



COPYRIGHT AND USE OF THIS THESIS

This thesis must be used in accordance with the provisions of the Copyright Act 1968.

Reproduction of material protected by copyright may be an infringement of copyright and copyright owners may be entitled to take legal action against persons who infringe their copyright.

Section 51 (2) of the Copyright Act permits an authorized officer of a university library or archives to provide a copy (by communication or otherwise) of an unpublished thesis kept in the library or archives, to a person who satisfies the authorized officer that he or she requires the reproduction for the purposes of research or study.

The Copyright Act grants the creator of a work a number of moral rights, specifically the right of attribution, the right against false attribution and the right of integrity.

You may infringe the author's moral rights if you:

- fail to acknowledge the author of this thesis if you quote sections from the work
- attribute this thesis to another author
- subject this thesis to derogatory treatment which may prejudice the author's reputation

For further information contact the University's Director of Copyright Services

sydney.edu.au/copyright

Internet Pornography: Associations with Sexual Risk Behaviour, Sexual Scripts & Use within Relationships



Emily Harkness

School of Psychology
University of Sydney

A thesis submitted in partial fulfilment of the degree of Doctorate of Clinical
Psychology/ Master of Science

2015

Acknowledgements

I would like to acknowledge a number of people in my life who have helped me to complete my thesis and the DCP course. Firstly, I want to offer my deepest gratitude to my primary supervisor, A/Prof Barbara Mullan. Barbara, you have been the most wonderful supervisor and given me such fantastic guidance and support. I have loved our supervisory relationship; it was just the right mix of fun, encouragement and nudges forward. Thank you for all of your time and effort, and for putting up with me! I hope you enjoyed our time as much as I did! To my associate supervisors, Prof. Alex Blaszczyński and Dr. Carolyn MacCann, thank you for providing me with additional assistance and expertise along the way.

To my close family: mum, dad, Robbie and Nicky, and extended family, I would like to thank you for always supporting me and continuing to be proud of me and believe in my abilities. I am extremely lucky to have such a wonderful, loving, intelligent and fun family, who I also consider to best friends. I would particularly like to thank mum and dad, who have supported me both emotionally and practically throughout this degree, and without this I would not have been able to complete it.

Finally, I want to express my gratitude to all of my friends, both DCP and non-DCP, who have supported me throughout this course, and made it fun, and often hilarious, along the way. In particular, I am very lucky to have the enduring, amazing and forever-friendship that is PET (Poppy and Tory). Thank you also to my special Tom for your ever-present support, love, pride and belief in me. I am also grateful for my partner-in-crime Natalie, and your empathic nature. While there are too many more special people to mention, please know that I am still very thankful for all of your fantastic personalities, love and support.

Abstract

The production and consumption of internet pornography is widespread, particularly as a result of its highly available, accessible and anonymous nature. Pornography may be an important influence upon sexual scripts, yet research into the cognitive, behavioural and interpersonal outcomes of its use is inconsistent and limited, particularly in adults, and until recently has been focused primarily upon potential harms. Accordingly, the current research attempted to address this gap in the literature through examining pornography use in adults, from a holistic point of view attempting to encompass both the potential benefits and possible negative associations of pornography consumption. Three online surveys were conducted with Australian adult pornography consumers, with comparison groups of non-users. A systematic review highlighting the lack of research examining the link between pornography use and sexual risk behaviour in adults was the impetus for study one (N=620). The results indicated that current internet pornography use was associated with higher sexual sensation seeking, and higher sexual compulsivity in females only, but it was not linked with any other indicators of sexual risk behaviour, including number of sexual partners, STI history, condom attitudes, intention to use a condom or unsafe casual sex. In study two (N=1016), a model of how internet pornography may act as a form of sexual inspiration was tested. Partial support was demonstrated, as internet pornography use was associated with more positive attitudes, greater engagement in a range of sexual activities, and higher sexual boredom. No evidence for a link with body or genital image was demonstrated. Finally, use of internet pornography in individuals within relationships was investigated in study three (N= 812). Daily or greater use of internet pornography was associated with poorer relationship intimacy in males only. Sexual communication

satisfaction was higher for females, but lower for males, with more frequent internet pornography use. Regardless of gender, sexual communication satisfaction was greater when internet pornography was viewed with a partner. The findings were discussed in terms of the research implications and relevant theoretical perspectives; common antecedents to pornography use and its associations, gender differences and feminist approaches were considered. Possible clinical implications and avenues for future research were then explored.

Contents

Chapter 1: Introduction.....	1
1.1 Internet Pornography	3
1.2 The Impact of Pornography on Sexuality: Theoretical Background	5
1.3 Aims and Scope of Thesis.....	9
1.4 Overview of Thesis.....	10
Chapter 2: A Systematic Review of the Association Between Pornography Use and Sexual Risk Behaviours in Adult Consumers	12
2.1 Introduction	12
2.1.1 Sexual risk behaviours.....	12
2.1.2 Rationale and aims of the current systematic review.....	13
2.2 Methods.....	14
2.3 Results.....	18
2.3.1 Unsafe sex practices and condom use	30
2.3.2 Number of sexual partners.....	32
2.3.3 Casual sex behaviour	34
2.4 Discussion.....	35
2.4.1 Unsafe sex practices and condom use	37
2.4.2 Number of sexual partners.....	38
2.4.3 Casual sex behaviour	39
2.4.4 Conclusions.....	39
Chapter 3: Sexual Risk Behaviour and Associations With Internet Pornography Use	41
3.1 Literature Review.....	41
3.1.1 Sexual sensation seeking.....	41
3.1.2 Sexual compulsivity	42
3.1.3 Condom attitudes and safer sex.....	43
3.1.4 Number of sexual partners and casual sex behaviour	45

3.1.5 Hypotheses.....	45
3.2 Methods.....	46
3.2.1 Design and procedure	46
3.2.2 Recruitment.....	46
3.2.3 Participants.....	47
3.2.4 Measures.....	48
3.2.4.1 Demographics.....	48
3.2.4.2 Pornography consumption.....	50
3.2.4.3 Sexual sensation seeking.....	51
3.2.4.4 Sexual compulsivity	51
3.2.4.5 Condom attitudes.....	52
3.2.4.6 STI incidence.....	53
3.2.4.7 Using a condom during casual sex	53
3.2.4.8 Sexual partners.....	53
3.3 Results.....	53
3.3.1 Sexual compulsivity and sexual sensation seeking	58
3.3.2 Condom attitudes.....	58
3.3.3 Intention to use a condom	65
3.3.4 Using condoms during casual sex.....	67
3.3.5 Sexual partners.....	67
3.3.6 STI history	72
3.4 Discussion.....	74
Chapter 4: Associations between Internet Pornography Use and Sexual Scripts, Attitudes and Non-Risky Sexual Behaviour	79
4.1 Introduction and Literature Review.....	79
4.1.1 Purpose of the study	79
4.1.2 Pornography as sexual inspiration: pornography provides models for sexual behaviours	79

4.1.3	Characteristics of pornography consumption: gender differences and themes	83
4.1.4	The influence of pornography on body and genital image	84
4.1.5	Hypotheses	86
4.2	Methods	87
4.2.1	Design, procedure and recruitment	87
4.2.2	Participants	87
4.2.3	Materials	88
4.2.3.1	Demographics	88
4.2.3.2	Pornography consumption	90
4.2.3.3	Sexual scripts	92
4.2.3.4	Appeal of sexual behaviours	92
4.2.3.5	Sexual behaviour	93
4.2.3.6	Sexual boredom	94
4.2.3.7	Self-perceived changes in attitudes towards sexual activities and actual sexual behaviours ..	95
4.2.3.8	Body satisfaction	95
4.3	Results	96
4.3.1	Testing the sexual inspiration model of internet pornography consumption	97
4.3.2	Characteristics of pornography consumption: gender differences and themes	104
4.3.3	Self-perceived changes in attitudes towards sexual activities and actual sexual behaviours	105
4.3.4	Internet pornography use and body and genital image	112
4.4	Discussion	115
Chapter 5: Use of Internet Pornography in Individuals in Relationships; Sexual Communication and Intimacy		122
5.1	Literature Review	122
5.1.1	Intimacy	123
5.1.2	Sexual communication	124
5.1.3	Hypotheses	125

