “indecent image\*” (18)
3. erotic\* (4,672)
4. indecency (48)
5. sexploitation (6)
6. “adult material\*” (10)
7. “adult movie\*” (9)
8. “adult film” (23)
9. hard-core (346)
10. soft-core (30)
11. “obscene material\*” (8)
12. “obscence image\*” (1)
13. “sexually explicit material\*” (202)
14. “sexually explicit media” (60)
15. X-rated (32)
16. provocative adj2 (image OR material OR media OR video OR photo) (40)
17. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16  
(7,109 7,778)
18. young\* (219,679)
19. youth\* (82,736)
20. teen\* (20,025)

21. adolescen\* (214,945)
22. child\* (611,976)
23. innocen\* (2,720)
24. juven\* (29,959)
25. junior (22,464)
26. \$pubescent (240)
27. male\* (386,332)
28. lad\* (7250)
29. boy\* (61,418)
30. student\* (543,706)
31. (16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25) AND  
year\* (102,071)
32. (16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25) AND  
age\* (152,921)
33. 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30  
or 31 (1,603,779)
34. (sex\* OR intimate\* OR passionate\* OR sensual\* OR erotic\*) adj3 (Health\*  
OR infect\* OR disease\* OR condition\* OR state OR wellbeing OR illness\*  
OR sickness\* OR debilit\* OR gonorrhea or chlamydia OR syphilis OR HIV  
OR AIDS OR warts OR herpes or lice) (24,206)
35. (sex\* OR intimate\* OR passionate\* OR sensual\* OR erotic\*) adj3 (behav\*  
OR act\* OR conduct\* OR nature\* OR practice\* OR expression\* OR decenc\*  
OR indecen\*) (23,511)
36. 17 AND 33 AND 34 AND 35 (86)

## Appendix B

### Screening and selection tool (SST)

Reference:			
	INCLUDE	EXCLUDE	Notes
Population	<input type="checkbox"/> Aged 15-25 inclusive	<input type="checkbox"/> Aged below 15 or over 25	
Phenomena of Interest	<input type="checkbox"/> Pornography use <input type="checkbox"/> Sexual health <input type="checkbox"/> Sexual behaviour	<input type="checkbox"/> Does not directly explore two of: pornography use, sexual health, sexual behaviour	
Outcome	<input type="checkbox"/> A comparison between at least two of: pornography use; sexual behaviour; sexual health	<input type="checkbox"/> No comparison	
Publication type	<input type="checkbox"/> Journal article/research paper	<input type="checkbox"/> Book chapter, editorial, commentary, dissertation theses, or secondary studies	
Language	<input type="checkbox"/> English	<input type="checkbox"/> Any other language	
<b>Decision:</b>	<input type="checkbox"/> Include	<input type="checkbox"/> Exclude	

## Appendix C

### List of excluded studies ( $n = 24$ )

- Bale, C. (2011). Raunch or Romance? Framing and Interpreting the Relationship between Sexualized Culture and Young People's Sexual Health. *Sex Education: Sexuality, Society and Learning*, 11(3), 303-313.
- Ballester Arnal, R., & Gil Llario, M. (1994). Sexual health: I. Sexual behavior analysis in adolescents, young people, and adults in Comunidad Valenciana. *Analisis y Modificacion de Conducta*, 20(69), 111-138.
- Buchanan-Aruwafu, H. R., Maebiru, R., & Aruwafu, F. (2003). Stiki Lole: Language and the mediation of desire in Auki, Malaita, Solomon Islands. *Culture, Health & Sexuality*, 5(3), 219-235.
- Bulot, C., Leurent, B., Collier, F. (2015). Pornography sexual behavior and risk behavior at university. *Sexologies: European Journal of Sexology and Sexual Health / Revue europeenne de sexologie et de sante sexuelle*, 24(4), 187-193.
- Doornwaard, S. M., Eijnden, R. J. J. M. v. d., Overbeek, G., & Bogt, T. F. M. t. (2015). Differential Developmental Profiles of Adolescents Using Sexually Explicit Internet Material. *Journal of Sex Research*, 52(3), 269-281.
- Grudzen, C. R., Elliott, M. N., Kerndt, P. R., Schuster, M. A., Brook, R. H., & Gelberg, L. (2009). Condom use and high-risk sexual acts in adult films: a comparison of heterosexual and homosexual films. *Am J Public Health*, 99 Suppl 1, S152-156. doi: 10.2105/AJPH.2007.127035
- Grudzen, C. R., Elliott, M. N., Kerndt, P. R., Schuster, M. A., Brook, R. H., & Gelberg, L. (2009). "Condom use and male homosexual pornography": Author's response. *American Journal of Public Health*, 99(10), 1733.
- Hare, K., Gahagan, J., Jackson, L., & Steenbeek, A. (2014). Perspectives on "pornography": Exploring sexually explicit Internet movies' influences on Canadian young adults' holistic sexual health. *Canadian Journal of Human Sexuality*, 23(3), 148-158.
- He, N., Detels, R., Chen, Z., Jiang, Q., Zhu, J., Dai, Y., . . . Gui, D. (2006). Sexual Behavior among Employed Male Rural Migrants in Shanghai, China. *AIDS Education and Prevention*, 18(2), 176-186.
- Hong, Y., Li, X., Mao, R., & Stanton, B. (2007). Internet use among Chinese college students: Implications for sex education and HIV prevention. *Cyberpsychology & Behavior*, 10(2), 161-169.
- Kachur, R. E. The Internet Alert Project: spreading the word about high-risk sexual activities advertised on the Internet. *AIDS Care*, 16(8), 971-976.
- Knight, C. L. (1995). HIV prevention and heterosexual college students: The impact of video instruction on the "safer" sexual behaviors of sexually active men. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 56(1-B), 0512.
- Kubicek, K., Beyer, W. J., Weiss, G., Iverson, E., & Kipke, M. D. (2010). In the Dark: Young Men's Stories of Sexual Initiation in the Absence of Relevant Sexual Health Information. *Health Education & Behavior*, 37(2), 243-263.