5.2	Methods.....	126
5.2.1	Design, procedure and recruitment.....	126
5.2.2	Participants.....	126
5.2.3	Materials.....	128
5.2.3.1	Demographics.....	128
5.2.3.2	Relationship characteristics.....	128
5.2.3.3	Pornography consumption.....	129
5.2.3.4	Intimacy.....	130
5.2.3.5	Sexual communication.....	130
5.3	Results.....	131
5.3.1	Intimacy.....	136
5.3.2	Sexual communication.....	140
5.4	Discussion.....	143
	Chapter 6: General Discussion.....	148
6.1	Aims.....	148
6.2.	Summary of the Main Findings.....	148
6.3	Emerging Patterns.....	149
6.3.1	Common antecedents to pornography use.....	150
6.3.2	Gender differences and libertarian feminist perspectives.....	152
6.4	Clinical Implications.....	154
6.5	Strengths, Limitations & Future Research.....	155
6.6	Conclusion.....	157
	References.....	159
	Appendices.....	179

List of Tables

Chapter 2

Table 2.1. <i>Summary of Findings for Internet Pornography</i>	19
Table 2.2. <i>Summary of Findings for Unspecified Pornography</i>	20
Table 2.3. <i>Quality Index Scale Means And Standard Deviations For Internet Pornography Studies</i>	28
Table 2.4. <i>Quality Index Scale Means And Standard Deviations For Unspecified Pornography Studies</i>	29

Chapter 3

Table 3.1 <i>Demographic Characteristics of the Sample by Gender</i>	49
Table 3.2 <i>Descriptive Statistics For the Main Outcome Variables</i>	55
Table 3.3 <i>Frequency Distributions For the Main Categorical Outcomes Variables for Males and Females</i>	56
Table 3.4 <i>Correlations Between Internet Pornography Use And Relevant Outcome Variables For Males</i>	57
Table 3.5 <i>Summary of Hierarchical Regression Analysis for Variables Predicting MCAS reliability and Effectiveness Subscale Scores in Males</i>	60
Table 3.6 <i>Summary of Hierarchical Regression Analysis for Variables Predicting MCAS Pleasure Subscale Scores in Males</i>	61
Table 3.7 <i>Summary of Hierarchical Regression Analysis for Variables Predicting MCAS Embarrassment Subscale Scores in Males</i>	62

Table 3.8 <i>Summary of Hierarchical Regression Analysis for Variables Predicting MCAS Purchasing Embarrassment Subscale Scores</i>	64
Table 3.9 <i>Summary of Binary Logistic Regression Analysis for Variables Predicting Intention to Use a Condom Over the Next 2 Months</i>	66
Table 3.10 <i>Summary of Hierarchical Regression Analysis for Variables Predicting Lifetime Number of Sexual Partners Subscale Scores</i>	69
Table 3.11 <i>Summary of Hierarchical Regression Analysis for Variables Predicting Number of Sexual Partners Over the Previous Month</i>	71
Table 3.12 <i>Summary of Binary Logistic Regression Analysis for Variables Predicting STI History</i>	73
Chapter 4	
Table 4.1 <i>Demographic Characteristics of the Sample</i>	89
Table 4.2 <i>Summary of Items of the Pornography Use Characteristics Questionnaire</i>	91
Table 4.3 <i>Descriptive Statistics for the Main Variables</i>	97
Table 4.4. <i>Correlations Among the Variables Included in the SEM Model</i>	101
Table 4.5 <i>Indirect Effects of Frequency of Internet Pornography Use and Paraphilic Internet Pornography Use</i>	104
Table 4.6 <i>Frequencies of Internet Pornography Use Characteristics and Significance of Gender</i>	107
Table 4.7 <i>Correlations between Genre and Self-Perceived Attitude and Behaviour Change</i>	108
Table 4.8 <i>Summary of Hierarchical Regression Analysis for Variables Predicting Body Satisfaction in Females</i>	114

Table 4.9 <i>Summary of Hierarchical Regression Analysis for Variables Predicting Genital Satisfaction</i>	115
Chapter 5	
Table 5.1 <i>Demographic Characteristics of the Sample</i>	127
Table 5.2 <i>Frequencies of Internet Pornography Use and Chi-Square Results for Gender</i>	133
Table 5.3 <i>Descriptive Statistics for the Main Outcome Variables</i>	134
Table 5.4 <i>Correlations Among the Main Variables of Interest</i>	135
Table 5.5 <i>Summary of Hierarchical Regression Analysis for Variables Predicting Intimacy with Significant Other</i>	138
Table 5.6 <i>Summary of Hierarchical Regression Analysis for Variables Predicting Intimacy with Significant Other for Internet Pornography Users Only</i>	139
Table 5.7 <i>Summary of Hierarchical Regression Analysis for Variables Predicting Sexual Communication Satisfaction in Females</i>	142
Table 5.8 <i>Summary of Hierarchical Regression Analysis for Variables Predicting Sexual Communication Satisfaction in Internet Pornography Users Only</i>	143

List of Figures

Chapter 2

<i>Figure 2.1.</i> Flow chart for article selection.....	17
--	----

Chapter 4

<i>Figure 4.1.</i> The proposed sexual inspiration model of internet pornography consumption.....	83
---	----

<i>Figure 4.2.</i> Path analysis of the sexual inspiration model of internet pornography consumption for females.....	102
---	-----

<i>Figure 4.3.</i> Path analysis of the sexual inspiration model of internet pornography consumption for males.....	103
---	-----

<i>Figure 4.4.</i> Internet pornography genres viewed in the past 12 months by regular users and gender differences.....	109
--	-----

<i>Figure 4.5.</i> Self-report responses regarding to what extent participants believed pornography had affected their attitudes toward (or appeal of) specific sexual acts.....	110
--	-----

<i>Figure 4.6.</i> Self-report responses regarding feelings towards changes in personal sexual attitudes brought about through pornography use.....	110
---	-----

<i>Figure 4.7.</i> Self-report responses regarding to what extent participants believed pornography had affected their sexual behaviours.....	111
---	-----

<i>Figure 4.8.</i> Self-report responses regarding feelings towards changes in sexual behaviour brought about through pornography use.....	111
--	-----

Chapter 1: Introduction

The production and consumption of pornography, also referred to as sexually explicit material, is widespread. Pornography is increasingly becoming more mainstream in western society. In 2006, almost \$4 billion was spent on adult video sales and rentals in the United States (US) alone, with overall pornography revenue estimated at approximately \$13 billion (Ropelato, 2007). In Australia, pornography revenues were estimated at \$2 billion (Ropelato, 2007); however, as this corresponded to a relatively smaller population, per adult spending is estimated to be considerably higher.

Currently, no standardized definitions of pornography exist, and those available are variable and inconsistent (Short, Black, Smith, Wetterneck, & Wells, 2012). After conducting a systematic review of internet pornography research methodology, Short et al. (2012) proposed that pornography be defined as “any sexually explicit material displaying genitalia with the aim of sexual arousal or fantasy” (p.21). It is of note that Short et al. (2012)’s definition assumes that pornography contains images, however, it is possible for pornography to take the form of a variety of media including books, magazines and texts, in addition to video clips, films, photos, and comics (Döring, 2009). One well supported and highly cited definition which encompasses a variety of media is that of Hald and Malamuth (2008), who defined pornography as “any kind of material aiming at creating or enhancing sexual feelings or thoughts in the recipient and, at the same time, containing explicit exposure and/or descriptions of the genitals and clear explicit sexual acts” (p. 616).

Pornography consumption is prevalent; however, exact rates are difficult to ascertain due to inconsistencies in assessment methodology and sampling techniques (Peter & Valkenburg, 2011b). Research into the use of pornography in Australia is limited. A large-

scale, representative, nation-wide survey of Australians found that just over one quarter of participants (37% of males and 16% of females) had viewed a pornographic film in the previous 12 months (Richters, Grulich, de Visser, Smith, & Rissel, 2003). Results from the General Social Survey (GSS), a representative, randomized, large-scale survey of the US general population, estimated that just under a quarter of the population had viewed pornography in the previous 12 months (Wright, 2012a). Conversely, pornography use appears to be much greater in Europe; Traeen and Nilson (2006) examined pornography use in a large national, random sample of Norwegians and found that 84% of participants had viewed pornography in the previous 12 months, with 34% having seen internet pornography during this time. Accordingly, while there is some variance between different countries and cultures, pornography use throughout the western world appears to be a relatively common phenomenon.

There are a number of well-established antecedents to pornography use. Consumers of pornography are more likely to be homosexual or bisexual, young adults or adolescents, non-religious, single, sensation seeking and to have a higher level of education (Brown & L'Engle, 2009; Döring, 2009; Perry, Accordino, & Hewes, 2007; Peter & Valkenburg, 2011b). There is also robust support in the literature for a gender difference in the consumption of pornography, where a higher proportion of males tend to consume pornography compared to females (Döring, 2009; Paul & Shim, 2008). Hald and Malamuth (2008) established that 98% of young adult males and 80% of young adult females from Denmark had viewed pornography in their lifetime. Boies (2002) found that only one quarter of female Canadian university students utilised internet pornography, compared to three quarters of males; similar rates have been reported in US adults (Carroll et al., 2008; Weaver et al., 2011).

Furthermore, compared to females, males tend to report greater motivation to view pornography (Paul & Shim, 2008), more positive, accepting and favourable attitudes towards pornography (Carroll et al., 2008; Lo & Wei, 2002), and respond with greater sexual arousal to these stimuli (Janssen, Carpenter, & Graham, 2003).

Pornography is widely available in a variety of genres, and may be broadly categorized as paraphilic or non-paraphilic. Non-paraphilic pornography, also referred to as 'mainstream' pornography, depicts common or typical sexual acts, which may include peno-vaginal intercourse for heterosexual populations, and for both heterosexual and non-heterosexual populations, fellatio, cunnilingus, peno-anal intercourse and masturbation (Coleman, 1991; Rosser et al., 2012). Conversely, paraphilic pornography may contain unusual, rare or odd sexual acts, where there is an atypical focus of desire. Legal paraphilic pornography may include themes of fetishism, bondage and sadomasochism, as opposed to illegal paraphilic pornography, which may contain themes of child pornography or bestiality (Rosser et al., 2012; Stulhofer, Busko, & Landripet, 2010). Common themes have been detected in pornography, with several content analyses concluding that sex is predominantly depicted as a physical, pleasure-oriented and unaffectionate interaction occurring between uncommitted, casual partners (Brosius, Weaver, & Staab, 1993; Dines, Jensen, & Russo, 1997; Peter & Valkenburg, 2008). Additionally, male dominance and sexual prowess, compared to female willingness and pleasure, is more likely to be depicted in heterosexual content (Brosius et al., 1993; Cowan, Lee, Levy, & Snyder, 1988; Zillmann, 2000).

1.1 Internet Pornography

Internet pornography represents a unique media form, which may be qualitatively different from offline forms of pornography such as DVDs or magazines (Döring, 2009; Lo &

Wei, 2005). The internet allows new approaches to the production, consumption and distribution of pornography (Döring, 2009). People who previously may not have had the means, access or exposure may now simply upload videos or images online, and this has led to an increase in the availability of amateur and alternative genres of pornography on the internet (Attwood, 2007; Döring, 2009). Importantly, these genres of pornography may depict a broader range of body shapes, sizes, and appearance, in addition to sexual behaviour which deviates from the normative pornographic script, when compared to that seen in professional mainstream pornography (Attwood, 2007; Döring, 2009; Stern & Handel, 2001).

Cooper (1998)'s Triple A Engine theory asserts that the affordability, accessibility and anonymity of the internet creates a powerful medium for expressing one's sexuality and interacting with sexual material. Internet pornography is particularly affordable, with a broad variety of available free pornography, as well as highly accessible, with pornographic websites accounting for approximately 12% of 4.2 million websites in 2006 and an estimated 42.7% of all internet users having accessed such websites (Ropelato, 2007). Finally, the perceived anonymity of viewing internet pornography in the privacy of one's own home is attractive in comparison to offline pornography, where products must be purchased in person or by mail order using personal identifying information. Accordingly, due to its unique nature, models of offline sexual behaviour may not apply to internet pornography research, emphasizing the importance of examining it as a separate entity (Byers, Menzies, & O'Grady, 2004; Fisher & Barak, 2001).

1.2 The Impact of Pornography on Sexuality: Theoretical Background

Pornography has been subject to continued social controversy and moral panic (Fisher & Barak, 2001; Štulhofer, Jelovica, & Ružić, 2008; Weinberg, Williams, Kleiner, & Irizarry, 2010). A large body of research has focused on the potential social harms of pornography consumption, including sexual violence or aggression, acceptance of rape myths, victimisation through illegal pornography such as child pornography, degradation and objectification of women, negative role models, sexist attitudes and early exposure to pornography in children and adolescents; however, no consensus has been reached (Dines et al., 1997; Döring, 2009; Manning, 2006; McKee, 2005, 2007; Rosser et al., 2012; Stulhofer et al., 2010; Weinberg et al., 2010). A small number of studies have demonstrated experimental evidence for the effects of pornography on adult sexuality; with support found for an influence on reduced romantic commitment, increased clitoral self-stimulation, changing preferences in pornography genre and permissive sexual attitudes (Kohut & Fisher, 2013; Lambert, Negash, Stillman, Olmstead, & Fincham, 2012; Zillmann & Bryant, 1986, 1988). In addition, pornography users have also reported both negative and positive self-perceived effects of consumption (Albright, 2008; Hald & Malamuth, 2008; Hald, Smolenski, & Rosser, 2013). Nonetheless, much of the prior research on pornography has focused on adolescent and youth populations, with substantially less investigation into adult consumers, as it is often assumed that adults' enhanced critical thinking skills render them less susceptible to the potential influences of pornography (Peter & Valkenburg, 2011b). Very little research has attempted to examine pornography use from a more balanced perspective, considering possible adaptive aspects of consumption (Arakawa, Flanders, & Hatfield, 2012). Accordingly, the need for a paradigm shift in the way in which pornography

research is approached has recently been argued (Attwood, 2002; McNair, 2014; Zillmann, 2000) and the focus has shifted to examine how pornography use may interact with sexuality from a more holistic point of view, including both positive and negative associations (Stulhofer et al., 2010; Weinberg et al., 2010). Several theories, which have attempted to explain how consumption of sexually explicit media may influence sexuality, are discussed below.

Sexual Script Theory (Gagnon & Simon, 1973) is a popular perspective drawn upon in the literature to explain how pornography consumption may influence human sexuality. Sexual scripts are cognitive schemata, representing internalized social messages that guide sexual decision making, desires, expectations and behaviour in sexual interactions (Gagnon & Simon, 1973; Simon & Gagnon, 1986). Sexual scripts may be cultural: representing broader messages or instructions existing in general society, interpersonal: representing specific sexual situations or experiences with partners, or intrapsychic: representing an individual's inner fantasies and desires. These three forms of scripts interact and evolve within the individual, influencing sexual behaviour in a dynamic and ongoing process (Frith & Kitzinger, 2001; Simon & Gagnon, 1986). Sexual Scripts are shaped by socialization, in which gender roles are inherent. While scripts may vary greatly and are continually evolving, the traditional heterosexual script, which is most pervasive in western culture, encompasses contrasting expectations for men and women's behaviour in sexual situations (Byers, 1996). This script conceptualises males as having a greater need for sex, where sex is valued as recreational, physical, pleasure-oriented and exciting, and sexual experience or promiscuity is favoured (Byers, 1996; Mosher & Maclan, 1994; Peter & Valkenburg, 2011a). Conversely, sexual experience is viewed as undesirable and detrimental to worth and status in the

traditional female script; as such, females are depicted as being less sexually interested and assertive, and it is expected that sexual activity is restricted to committed relationships (Byers, 1996; Mosher & Maclan, 1994; Peter & Valkenburg, 2011a). Due to these inherent differences in sexual socialisation and dominant sexual scripts in society, sexual script theory predicts a differential effect of pornography on males and females (Mosher & Maclan, 1994).