- Langstrom, N., & Seto, M. C. (2006). Exhibitionistic and Voyeuristic Behavior in a Swedish National Population Survey. *Archives of Sexual Behavior*, 35(4), 427-435.
- Langstrom, N., & Zucker, K. J. (2005). Transvestic Fetishism in the General Population: Prevalence and Correlates. *Journal of Sex & Marital Therapy*, 31(2), 87-95.
- Lepper, J. (2011). YOUNG, MALE AND IRRESPONSIBLE ABOUT SEX. *Children & Young People Now (Haymarket Business Publications Ltd)*, 18-19.
- O'Sullivan, L. F. (2014). Linking Online Sexual Activities to Health Outcomes among Teens. *New Directions for Child and Adolescent Development*(144), 37-51.
- Odeyemi, K., Onajole, A., & Ogunowo, B. (2009). Sexual behavior and the influencing factors among out of school female adolescents in Mushin market, Lagos, Nigeria. *International Journal of Adolescent Medicine and Health*, 21(1), 101-109.
- Onasanya, S. A., Nicholas, I. S., & Onasanya, E. O. (2008). Influence of the Internet on the sexual health of university undergraduates in Makurdi, Nigeria. *The Nigerian Journal of Guidance & Counselling*, 13(1), 41-53.
- Rajesh, G. & Jayasree, M. (2016). Application of behaviour technology for the management of pornographic addiction among adolescent girls. *Indian Journal of Community Psychology*, 12(2), 287-292.
- Rawls, A. (1994). Self-Reported Sexual Behavior in College Students (pp. 14).
- Rios, L. F. Sexual partners and practices of young homosexuals in Rio de Janeiro. *Cadernos de Saude Publica*, 19 Suppl 2, S223-232.
- Spooner, K. and M. Vaughn (2016). Youth Sexting: A Legislative and Constitutional Analysis. *Journal of School Violence*, 15(2), 213-233.
- Sun, C., Miezan, E., Lee, N.-Y., & Shim, J. W. (2015). Korean men's pornography use, their interest in extreme pornography, and dyadic sexual relationships. *International Journal of Sexual Health*, 27(1), 16-35.

## Appendix D

### Cross-sectional quality assessment form

#### Reference:

	Yes (2)	Partly (1)	No (0)	Can't tell (0)	Comments
<b>Screening Questions</b>					
1. Did the study address a clearly focused issue? (I.e. in terms of population studied, or health measure studied e.g. risk factor, preventive behavior, outcome)					
2. Did the authors use an appropriate method to answer their question? (I.e. is a cross-sectional study an appropriate way of answering the question? Did it address the study question?)					
<b>Detailed Questions</b>					
3. Were the subjects recruited in an acceptable way? (Looking for selection bias that might compromise the generalizability of the findings. I.e. Was the sample representative of a defined population? Was everybody included who should have been included?)					



<p>4. Were the measures accurately measured to reduce bias?</p> <p>(Looking for measurement or classification bias. I.e. Did they use subjective or objective measurements? Do the measures truly reflect what you want them to (have they been validated)?)</p>					
<p>5. Were the data collected in a way that addressed the research issue?</p> <p>(I.e. Was the setting for data collection justified? Did the researcher justify the methods chosen)</p>					
<p>6. Is it clear how data were collected (e.g., interview, questionnaire, chart review)</p> <p>(I.e. Did the researcher make the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted?))</p>					
<p>7. Did the study have enough participants to minimize the play of chance?</p> <p>(I.e. Is the result precise enough to make a decision? Is there a power calculation? This will estimate how many subjects are needed to produce a reliable estimate of the measure(s) of interest)</p>					
<p>8. How are the results presented and what is the main result?</p> <p>(I.e. Are the results presented as a</p>					

proportion of people experiencing an outcome, such as risks, or as a measurement, such as mean or median differences, or as survival curves and hazards etc. How large is this size of result and how meaningful is it? Sum up the bottom-line result of the trial in one sentence)					
9. Was the data analysis sufficiently rigorous? (I.e. Is there an in-depth description of the analysis process? Is there sufficient data presented to support the findings?)					
10. Is there a clear statement of findings? (I.e. Are the findings explicit?)					
11. Are the findings discussed in relation to the original research questions?					
12. Is there adequate discussion of the evidence both for and against the researchers' arguments (I.e. Has the researcher discussed the credibility of their findings)					
13. Can the results be applied to the local population? (I.e. Are subjects in the study sufficiently different from your population to cause concern? Is your local setting likely to differ much from that of the study?)					
14. How valuable is the research?					