Pornography may be an important source through which sexual scripts are acquired, modified and acted upon (Weinberg et al., 2010). Wright (2011a), drew upon the work of Huesmann (1986), to propose a theory of how sexually explicit material such as pornography may contribute to the formation of behavioural sexual scripts through a three-step process of acquisition, activation and application. Behavioural sexual scripts, the framework for normative, appropriate sexual behaviour, may be acquired through viewing pornography. Sexual material can activate or cue pre-existing behavioural scripts, which have already been acquired in an individual. Finally, acquired and activated scripts may be applied to actual sexual behaviour (Wright, 2011a, 2011b). As a result of this process, pornography may normalize new or different sexual behaviours, empowering the individual to act out what they may have seen and broadening their sexual repertoire (Weinberg et al., 2010).

Weinberg et al. (2010) assert that, as opposed to being an automatic process, sexual information from pornography is incorporated into sexual scripts and behaviour in an interactive and ongoing manner. The viewer is an active consumer, choosing pornography which is in line with prior sexual socialization and pre-existing sexual scripts. This is in line with other theories of media use, such as the uses and gratifications approach, which asserts that individuals select media content reflecting their existing predispositions and

preferences, in order to meet their desires and achieve gratification (Paul & Shim, 2008; Peter & Valkenburg, 2011b; Ruggiero, 2000). It is further supported by sexual involvement theory (Mosher, 1980) which states that a “goodness of fit” is required between an individual’s sexual script and the sexual fantasy portrayed in pornography, in order for sexual involvement and subsequent sexual arousal to occur. Accordingly, sexual scripts may be strengthened or modified through the active process of consuming pornography, where newly acquired sexual behaviours are integrated into existing scripts, without significantly altering the core of such scripts (Weinberg et al., 2010).

Fisher and Barak (2001) applied the Sexual Behaviour Sequence (Byrne, 1976; Fisher, Byrne, & Kelley, 1986) to conceptualise the process through which pornography consumption may impact sexuality. This model, which incorporates sexual scripting theory, asserts that both conditioned and unconditioned erotic stimuli, such as pornography, elicit sexual arousal, affective and cognitive responses. Erotophilic individuals are predisposed to respond to such sexual stimuli positively, where as erotophobic individuals tend to respond negatively (Fisher & Barak, 2001; Fisher et al., 1986; Fisher, White, Byrne, & Kelley, 1988). Cognitive responses to pornography may be informational, including beliefs about the sexual activity, or imaginative, based on sexual scripts containing representations of the activity (Fisher & Barak, 2001). Such imaginative responses represent a safe means by which to experience and contemplate new sexual behaviours. These initial responses then lead to evaluations about the sexual activity viewed in pornography, and contribute to the construction of expectations for sexual situations (Fisher & Barak, 2001). Thus, according to the Sexual Behaviour Sequence, an individual may view pornography containing a new sexual activity and experience physiological sexual arousal, positive sexual affect, beliefs that

the activity is pleasure-inducing and imagine enacting this behaviour. Consequently, this may then result in preparatory sexual behaviour, such as discussing the new sexual activity with a partner, followed by subsequent engagement in the behaviour. In the final stage of the sequence, future responses to pornographic stimuli containing this activity may be reinforced or moderated, as a result of how the sexual behaviour was experienced when enacted. In accordance with Weinberg et al. (2010), the Sexual Behaviour Sequence conceives pornography use as an active behaviour, whereby individuals seek out erotic stimuli in line with pre-existing tendencies. Subsequent sexual behaviour is moderated not only by the experience of pornography, but as a function of previous experiences, learning history, emotional responses, sexual arousal, expectations, thoughts and scripts (Fisher & Barak, 2001). Thus, the consumption and potential influence of pornography on sexual attitudes and behaviour may be linked to a number of other factors and traits, including an individual's pre-existing sexual scripts.

1.3 Aims and Scope of Thesis

Research on pornography consumption and its association with cognitive, behavioural and interpersonal outcomes is inconsistent and limited. The literature has recently moved towards examining these issues from a more holistic point of view, acknowledging the potential for benefits, in addition to harms. Moreover, the majority of studies have not specifically examined internet pornography use, which is considered to vary significantly from offline pornography (see p. 3-4). Furthermore, a large proportion of the research has not compared pornography users and non-users, examining adolescent, university student or young adult populations. From a sexual scripting theoretical perspective, internet pornography may have the potential to influence, change or create

intrapsychic and interpersonal sexual scripts which determine attitudes and behaviour governing sexual risk taking behaviours (e.g. condom use, number of sexual partners and engagement in casual sex), sexual activities and resulting satisfaction, in addition to intimacy and communication within relationships. While there were many alternative potential avenues of investigation, it was beyond the scope of this thesis to cover some topics (e.g. sexual confidence and self-esteem, sexual permissiveness, sexual functioning, paraphilic behaviours, motivations for sexual activity, or sexual guilt) and the areas chosen reflected the directions and suggestions derived from previous research. Accordingly, the overall aims of the thesis are as follows:

1. To clarify the link between internet pornography use and sexual risk behaviours in an adult sample.
2. To investigate whether internet pornography use may act as a form of sexual inspiration, influencing intrapsychic and interpersonal sexual scripts and subsequent sexual attitudes, behaviour and satisfaction.
3. To further elucidate how internet pornography consumption may operate within relationships.

1.4 Overview of Thesis

Following the theoretical overview provided in this chapter, the results of a systematic review conducted on the literature examining the link between pornography use and sexual risk behaviour are presented. Three online surveys, conducted with Australian adult pornography consumers and non-users, are then described. In study one, the link between internet pornography use and sexual risk behaviour, such as condom attitudes and unsafe sex, is examined. In study two, a model of how internet pornography may act as a

form of sexual inspiration, influencing intrapsychic and interpersonal sexual scripts, is presented and tested. This study also presents additional findings regarding characteristics of pornography consumption in this sample, and whether there is a link between consumption and body image. Finally, internet pornography consumption in individuals who are currently in a relationship was explored in study three, through examining links with sexual communication and intimacy.

Chapter 2: A Systematic Review of the Association Between Pornography Use and Sexual Risk Behaviours in Adult Consumers

2.1 Introduction

2.1.1 Sexual risk behaviours

The association between pornography use and risky sexual behaviour has received limited attention despite its relevance as an important sexual health issue (Döring, 2009). Research into the effects of pornography use on sexual risk behaviour has largely been conducted in adolescents, with evidence for associations between exposure to pornographic websites and a higher number of lifetime sexual partners, having multiple sexual partners in the previous 3-6 months, not using a condom during the last sexual encounter, and not using contraception in the previous 6 months (e.g. Braun-Courville & Rojas, 2009; Luder et al., 2011; Wingood et al., 2001). As it is often assumed that adults are less susceptible to the influences of pornography, due to their enhanced critical thinking skills, there has been substantially less research undertaken for adult consumers (Peter & Valkenburg, 2011b). Consequently, research into the relationship between pornography use and indicators of sexual risk behaviours in the adult population has been sporadic, despite the potential importance of this subject area.

Research has indicated that pornography may be a significant source of sexual education, particularly where other information sources are unavailable (Kubicek, Beyer, Weiss, Iverson, & Kipke, 2010). Nevertheless, safe-sex messages and practices are inconsistent and often absent in pornography (Green, 2004). Furthermore, as a result of rising online amateur pornographic productions, there is reduced control over the depiction of safe-sex practices (Green, 2004). There has been little direct research into how such messages may affect

consumers' safer-sex attitudes and behaviours, with what research there is conducted primarily on adolescents (Peter & Valkenburg, 2011a). This is a crucial area of investigation, as safer sex behaviour has a direct impact upon risk of contracting Sexually Transmitted Infections (STIs). Other indicators of sexual risk behaviour, such as a higher number of sexual partners and casual sex behaviours, may also be associated with pornography use. Increased risk of STI transmission has been linked to casual sex, defined as sex between uncommitted persons such as acquaintances, first dates, or sex workers and clients (Paul, McManus, & Hayes, 2000), and a higher number of sexual partners (Braun-Courville & Rojas, 2009; Eaton, Cain, Pope, Garcia, & Cherry, 2012). A review of the research into the association between safer-sex practices, indicators of sexual risk behaviour and pornography use will assist in highlighting this area as an important current issue and improve the cohesion of the literature, informing directions for future research.

2.1.2 Rationale and aims of the current systematic review

Sexual risk behaviours may have serious consequences not only for sexual health, but also for physical, psychological and emotional wellbeing. The most recent annual surveillance report released by The Kirby Institute (2014) found that both the Australian and global incidences of HIV and other STIs such as Chlamydia, Gonorrhoea and Syphilis, have significantly increased over the past decade. As such, understanding the nature of the relationship between sexual risk taking and pornography consumption is therefore crucial to further illuminate the psychological determinants of STI susceptibility (Eaton et al., 2012). Moreover, knowledge of this relationship, if it exists, may assist effective development and implementation of sexual health interventions, such as STI prevention through programs targeted at specific consumers

(Kelly, Murphy, Sikkema, & Kalichman, 1993). Importantly, evaluation and synthesis of the few studies conducted in this area may serve to stimulate further research of high methodological quality. It is important to note that this review was seen as an integral part of the holistic, balanced perspective taken by the current thesis, as it may serve to elucidate potential negative links of pornography use, or alternatively, it may highlight the absence of a negative effect, across the evaluated studies. Accordingly, the aim of the current systematic review was to summarise the research examining the association between pornography use and indicators of sexual risk behaviours in adult consumers, including: (1) unsafe sexual practices and condom use, (2) number of sexual partners, (3) casual sex practices and (4) STI incidence. Due to the unique nature of the internet, an additional aim was to determine whether the association between indicators of sexual risk behaviours and internet pornography use was significantly different from that of unspecified¹ pornography use.

2.2 Methods

A literature search of published studies was conducted in March 2014. The electronic databases Medline, PsycINFO, Web of Science, PubMed and CINAHL were searched. Keywords associated with pornography (sexually explicit material, sexually explicit media, pornography, porn*, cyberporn, online pornography, internet pornography, online erotica, erotica, internet erotica and cyberpornography) were combined with terms associated with indicators of sexual risk behaviours (sexual risk behaviour, risk behaviour, sexual risk taking, risk taking, condom/condoms, safe sex, unsafe sex, safer sex, unprotected sex, contraception, birth control,

¹ For the purposes of the review, the term “unspecified pornography” is used for studies that have not clarified the form (i.e., magazines, books, videos, internet) of pornography used, or have not differentiated between Internet and non-Internet pornography.

casual sex, sexual partners, HIV, AIDS, STIs or Sexually Transmitted Diseases [STDs]). A manual search was also performed, examining the references of relevant articles for any studies that may have been overlooked by the database search if obscure terminology was used.

To meet inclusion criteria, studies needed to: (1) include adults over the age of 18; (2) examine legal pornography use (e.g. frequency or amount of use, age at first exposure, problematic use); (3) examine indicators of sexual risk behaviours in relation to pornography use (e.g. unsafe sex, casual sex, number of sexual partners, STI incidence); (4) be a randomised controlled trial (RCT), cohort, correlational, quasi-experimental cross-sectional or qualitative study; (5) be available in English; and (6) have the full text available. Articles were excluded if the sample included children or adolescents. Only works published in peer-reviewed journals or books were included; dissertations were deemed eligible for inclusion but none were identified through the search strategy. Clinical case studies, commentaries, theoretical essays or narratives and other non-empirical articles were excluded. While legal paraphilic pornography use, such as that of sadomasochism or bondage, was included; non-consensual violent, or illegal sexual acts (such as rape, paedophilia and bestiality), were excluded. Further, as attitudes towards risky behaviours were not the focus of this review, they were excluded. Additionally, problematic internet use or pornography addiction was not included as an outcome variable, as the focus of the review was restricted to physical sexual health risk behaviours.

Figure 2.1 displays the study selection process for the review. In total, 774 articles (excluding duplicates) were identified through the search strategy. All titles and abstracts were initially screened to determine relevance. A second researcher screened a random selection of 10% of the titles and abstracts in order to ensure inter-rater reliability, with 100% agreement

obtained. The full text articles were then further assessed for eligibility; the reasons for exclusion at this stage are detailed in Figure 2.1. In total, 17 studies were retained for final review; it is of note that no included articles examined pornography use in relation to STI incidence.

Articles were assessed for quality utilising a modified version of the Quality Index Scale (QIS; Downs & Black, 1998), adapted to allow for the appraisal of non-intervention studies (Ferro & Speechley, 2009). The QIS has good reliability and validity for measuring the methodological quality of health research (Downs & Black, 1998; Olivo et al., 2008; Sanderson, Tatt, & Higgins, 2007; Wang, Collet, Shapiro, & Ware, 2008). Individual items were scored either 0 (no/unable to determine) or 1 (yes). The standard of reporting (possible range: 0-7), external validity (possible range: 0-3), and internal validity (possible range: 0-4) and study power (possible range: 0-1) were assessed. The maximum score obtainable on this scale is 15, with higher scores indicating greater methodological quality.

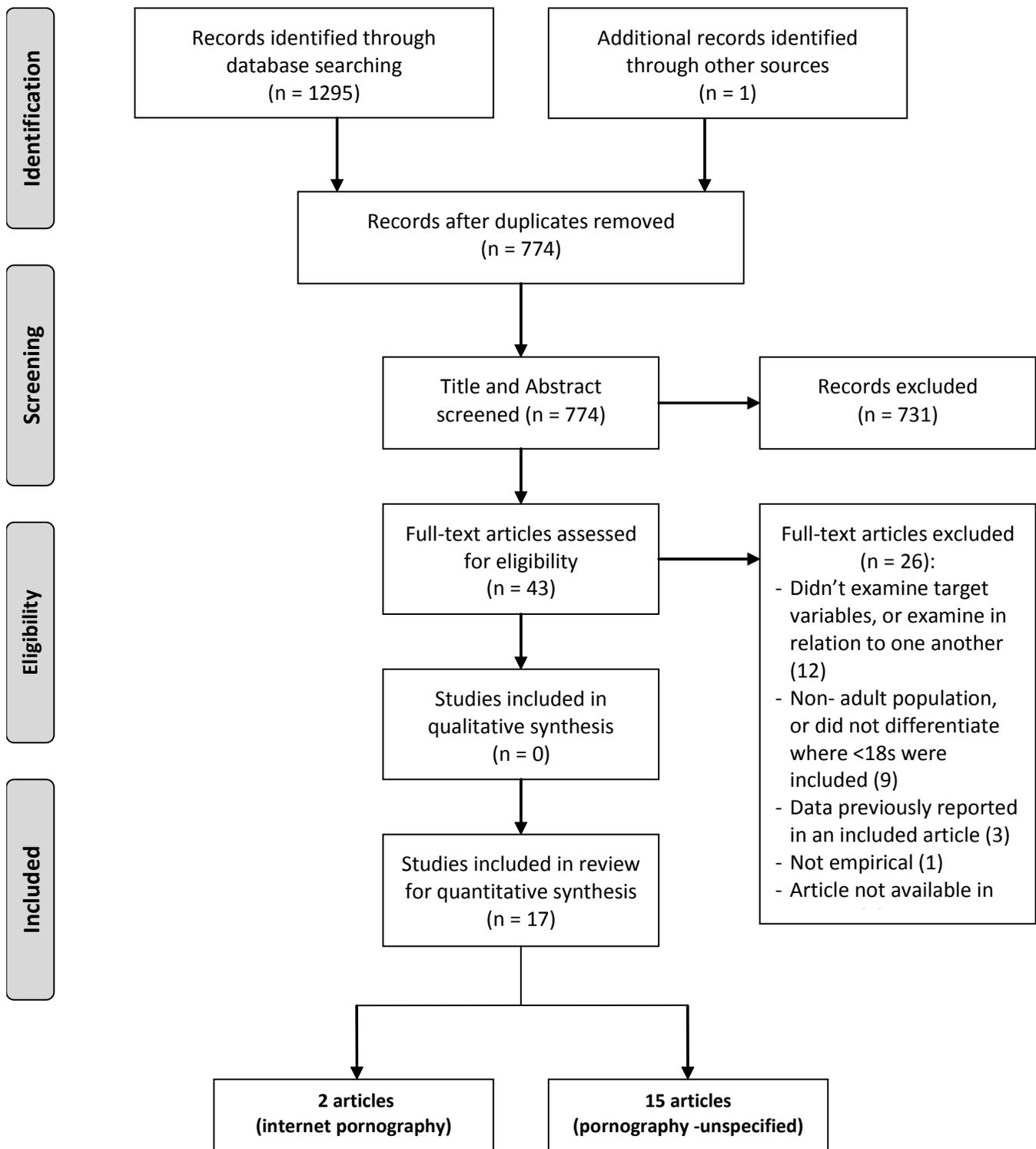


Figure 2.1. Flow chart for article selection.