(I.e. does the researcher discuss the contribution the study makes to existing knowledge? (E.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature?) Have the researchers discussed whether or how the findings can be transferred to other populations?)					
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## Appendix E

### Data extraction form

General Information	
Author(s)	
Year	
Title of Study	
Journal	
Country of study	
Study Characteristics	
Study design	
Aim/objective of study	
Data collection method	
Standardisation, validity and reliability of measure	
Participant characteristics	
Number of sample	
Age range and mean of sample	
Gender of sample	
Ethnicity of sample	
Profession of sample	
Location of sample	
Recruitment procedure	
Study results	
Analysis used	
Results and significance	
Conclusions	
Quality	
Quality assessment score	

## Appendix F

### **Smallest Space Analysis (SSA) description and figure**

MDS techniques are a form of analysis that identify and define relationships between variables using geometric spacing. MDS encompasses non-parametric techniques for measures of association that do not use inter-variable correlation or covariance. The form of MDS chosen for this study was SSA (Guttman, 1968), which examines and identifies empirical relationships between variables based on the Euclidean distance between them. SSA was implemented to highlight any themes in, and define the relationships between, pornography use, sexual health, and sexual behaviour. This technique of MDS produces a matrix to represent the inter-variable correlations of proximities. The raw data inputted into MDS analyses are called proximities, and these measure the overall similarity or dissimilarity of the variables being investigated. This similarity or dissimilarity is visually represented in a spatial configuration where the proximities are represented as points, and the space between these represents the statistical similarity. There are both direct and indirect methods for deriving proximities. For this data, an indirect method, whereby numerical values are not directly assigned to the data and matrix, but rather they are instead derived from other measures, has been chosen for deriving proximities. The distances between proximities in the matrices correspond to the correlation coefficients, with a high correlation represented by a small distance, and a low correlation by a larger distance.

Below is the smallest space analysis (SSA) of data aimed to identify any trends in participants' responses to pornography use.

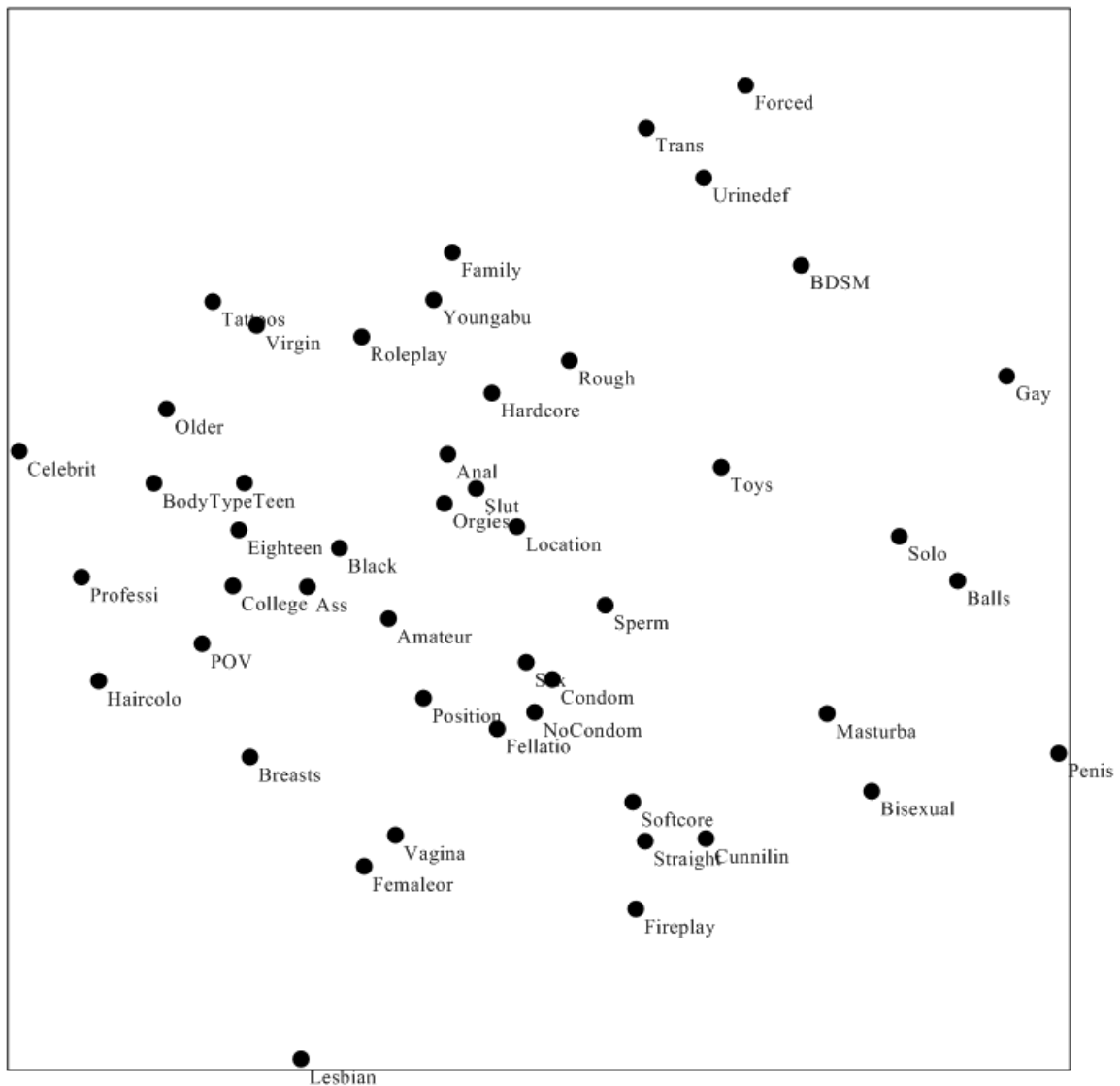


Figure 2: Smallest space analysis (SSA) of pornography categories



# UNIVERSITY OF BIRMINGHAM

## **The Influence of Viewing Pornography on Young People Information Sheet**

### **What is the study about?**

You are invited to take part in a study investigating the use of pornography in young people. The study aims to look at whether there is a link between pornography use and sexual health and behaviour.