2.3 Results

Of the 17 studies that met the criteria for inclusion, 2 articles examined internet pornography and a further 15 articles did not differentiate the type of pornography used. For comparative purposes, the findings for internet pornography and unspecified pornography (herein referred to simply as 'pornography') will be considered separately. Details of the articles reviewed are summarised in Table 2.1 (internet pornography studies) and Table 2.2 (pornography studies). The individual means and standard deviations (SD) for the QIS are displayed in Table 2.3 (internet pornography studies) and Table 2.4 (pornography studies). The total mean QIS was 9.82 (Range 6-13) across both pornography and internet pornography categories.

Table 2.1.
Summary Of Findings For Internet Pornography

Author, year & country	Type of Study	Population (N)	Gender	Mean age (SD; range)	Sexual orientation	Pornography variable	Relevant Outcome variable(s) & measure(s)	Relevant Findings	Effect Size	QIS
Nelson et al (2014); US	Cross-sectional	MSM who accessed an MSM-seeking website (N=1170)	Male	18-29: 45%, 30-39: 13%, 40-49: 19%, 50+: 23% (M, SD & range NR)	MSM	Percentage of IP viewed showing UAI	UAI in the past 3 months, Sero-discordant UAI in the past 3 months	Percentage of IP depicting UAI significantly and positively related to engaging in UAI and sero-discordant UAI in the previous 3 months	<u>UAI</u> : 0-24% of IP showing UAI: OR=1, 25-49%: OR=1.7, 50-74%: OR=2.9, 75-100%: OR=4.9; <u>Sero-discordant UAI</u> : 0-24% of IP showing UAI: OR=1, 25-49%: OR=1.4, 50-74%: OR=2.0, 75-100%: OR=2.7	7
Peter & Valkenburg (2011); Netherlands	Cohort	Random community sample (N=833 adults)	51% female, 49% male	47.89 years (16.67; range unavailable)	91% "exclusively heterosexual"	Viewing frequency of IP over the past 6 months	Frequency of casual sex without using a condom in past 6 months	Frequency of viewing IP correlated with a higher number of unsafe casual sex acts**, over the previous 6 months ^a . A gender x IP use interaction was also significant and post-hoc analyses revealed that the effect was only significant for only males, and IP use not associated with female casual unsafe sex.	OR=2.201; $r=.09^{**}$ -.14** (across 2 time points); for gender interaction: OR=1.43x10 ²⁴	13

Note: **IP**= Internet Pornography, **UAI**= Unprotected Anal Intercourse, **NR**= Not Reported; *p<.05, **p<.01 ***p<.001

a= when controlling for gender, age, sensation seeking, life satisfaction, attachment, heterosexual orientation, relationship status, number of lifetime sexual partners and sexual risk behaviours of friends.

Table 2.2.

Summary Of Findings For Unspecified Pornography

Author, year & country	Type of Study	Population (N)	Gender	Mean age (SD; range)	Sexual orientation	Pornography variable	Relevant Outcome variable(s) & measure(s)	Relevant Findings	Effect Size	QIS
Carroll et al. (2008); US	Cross-sectional	University students (N=813)	62% female, 38% male	20.0 years (1.84, 18-26)	96% "heterosexual", 2% "homosexual" 2% "bisexual"	Pornography viewing frequency	Lifetime # sexual partners, past 12 months # sexual partners	Frequency of pornography use associated with a higher # lifetime sexual partners (males*, females***) and # sexual partners over past 12 months (females*** only, males ns); pornography users had more sexual partners across lifetime* and past 12 months* than non-users. Daily male users had a higher # of lifetime sexual partners* than none or seldom users, but lower # of sexual partners over past 12 months than non-users* ^a . Monthly users had a greater # of partners ^a from past 12 months than non-users*. Female users had higher # of partners over past 12 months* and lifetime*, compared to non-users ^a .	<u>Lifetime # partners:</u> males- r=.11 females- r=.17; <u>Past 12 months # partners:</u> males- r=.06, females- r=.09; other data NR	9
Eaton et al. (2012); US	Cross-sectional	Community sample, HIV negative, had ≥2 unprotected male anal-sex partners in past 6 months (N=149)	Males	29.1 years (10; range NR)	"Homosexual"	Average minutes per week viewing pornography	# Male sexual partners, # receptive UAI, # insertive UAI	Pornography viewing time per week significantly associated with a higher # of male sexual partners*** and insertive UAI*** but not with # of receptive UAI ^b .	NR	13

Author, year & country	Type of Study	Population (N)	Gender	Mean age (SD; range)	Sexual orientation	Pornography variable	Relevant Outcome variable(s) & measure(s)	Statistics reported	Effect Size	QIS
Kraus & Russell (2008); US	Cross-sectional	Convenience community sample (N=437)	63% female, 37% male	30.0 (11.8; range NR)	"Heterosexual"	History of exposure to pornography from ages 12-17	Lifetime number of sexual partners	No differences found between those exposed to SEM between age 12-17 and those not for lifetime # sexual partners ($p>.05$)	NR	6
Morgan (2011); US	Cross-sectional	college students (N= 782)	58% female, 42% male	19.9 (SD NR; 18-30)	"Heterosexual"	Frequency of pornography use, type of pornography viewed	Lifetime # sexual partners, # lifetime casual sex partners	Frequency of pornography used was associated with # of lifetime casual sex partners** and with # of lifetime sexual partners** ^c . Type of pornography used was also associated with # of lifetime casual sex partners** and with # of lifetime sexual partners** ^c . Frequency of pornography use, as well as type of pornography used, were significantly associated with a higher # of lifetime sexual partners in males** and females***, and with a higher # of lifetime casual sex partners in both males*** and females*** ^c .	<u>Lifetime # partners:</u> frequency of use ($\beta=.15$), males- $r=.20$ females- $r=.38$, type used ($\beta=.28$), males- $r=.29$ females- $r=.39$; <u># lifetime casual partners:</u> frequency ($\beta=.12$), males- $r=.20$ females- $r=.32$; type used ($\beta=.30$), males- $r=.30$ females- $r=.36$.	8

Author, year & country	Type of Study	Population (N)	Gender	Mean age (SD; range)	Sexual orientation	Pornography variable	Relevant Outcome variable(s) & measure(s)	Statistics reported	Effect Size	QIS
Poulsen, Busby, and Galovan (2012); US	Cross-sectional	Community based sample of 617 couples (N=1.234); referred by therapists, relationship educators, clergy, family or friends, or online adverts	50% female; 50% male	NR (NR; 17-58)	"Heterosexual"	Frequency of pornography use over the past 12 months (ranging from never to almost every day)	# lifetime sexual partners	For both males and females, pornography users had a significantly greater number of sexual partners than non-users.	Males: Cohen's $d=.44$; females $d=.30$	7
Rosser et al. (2013); US	Cross-sectional	Online community sample (N=1,391)	Males	NR; all participants were 18+, mode=18-24	MSM, "gay identified"	Viewing hours per week, frequency of viewing pornography depicting unprotected Anal Intercourse.	# UAI male partners for both receptive and insertive acts. Whether participant had engaged in serodiscordant or potentially serodiscordant UAI (yes/no)	Receptive UAI ^d : marginal correlation. Linear trend significant*: rate increased as viewing time increased. Insertive UAI ^c : correlation/linear trend not significant. Serodiscordant UAI ^d : correlation not significant. Positive linear trend significant*. Preference for UAI porn increased risk behaviour* and preference for viewing safe anal intercourse had significantly less risk behaviour, compared to no preference*.	NR	9

Author, year & country	Type of Study	Population (N)	Gender	Mean age (SD; range)	Sexual orientation	Pornography variable	Relevant Outcome variable(s) & measure(s)	Statistics reported	Effect Size	QIS
Sinkovic, Stulhofer, and Bozic (2013); Croatia	Cross-sectional	Probabilistic, multi-stage stratified national sample (N=1005)	49.3% female, 50.7% male	NR (NR; 18-25)	94.2% "Heterosexual"	Age at first exposure to pornography, frequency of viewing over previous 12 months	Sexual risk taking (Index of: early sexual debut (<15 yrs), condom use during last intercourse, consistent condom use over past month, concurrent sexual relationships, intercourse with unknown person)	Sexual Risk Taking Index: females: negatively correlated with age at first exposure** and not significantly correlated with frequency of use; males: negatively correlated with age at first exposure*** and not significantly correlated with frequency of use; Age at first exposure*** but not frequency of use significant predictor in regression analysis ^e .	<u>Sexual Risk Taking Index:</u> age at first exposure $\beta=.14$	12

Author, year & country	Type of Study	Population (N)	Gender	Mean age (SD; range)	Sexual orientation	Relevant Pornography variable(s)	Relevant Outcome variable(s) & measure(s)	Statistics reported	Effect Size	QIS
Stein, Silvera, Hagerty, and Marmor (2012); US	Cross-sectional	Community sample of non-monogamous MSM (N=821)	Males	Mean NR, median =32 (18-68)	90.7% "gay identified"	Proportion of pornography viewed which depicted UAI	UAI behaviour in prior 3 months (receptive anal sex acts, insertive anal sex acts or both)	Viewing pornography which depicted UAI was significantly associated with engaging in UAI***; Those who viewed UAI pornography 25-74%** and 75-100%*** of the time had an increased UAI (insertive) acts in the previous 3 months when compared to those who only viewed UAI pornography 0-24% of the time. The finding were similar for UAI receptive acts (25-74%* and 75-100%*** when compared to those viewing UAI pornography 0-24% of the time) and for both insertive and receptive UAI acts (25-74%*** and 75-100%*** when compared to those viewing UAI pornography 0-24% of the time)	<u>UAI (insertive):</u> UAI pornography 25-74% OR=1.9; 75-100% OR=4.4 <u>UAI(receptive):</u> UAI pornography 25-74% OR=1.7 75-100% OR=3.5 <u>UAI(both):</u> UAI pornography 25-74% OR=2.9, 75-100% OR=8.1	12
Štulhofer, Buško & Landripet (2010); Croatia	Cross-sectional	Sexually active college students/youth who have used pornography (N=650)	Males	NR, range 18-25	NR	Paraphilic pornography use (last 12 months).	lifetime # sexual partners	Paraphilic pornography users had an increased # of lifetime sexual partners*, than users of non-paraphilic pornography.	<u>NR</u>	10

Author, year & country	Type of Study	Population (N)	Gender	Mean age (SD; range)	Sexual orientation	Pornography variable	Relevant Outcome variable(s) & measure(s)	Statistics reported	Effect Size	QIS
Træen & Daneback (2013); Norway	Cross-sectional	Random sample drawn from population register (N=2381)	59% female, 41% male	NR (NR; 18-59)	95% "heterosexual" 5% "gay/lesbian/bisexual"	% of time watching pornography while masturbating and % time viewing pornography during sex (past 12 months)	Number of lifetime, past 5 years, 3 years, 12 months of male and female partners	<p><i>% time viewing pornography while masturbating:</i></p> <p>Heterosexual women: lifetime male***, 5 years male***, 3 years male***, 12 months male*** (<i>ns</i> for all others); Lesbian/bisexual women: <i>ns</i> for all;</p> <p>Heterosexual men: 5 years female**, 3 years female**, 12 months female*, 3 years male* (<i>ns</i> for all others), gay/bisexual men: <i>ns</i> for all;</p> <p><i>% time viewing pornography during sex:</i> Heterosexual women: <i>ns</i> for all; Lesbian/bisexual women: 3 years female* (<i>ns</i> for all others); Heterosexual men: 5 years female*, 5 years male*, 3 years male**, 12 months male***, (<i>ns</i> for all others), gay/bisexual men: <i>ns</i> for all;</p>	<p><u>Heterosexual women:</u> lifetime male: $r=.16$, 5 years male $r=.17$, 3 years male $r=.17$, 12 months male $r=.16$;</p> <p><u>Heterosexual men:</u> 5 years female $r=.12$, 3 years female $r=.12$, 12 months female $r=.09$, 3 years male, $r=.36$; <u><i>% time viewing pornography during sex:</i></u></p> <p><u>Lesbian/bisexual women:</u> 3 years female $r=.45$</p> <p><u>Heterosexual men:</u> 5 years female $r=.10$, 5 years male $r=.43$, 3 years male $r=.50$, 12 months male $r=.64$.</p>	7

Author, year & country	Type of Study	Population (N)	Gender	Mean age (SD; range)	Sexual orientation	Pornography variable	Relevant Outcome variable(s) & measure(s)	Statistics reported	Effect Size	QIS
Weinberg et al. (2010); US	Cross-sectional	College students in a sociology course (N=172)	59% female, 41% male		Females: 68% "heterosexual", 32% "non-heterosexual"; Males: 73% "heterosexual", 27% "non-heterosexual"	Frequency of pornography viewing over the past 12 months (X-rated movies, pornography in magazines, or IP).	# sexual partners over past 12 months where they a) didn't know them/just met b) friend or acquaintance c) were on a first date with d) had previously dated or e) were significantly involved with	Pornography use associated with increased # sexual partners in past 12 months for those they were currently significantly involved with** for heterosexual females (<i>ns</i> for all other types of partner). Pornography use associated with increased # sexual partners in past 12 months for those they had previously dated* and those they were currently significantly involved with* (<i>ns</i> for all other types of partner). However no associations for heterosexual & non-heterosexual males (all <i>ns</i>)	<u>Heterosexual Females:</u> for (e): $\beta=0.39$, OR=1.48 <u>Non-heterosexual Females:</u> for (d): $\beta=0.92$, OR=2.50 for (e): $\beta=0.54$, OR=1.72	6
Wright (2012a); US	Cohort	General Social Survey data from 2006 and 2008 (N at Time 1 [T1]=1021, N at Time 2 [T2]=1022)	58%	T1: 45.0 (16.8, 18-89) T2: 47.2 (16.8, 19-89)	NR	Pornography exposure in the past 12 months (yes/no)	Engagement in casual sex in the past year	Pornography exposure at T1 was associated with increase in odds of casual sex at T2, after controlling for T1 casual sex behaviour.	Odd ratio= 1.92	11
Wright (2013); US	Cross-sectional	General Social Survey data from 23 time points (independent samples) during 1973-2010 (N=14,193),	Males	44.73 (17.03; 18-89)	NR	Pornography exposure in the past 12 months (yes/no)	# sexual partners over past 12 months (14 data points), # over past 5 years (11 data points), condom use during last encounter (9	Pornography use positively associated with # sexual partners in past 12 months ^{e***} and past 5 years ^{e***} ; Unmarried pornography users were more likely to use a condom than non-users**.	<u># partners 12 months:</u> $\beta=.17$, $r=.25$ (1980s $r=.29$, 1990s $r=.20$, 2000s $r=.27$) <u># partners 5 years:</u> $\beta=.20$, $r=.32$ (1990s $r=.26$, 2000s $r=.34$) <u>condom</u>	13

							data points)		use: $r=-.06$	
Wright et al (2013); US	Cross-sectional	General Social Survey data from 23 time points (independent samples) during 1973-2010 (N=18,225),	Females	46.1 (17.9; 18-89)	NR	Pornography exposure in the past 12 months (yes/no)	# sexual partners over past 12 months (14 data points), # sexual partners over past 5 years (11 data points)	Pornography use positively associated with # sexual partners in past 12 months ^{e**} and past 5 years ^{e**} .	# partners 12 months: $\beta=.12$, $r=.24$; (1980s $r=.21$; 1990s: $r=.22$; 2000s $r=.26$) # partners 5 years: $\beta=.16$, $r=.28$; (1990s: $r=.24$; 2000s $r=.32$)	13
Wu et al (2014); China	Cross-sectional	Representative community sample of rural-to-urban migrants (N=4,069)	Males	30.1 (NR;18-49)	NR	Frequency of pornography use	Having had multiple sexual partners	Odds of having multiple sexual partners higher for greater frequency of pornography use **	Frequently use pornography: OR=1.00, sometimes use: OR=.67, never use: OR=.31	11

Note: **UAI**= Unprotected Anal Intercourse, **NR**= Not reported **MSM** = Men who have sex with men

* $p<.05$, ** $p<.01$ *** $p<.001$

a = controlling for age, dating status, religiosity, and impulsivity.

b = controlling for Age, income, substance use (sex drugs and alcohol), perceived risk of unprotected anal intercourse and condom use self-efficacy.

c = controlling for gender, religiosity and dating status

d= controlling for age, education, ethnicity, HIV-serostatus, long-term relationship status, # male sexual partners, drug use in previous 90 days, positive and negative affect, social desirability, compulsive sexual behaviour, internalized homonegativity.

e = controlling for age, ethnicity, education & religiosity.