Please read the following information carefully before deciding whether you wish to participate in this study.

### **Who can participate in the study about?**

Anyone aged 16 to 21

### **Who is carrying out the study?**

Alyshia Murgatroyd is conducting the study for a Forensic Psychology in Practice Doctorate thesis at the University of Birmingham, under the supervision of Dr Darren Bishopp, Doctoral Lecturer, Centre for Forensic and Criminological Psychology, University of Birmingham. Freya Arnold and Ashleigh Warren will also be conducting the study as part of their final year project at the University of Birmingham.

### **What does the study involve?**

You will complete an online questionnaire about your own pornography use, sexual behaviour, sexual health, sexual functioning and sexual aggression. There are no intended pros or cons to the individual completing this questionnaire, and all answers are anonymous and confidential. The purpose of collating this data is to identify any relationships between pornography use and the variables outlined above.

You may find some of these questions sensitive to answer, however all responses are anonymous; meaning the answers you provide will not be identifiable to you. Should you need to talk about any issues raised in the questionnaire, Alyshia Murgatroyd and Darren Bishop will be contactable via email.

### **How much time will the study take?**

The questionnaire will take approximately 25 minutes to answer.

**Can I withdraw from the study?**

Participation in this study is entirely voluntary and you are not under any obligation to consent. If you do not consent, you can stop completing the questionnaire at any time and exit the questionnaire without reason. If you do not wish to answer any of the questions, you do not have to.

If after submitting your answers you decide that you no longer want us to use your data- you can contact Darren Bishopp (email stated at the bottom of this page). Using your ID number your results can be withdrawn. This can be done up until the analysis stage of the experiment.

There will be no negative consequences for you if you choose to withdraw.

**How will the data be dealt with and who will see the results?**

Your participation in this study is confidential and no information about your participation or individual results will be shared beyond the researcher and supervisor. The data, once collected, will not be identifiable as belonging to any individual participant and will be used only for the purpose of this study. The results will be presented as part of a research thesis. The thesis may be read by examiners, including an external examiner and the supervisor, and will be available to be read by other students in future years. There will be nothing in the report that will allow any individual participant to be identified.

Only the researcher and the supervisor will have access to the original data, of which will be held anonymously on a secure University of Birmingham computer. All materials relating to this study will be stored in a secure location at the University of Birmingham for a period of ten years before being destroyed.

**Are there any benefits or risks associated with participating in this study?**

You will not be given any type of 'score' or feedback on the answers you provide. There are no anticipated risks or dangers associated with this study and it should not cause you any discomfort or inconvenience, other than the time spent completing it. If you wish to speak with Alyshia Murgatroyd regarding any issues at any point before, during, or after completing the questionnaire, you can do so via email.

**What if I want support after the study?**

If you feel you need further support after the study, Samaritans offer free confidential support around the clock both online and on the phone.

Samaritans – 116 123

**What if I require further information about the study or my involvement in it?**

If you would like to know more at any stage after having participated please feel free to contact:

Alyshia Murgatroyd, Doctoral student – [REDACTED]

Dr. Darren Bishopp, Doctoral Lecturer – [REDACTED]

**What if I have a complaint or any concerns?**

If you have any concerns or complaints about the conduct of this study, contact Dr. Darren Bishopp, Centre for Forensic and Criminological Psychology, School of Psychology, University of Birmingham, Edgbaston, Birmingham, B15 2TT.

Email: [REDACTED] Tel: [REDACTED]



## Consent

I have read, understood and been provided with a copy of the participant information sheet for the study identified above. Choose one of the following answers.

☐ Yes

☐ No

I understand I can withdraw my data from the study up until the results are analysed. Choose one of the following answers.

☐ Yes

☐ No

If you are a student at the University of Birmingham, please state your student ID in the box below e.g. 1430394. If you are **not** a student, please state your initials followed by your date of birth e.g. TS120395. Your ID is necessary in case you wish to withdraw your data and we need to identify you. This information will be anonymised as soon as you submit your data and cannot be used to identify your answers.

.....

I understand that my student ID number/ initials and date of birth will be anonymised immediately and will only be used to identify my data if I wish to withdraw from the experiment.

☐ Yes

☐ No

I agree to participate in this study.

☐ Yes

☐ No



# UNIVERSITY OF BIRMINGHAM

## Questionnaire

### **The influence of pornography on young people's sexual health and behaviour**

To fill in this questionnaire please tick the boxes that relate to you and write down answers in the spaces provided. We are interested in **your** experiences, whatever they are, so please answer the questions honestly and fully. Your answer will not be judged, and will allow us to gain a better understanding of your experiences. The aim of reviewing pornography and sexual behaviour is to gain information for the study and not to elicit any emotions.

## Demographics

**Age:** .....

**Gender Identity<sup>1</sup>:**    ☐ Male            ☐ Female            ☐ Other

**Main Occupation:**

☐ School Student      ☐ University Student  
☐ Employed            ☐ Self-employed            ☐ Unemployed

**Nationality:**

*Africa:*            ☐ South African            ☐ Nigerian            ☐ Kenyan            ☐ Zimbabwean  
☐ Mixed – African and .....  
☐ Other:.....

*Asia:*            ☐ Indian            ☐ Pakistani            ☐ Chinese            ☐ Bangladeshi  
☐ Mixed – Asian and .....  
☐ Other:.....

*Europe:*            ☐ British            ☐ Irish            ☐ Polish            ☐ Spanish            ☐ Italian  
☐ Mixed – European and .....  
☐ Other:.....

*North America:* ☐ American    ☐ Canadian    ☐ Mexican    ☐ Caribbean  
☐ Mixed – North American and .....  
☐ Other:.....

*South America:* ☐ Brazilian    ☐ Argentinian  
☐ Mixed – South American and .....

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<sup>1</sup> This is the gender you assign to, not necessarily what sex you were born

☐ Other:.....

*Australasia:*    ☐ Australian    ☐ New Zealander    ☐ Filipino    ☐ Fijian  
☐ Mixed – Australasian and .....  
☐ Other:.....

*Other:* .....

**Religion:**    ☐ No religion    ☐ Buddhist    ☐ Christian    ☐ Catholic  
                  ☐ Hindu        ☐ Jewish        ☐ Muslim        ☐ Sikh  
☐ Other.....

**How often do you visit your place of worship?**

☐ Never        ☐ Rarely        ☐ Occasionally        ☐ Frequently        ☐ Always

**Sexual Orientation:**

☐ Bisexual (*attracted to both sexes*)  
☐ Heterosexual (*attracted to the opposite sex*)  
☐ Homosexual (*attracted to the same sex*)  
☐ Asexual (*not sexually attracted to others*)  
☐ Other.....

**Relationship Status:**

☐ Single    ☐ In a relationship; How long for?.....  
☐ Other.....  
☐ Previously in a relationship

How many relationships have you had before? .....

How many of these relationships involved sexual contact? (*More than a kiss*).....

How many people have you had sexual contact with without being in a relationship  
with them? .....

## About self

**About me:** *(Tick if you agree)*

- ☐ I am a sociable person
- ☐ I am quite shy
- ☐ I do things on the spur of the moment
- ☐ I am open-minded
- ☐ I want to get married when I am older

Who do you live with? (If you are a University student, please state who you live with outside of term-time)

- ☐ Mother
- ☐ Father
- ☐ Step-mother
- ☐ Step-father
- ☐ Siblings
- ☐ Grandparents

☐ I have been aware of adults I live with having sex

☐ The adults I live with have spoken to me about sexual activity

☐ They have spoken to me about sexual health

☐ They have spoken to me about relationships

☐ I feel comfortable talking to them about sexual activity

Do you have brothers, if so how many?

.....

Do you have sisters, if so how many?

*True, not true, or somewhat true?*

*(Tick the 'T' for True, 'F' for False or 'S' for somewhat true)*

**T F S**

☐ ☐ ☐ Men and women have different roles

☐ ☐ ☐ Men should work

☐ ☐ ☐ Women should have children

☐ ☐ ☐ Men should have numerous partners before settling down

☐ ☐ ☐ Men should not have one-night stands

☐ ☐ ☐ Women should be homemakers and raise children

☐ ☐ ☐ Men should get married

☐ ☐ ☐ It's okay for men to have affairs

☐ ☐ ☐ Men can't be homemakers and raise children

☐ ☐ ☐ Women should please men

☐ ☐ ☐ Women shouldn't have casual sex

☐ ☐ ☐ Men should not have casual sex

☐ ☐ ☐ Women should not have numerous partners before settling down

☐ ☐ ☐ It's okay for women to have affairs

☐ ☐ ☐ Women can't work if they have children

.....

☐ They have spoken to me about relationships

☐ They have spoken to me about sexual activity

☐ They have spoken to me about sexual health

☐ I feel comfortable talking to them about sexual activity

☐ ☐ ☐ Women should get married

☐ ☐ ☐ Men can be homemakers and look after children

☐ ☐ ☐ Women should not have one-night stands

☐ ☐ ☐ Women don't have to have children

## Pornography

This section has some questions around your pornography use. Remember that answers will not be judged, and will remain confidential to the study. Please answer the following questions with the definition of pornography being “printed or visual material containing the explicit description or display of sexual organs or activity, intended to stimulate sexual excitement.”

1 Have you ever viewed any form of pornography? ☐ Yes ☐ No

1.1 **If no**, please answer the next question and then move to the ‘Sexual Health’ section.

What are the reasons for not viewing pornography?.....  
.....

1.2 At what age did you first see pornography? (i.e. the first time you saw it, not necessarily the first time you used it for sexual pleasure)

.....

1.3 At what age did you first use pornography for sexual pleasure?

.....

2 Do you currently view pornography? ☐ Yes ☐ No

3 How frequently do you view pornography?

The number of ‘sittings’ you’ve had, regardless of how long they have been and how much material you have viewed

*Put a tick in the most appropriate box for ‘currently’ and ‘previously’*

	<b>Two or more times a day</b>	<b>Once a day</b>	<b>Two or more times a week</b>	<b>Once a week</b>	<b>Two or more times a month</b>	<b>Once a month</b>	<b>Less than once a month</b>
Currently							
Previously							

3.1.1 At what age did you most frequently view pornography? .....

3.2 What is the longest you spend viewing pornography in one sitting?

	Several hours	One to two hours	30 minutes to one hour	10 to 30 minutes	Less than 10 minutes
Currently					
Previously					

3.3 Have you ever felt that you were addicted to viewing pornography?

	Definitely	Sometimes	Not at all
Currently			
At most			

3.4 Do you think viewing pornography ever caused you any problems?

☐ Yes ☐ No

3.4.1 If yes, what?.....

4 In what format(s) have you previously viewed pornography?

	Daily	Weekly	Monthly	Never
Photo				
Video				
Magazine				
Story book				
Other (please specify)				

Other:.....

4.1 Most common format:.....

5 On what device have you previously viewed pornography? *Tick all that apply*

☐ Phone ☐ Laptop ☐ Magazine ☐ iPad/Tablet  
☐ Other:.....

5.1 Most common format:.....



- 6 How have you previously gained access to pornography? *Tick all that apply*
- ☐ Online (free)    ☐ Online (paid)    ☐ Online (hacked a system – parental controls/website admin)    ☐ Self-taken    ☐ Web-cam    ☐ Live streaming
- ☐ Peer-taken (i.e. schoolmate/friend taken of themselves)

6.1 Most common format:.....

- 7 Have you ever taken naked or semi-naked images of yourself or others? *Tick all that apply*
- ☐ Self    ☐ Others

7.1 Which of these have you shared with others?    ☐ Self    ☐ Others

7.2 Who have you shared them with?

☐ Partner    ☐ Friends    ☐ Strangers    ☐ Others

- 8 For all of these ‘search terms’, how often have you viewed these types of pornography?

<i>Frequency</i>	<b>Never</b>	<b>Once</b>	<b>Sometimes</b>	<b>Regularly</b>
<b><i>Search terms</i></b>				
Young/Teen				
18 year old				
Virgin/First time				
College				
Family members				
Anal				
Lesbian				
Vagina/Pussy				
Oral/Licking-out/going down				
Masturbation on other/ Handjob/ Fingering				
Solo Masturbation				
Female orgasm/Ejaculation/ Squirting				

Sex toys/ Vibrator/ Dildo				
Boobs				
Ass				
Oral/Blow-job/Head				
Threesomes/ Orgies/ MMF/ FFM				
BDSM				
Rough/Hard				
Forced				
Hard-core				
Role play				
18 & Abused				
Slag/ slut/ whore				
Location (e.g. Bathroom/ Outside/ Car)				
Professionals (i.e. Teacher/ Fireman/ Nurse)				
No Condom				
Condom				
Straight				
Penis/Cock/Dick				
Soft-core				
Foreplay				
Specific positions (e.g. Cowgirl, Doggy)				
Fuck/Shag/Sex				
Bisexual				
Nationality/ Race (e.g. Latino/ Italian/ Chinese)				
Nationality/ Race (e.g. Latino/ Italian/ Chinese)				
Hair colour (e.g. Blonde)				
Black				

Tattoos/ Piercings				
Body type (e.g. Fat/Slim)				
Camera/ Video/ POV				
Older Adults/MILF				
Celebrity				
Amateur				
Gay				
Transsexual/Transvestite				
Balls/Teabagging				
Urinating or defecation/ Watersports/ Golden shower/ Scat				
Religion				
Sperm/Cumshot/Jizz				

Other:.....

9 Do you think it is normal to be viewing pornography?

☐ Yes ☐ No

10 Have you ever viewed a certain type of pornography because of what your friends/classmates said?

☐ Yes ☐ No

10.1 If yes, what is this?.....

11 Do you view pornography...

	Always	Often	Sometimes	Never
Alone				
With friends				
With partners you have <b>not</b> had sexual contact with				
With partners you have had sexual contact with				

With a family member (please specify)				
Other (please specify)				

Family member:.....

Other:.....

12 Have you ever used drugs or alcohol when viewing pornography?

☐ Yes ☐ No

12.1 **If yes, what?**.....

13 How often does the content that you view in pornography match what you want to do/like to do in real-life?

☐ Almost never or never ☐ Less than half the time ☐ About half the time  
☐ More than half the time ☐ Almost always or always

14 Have you ever found that the pornography that you usually use does not stimulate you?

☐ Yes ☐ No

15 **If yes**, how often has this led you to view content that you did not originally think you would look at?

☐ Never ☐ Rarely ☐ Occasionally ☐ Frequently ☐ Always

16 If this has happened, how upset did this make you feel?

☐ Not at all ☐ Slightly ☐ Moderately ☐ Very ☐ Extremely  
☐ Not applicable (i.e. has not happened to me)

17 If this has happened, how guilty did this make you feel?

☐ Not at all ☐ Slightly ☐ Moderately ☐ Very ☐ Extremely  
☐ Not applicable (i.e. has not happened to me)

18 Has viewing this content led you to complete the sexual act in real life?

☐Yes

☐No

19 If viewing this content has led you to complete the sexual act in real life, how guilty has this made you feel?

☐Not at all

☐Slightly

☐Moderately

☐Very

☐Extremely

☐Not applicable

## Sexual Health

This section has some questions around your sexual health. Remember that answers will not be judged, and will remain confidential to the study.

20 Age started puberty (i.e. when started to develop pubic hair): .....

21 At what age did you start becoming sexually attracted to others?.....

22 Which forms of contraception are you aware of? (If the contraception does not apply to you, i.e. the oral pill for a male, please answer regarding whether you would feel comfortable with your sexual partner using it)

	<b>Not heard</b>	<b>Know a little</b>	<b>Know and would use</b>	<b>Know and wouldn't use</b>
Condom				
Coil				
Diaphragm				
Rhythm (not having sex whilst fertile)				
Oral pill				
Antihistamines				
Depot				
Withdrawal				
Morning after pill				
Other (please specify)				

Other:.....

23 Do you think it is important to use certain forms of contraception over others?

☐ Yes      ☐ No

23.1 **If yes**, which ones and why? .....

.....

- 24 If you have engaged in any form of sexual activity (i.e. more than a kiss), which forms of contraception have you or your sexual partner used before?

	<b>Always</b>	<b>Often</b>	<b>Sometimes</b>	<b>Never</b>
Condom				
Coil				
Diaphragm				
Rhythm (not having sex whilst fertile)				
Oral pill				
Antihistamines				
Depot				
Withdrawal				
Morning after pill				
Haven't used anything				
Other (please specify)				

Other:.....

- 25 Where have you and/or your sexual partner previously accessed contraception?

	<b>Often</b>	<b>Sometimes</b>	<b>Never</b>
School nurse			
Teacher			
Parents			
Siblings			
Other family			
Friends			
GP			
Sexual health clinics			
Supermarket			
Emergency care			

Internet			
Other (please specify)			

Other:.....

26 If you have engaged in any sexual activity, but haven't used contraception, have you ever experienced an unintended pregnancy and or STIs?

☐ Yes      ☐ No      ☐ Always used contraception

26.1 For what reasons did you not use contraception?.....

.....

27 If you have engaged in sexual activity, and have used contraception, have you ever experienced an unintended pregnancy and or STI?

☐ Yes      ☐ No      ☐ Never used contraception

27.1 Which contraception did you use? .....

.....

28 Have you ever had any sexually transmitted infection (STI)?

	Never	Once	More than once
Herpes			
Chlamydia			
Genital warts			
Gonorrhoea (clap)			
Pubic lice			
Syphilis			
Scabies (mites)			
HIV/AIDS			
Other (please specify)			

Other:.....



29 Have you experienced any of these physical symptoms in or around the genitals due to sexual activity?

	<b>Never</b>	<b>Once</b>	<b>More than once</b>
Soreness			
Stinging			
Itching			
Thrush			
Water infection			
Other (please specify)			

Other:.....

30 How often have the following given you advice or treatment for physical symptoms due to sexual activity?

	<b>Often</b>	<b>Sometimes</b>	<b>Never</b>
School nurse			
Teacher			
Parents			
Siblings			
Other family			
Friends			
GP			
Sexual health clinics			
Chemist			
Emergency care			
Supermarket			
Internet			
Other (please specify)			

Other:.....

31 How often have you discussed and/or got advice about anything around the topic of sexual activity (i.e. sexual acts, contraception, emotions) from any of the following?

	<b>Often</b>	<b>Sometimes</b>	<b>Never</b>
School nurse			
Teacher			
Parents			
Siblings			
Other family			
Friends			
GP			
Sexual health clinics			
Chemist			
Emergency care			
Supermarket			
Internet			
Other (please specify)			

Other:.....

## Sexual Behaviour

This section has some questions around your sexual behaviour. Remember that answers will not be judged, and will remain confidential to the study.

- 32 Have you ever masturbated? ☐ Yes ☐ No
- 32.1 **If no**, what are the reasons for not masturbating?.....  
.....
- 32.2 **If yes**, at what age did you first masturbate for sexual pleasure?.....
- 32.3 Have you ever masturbated to pornography? ☐ Yes ☐ No
- 32.4 How often do you masturbate without using pornography?  
☐ Almost never or never ☐ Less than half the time  
☐ About half the time ☐ More than half the time  
☐ Almost always or always
- 32.5 What age did you masturbate most frequently? .....
- 32.6 Do you currently masturbate? ☐ Yes ☐ No  
**If no**, at what age did you stop?.....
- 32.7 What do you think about masturbation (i.e. good, bad)  
☐ It's good ☐ It's okay ☐ It's bad ☐ Not thought about it before

33 How often do you...

	More than once a day	Daily	Weekly	Monthly	Rarely	Never
Currently masturbate						
Masturbated at most						
Currently think about sex						
Think about sex at most						

34 What sexual contact have you ever engaged in and at what age was the first time you did so? *Write age in last column*

	<b>Often</b>	<b>Sometimes</b>	<b>Never</b>	<b>Don't know what this is</b>	<i>Age</i>
Kissing (closed mouth)					
Kissing (open mouth)					
Touching over clothes (not genitals)					
Touching genitals over clothes					
Touching under clothes (not genitals)					
Touching genitals under clothes					
Mutual masturbation (fingering/ wanking the other person)					
Oral sex (using mouth)					
Vaginal Intercourse					
Anal Intercourse					
Used sex toys (i.e. vibrators)					
Used bondage (i.e. tied up person/used whips)					

35 Have you enjoyed being sexual active?

☐ Always      ☐ Often      ☐ Sometimes      ☐ Never

35.1 If you have not always enjoyed being sexually active, what were the reasons for this?.....

.....  
.....

36 Before engaging in sexual activity, have you gained consent from the other person?      ☐ Yes      ☐ No

36.1 How have you known they consented?

☐ What they said      ☐ How they behaved      ☐ They didn't say no

- 37 For what reasons have you engaged in sexual activity? *Check any that apply*
- ☐ Only you wanted to    ☐ Only partner wanted to    ☐ You and your partner wanted to    ☐ Friends wanted you to
- ☐ Other: .....

- 37.1 What sexual acts have you engaged in because your partner wanted to but you did not? And why? (Please put N/A if not applicable)

.....

.....

.....

- 37.2 What sexual acts have you engaged in because you wanted to but your partner did not want to? And why? (Please put N/A if not applicable)

.....

.....

.....

- 38 Have you experienced pressure from friends/classmates to engage in sexual activity? (Regardless of whether this has made you engage in it or not)

☐ Yes    ☐ No

- 39 Currently, do you compare how sexually active you are with your friends/classmates?

☐ Yes    ☐ No

- 39.1 **If yes**, how sexually advanced are you compared to your friends/classmates?

☐ More    ☐ Less    ☐ The same

- 40 If you have viewed pornography, do you think it has influenced what sexual activity you would want to engage in?

☐ Yes    ☐ No

**If yes**, how do you think it has influenced you and what sexual acts has it made you want to engage in? .....

.....

40.1 If you have viewed pornography, do you think this influences what sexual acts your partner would want to engage in?

☐ Yes ☐ No

**If yes**, how do you think it has influenced your partner and what sexual acts has it made them want to engage in? .....  
.....

40.2 Do you think your partner watching pornography influences what sexual acts they want to engage in?

☐ Yes ☐ No ☐ My partner does not watch pornography

## Sexual Function

This sections contains questions regarding your sexual function and questions regarding the sexual content of pornography. Please remember that all answers will remain anonymous and confidential.

41 Over the past 6 months:

If you are **male**, how confident are you that you could get and keep an erection?

If you are **female**, how confident are you that you could become and maintain arousal?

☐ Very Low      ☐ Low      ☐ Moderate      ☐ High      ☐ Very High

42 Over the past 6 months:

If you are **male**, when you had erections with sexual stimulation, how often were your erections hard enough for penetration?

If you are **female**, when you had arousal with sexual stimulation, how often were you sexually aroused enough for penetration?

☐ Almost never/never      ☐ A few times (much less than half the time)  
☐ Sometimes (about half the time)      ☐ Most times (much more than half the time)  
☐ Almost always/always      ☐ Not applicable

43 Over the past 6 months:

If you are **male**, during sexual intercourse, how often were you able to maintain your erection after you had penetrated (entered) your partner?

If you are **female**, During sexual intercourse, how often were you able to maintain your arousal after your partner had penetrated (entered) you?

☐ Almost never/never      ☐ A few times (much less than half the time)  
☐ Sometimes (about half the time)      ☐ Most times (much more than half the time)  
☐ Almost always/always      ☐ Not applicable

44 Over the past 6 months:

If you are **male**, during sexual intercourse, how difficult was it to maintain your erection to completion of intercourse?

- ☐ Very difficult   ☐ Difficult   ☐ Slightly difficult   ☐ Not difficult  
☐ Not applicable

If you are **female**, during sexual intercourse, how difficult was it to maintain your arousal to completion of intercourse?

- ☐ Very difficult   ☐ Difficult   ☐ Slightly difficult   ☐ Not difficult  
☐ Not applicable

45 Over the past 6 months:

When you attempted sexual intercourse, how often was it satisfactory for you?

- ☐ Almost never/never   ☐ A few times (much less than half the time)  
☐ Sometimes (about half the time)   ☐ Most times (much more than half the time)  
☐ Almost always/always   ☐ Not applicable

46 How difficult is it for you to delay ejaculation or orgasm?

- ☐ Not difficult at all   ☐ Somewhat difficult   ☐ Moderately difficult  
☐ Very difficult   ☐ Extremely difficult   ☐ Not applicable

47 Do you ejaculate or orgasm before you want to?

- ☐ Almost never or never   ☐ Less than half the time  
☐ About half the time   ☐ More than half the time  
☐ Almost always or always   ☐ Not applicable

48 Do you ejaculate or orgasm with very little stimulation?

- ☐ Almost never or never   ☐ Less than half the time  
☐ About half the time   ☐ More than half the time  
☐ Almost always or always   ☐ Not applicable



49 Do you feel frustrated because of ejaculating or orgasming before you want to?

☐ Not at all      ☐ Slightly      ☐ Moderately      ☐ Very      ☐ Extremely

☐ Not applicable

50 How concerned are you that your time to ejaculation leaves your partner  
unfulfilled?

☐ Not at all      ☐ Slightly      ☐ Moderately      ☐ Very      ☐ Extremely

☐ Not applicable

## Relationship Conflict

Please complete the following questions by circling the number that responds to the amount of times, as highlighted in the key below.

### **Key**

0 = Never

1 = Once in the past year / or ever

2 = Twice in the past year

3 = A few times

4 = Many Times

Have you sworn at a partner?	0	1	2	3	4
Have you shouted at a partner?	0	1	2	3	4
Have you left the room in an angry way?	0	1	2	3	4
Have you threatened to hit a partner?	0	1	2	3	4
Have you damaged a partner's possessions?	0	1	2	3	4
Have you called a partner names?	0	1	2	3	4
Have you accused a partner of being bad in bed?	0	1	2	3	4
Have you pressured a partner to have sex?	0	1	2	3	4
Have you used force to make a partner have sex?	0	1	2	3	4
Have you pressured a partner to have anal sex?	0	1	2	3	4
Have you forced a partner to have anal sex?	0	1	2	3	4
Have you insisted on sex without a condom?	0	1	2	3	4
Have you asked a partner to have a threesome?	0	1	2	3	4
Have you cheated on a partner (had sex with another)?	0	1	2	3	4
Have you used bondage on a partner?	0	1	2	3	4
Have you pressured a partner to have oral sex?	0	1	2	3	4
Have you asked a partner to shave their pubic hair?	0	1	2	3	4

**This is the end of the questionnaire, thank you for your participation**