Table 2.3.

Quality Index Scale Means and Standard Deviations for Internet Pornography Studies

	Sexual Risk Behaviour	Reporting	External Validity	Internal Validity	Power	TOTAL
Nelson et al (2014)	UAI	3	0	4	0	7
Peter & Valkenburg (2011)	Condom Use	7	2	4	0	13
	<i>M</i>	5.00	1.00	4.00	0.00	10.00
	<i>SD</i>	2.83	1.41	0.00	0.00	4.24

Note: UAI= Unprotected Anal Intercourse.

Table 2.4.

Quality Index Scale Means And Standard Deviations For Unspecified Pornography Studies

	Sexual Risk Behaviour	Reporting	External Validity	Internal Validity	Power	TOTAL
Carroll et al (2008)	# Sexual Partners	5	0	4	0	9
Eaton et al (2012)	# Sexual Partners, UAI	7	2	4	0	13
Kraus & Russell (2008)	# Sexual Partners	4	0	2	0	6
Morgan (2011)	# Sexual & # Casual Partners	4	0	4	0	8
Poulsen et al (2013)	# Sexual Partners	4	0	3	0	7
Rosser et al (2013)	UAI	5	1	3	0	9
Sinkovic et al (2012)	Sexual Risk Taking Index	5	3	4	0	12
Stein et al(2012)	UAI	6	2	4	0	12
Stulhofer et al (2010)	# Sexual Partners	6	0	4	0	10
Traeen (2013)	# Sexual Partners	2	2	3	0	7
Weinberg et al (2010)	# Casual Partners	3	0	3	0	6
Wright (2012a)	Engagement in Casual Sex	4	3	4	0	11
Wright (2013)	# Sexual Partners, Condom Use	6	3	4	0	13
Wright et al (2013)	# Sexual Partners	6	3	4	0	13
Wu et al (2014)	Multiple Sexual Partners	4	3	4	0	11
	<i>M</i>	4.73	1.47	3.60	0.00	9.80
	<i>SD</i>	1.33	1.36	0.63	0.00	2.57

Note: UAI= Unprotected Anal Intercourse,

2.3.1 Unsafe sex practices and condom use

Seven studies (Eaton et al., 2012; Nelson et al., 2014; Peter & Valkenburg, 2011a; Rosser et al., 2013; Sinkovic et al., 2013; Stein et al., 2012; Wright, 2013), including the two internet pornography studies, investigated the association between pornography use and safer sex practices. All seven studies found evidence of an association; however, the direction of this relationship varied. In a community sample of HIV-negative men who have sex with men (MSM), time spent viewing pornography was associated with the number of unprotected insertive, but not receptive, anal sex acts in the previous month (Eaton et al., 2012). In a similar study, Stein et al. (2012) examined a non-monogamous sample of MSM, and found that watching pornography containing unprotected anal intercourse was correlated with engaging in both unprotected insertive and receptive anal intercourse. Similarly, in a sample of MSM, Nelson et al. (2014) found that the odds of engaging in unprotected anal intercourse were higher as the amount of unprotected anal intercourse viewed in pornography increased. In addition, the odds of having knowingly engaged in sero-discordant unprotected anal intercourse were also higher for greater amounts of unprotected anal intercourse viewed in pornography. Rosser et al. (2013) found that MSM who reported using pornography for more than one hour per day were more likely to have engaged in unprotected receptive anal intercourse or HIV sero-discordant anal intercourse than those who viewed less or none. This association was, however, no longer significant when other variables, including the preference for viewing pornography with or without unprotected anal intercourse were controlled for, suggesting that this correlation may be partly explained by personal preferences, rather than the influence of pornography. Furthermore, those who had a preference for viewing pornography containing unprotected anal sex reported more

unprotected anal intercourse than those who had no preference, whilst those with a preference for viewing pornography depicting protected anal intercourse reported significantly lower risk behaviour (Rosser et al., 2013). Contrary to Eaton et al. (2012), no associations for unprotected insertive intercourse were significant.

Examining young Croatian adults in a nation-wide survey, Sinkovic et al. (2013) created an index of sexual risk taking, which included whether participants had an early sexual debut (<15 years), previous experience of concurrent sexual relationships or casual sex, condom use during the most recent sexual encounter and consistent condom use over the past month. A higher sexual risk taking index was correlated with younger age of first exposure to pornography in both males and females. Despite this, frequency of pornography use over the previous 12 months was not linked to sexual risk taking for either gender.

Wright (2013) examined the correlation between pornography and condom use across eight time points between 1996 and 2010, in males from the general population in the US. While relationships were weak and inconsistent across timeframes, overall, unmarried males who consumed pornography were more likely to use condoms than unmarried non-consumers, even after controlling for relevant demographic variables. This result contrasts with the findings of Nelson et al. (2014), Eaton et al. (2012) and Stein et al. (2012). However, this study did not differentiate participants based upon sexuality, whereas the above studies examined only MSM. The disparate result also may reflect the dichotomous measure of pornography use which Wright (2013) utilised, as it did not take into account viewing frequency, viewing duration, history of pornography use or how recent use had been.

Only one study specifically investigated the association between internet pornography and unsafe sex practices. Peter and Valkenburg (2011a) examined a random community sample across two time points six months apart. Increased frequency of internet pornography use in the preceding six months was associated with casual sex without a condom at both time points; and this correlation remained significant after controlling for relevant demographic variables. It is of note that these findings represented a small effect size, and contrasted with the results of the comparative sample reported in Sinkovic et al. (2013). Despite this, the findings appear to be consistent with MSM samples (Eaton et al., 2012; Nelson et al., 2014; Rosser et al., 2013; Stein et al., 2012).

2.3.2 Number of sexual partners

Ten studies (Carroll et al., 2008; Eaton et al., 2012; Kraus & Russell, 2008; Morgan, 2011; Poulsen et al., 2012; Stulhofer et al., 2010; Traeen & Daneback, 2013; Wright, 2013; Wright, Bae, & Funk, 2013; Wu et al., 2014) examined the association between pornography use and number of sexual partners. The overall results suggested that there is a robust association between pornography use and a higher number of sexual partners. No studies specifically examined internet pornography in relation to this variable. Carroll et al. (2008) found that in a sample of university students, pornography viewing frequency was associated with a higher number of lifetime sexual partners for both genders, and a higher number of sexual partners over the previous 12 months in females, but not males; although the effects sizes were very small (see Table 2.2). Additionally, compared to non-users, male monthly pornography users had a significantly greater number of partners over the previous 12 months, while those who

viewed it daily reported lower numbers. Similarly, Traeen and Daneback (2013) found that time spent viewing pornography while masturbating was significantly associated with a greater number of sexual partners over the past five years, three years and 12 months for heterosexual, but not non-heterosexual males and females. The association with lifetime number of partners was only significant for heterosexual females. In addition, time spent watching pornography while having sex was correlated with number of sexual partners in heterosexual males, but not females, and number of partners over the previous three years for non-heterosexual females, but not males. Contrasting the findings Traeen and Daneback (2013), Eaton et al. (2012) established that time spent viewing pornography per week was significantly associated with a higher number of sexual partners in the previous month for HIV-negative MSM.

In further support of an association between number of sexual partners and pornography use, Morgan (2011) found that frequency of pornography use was significantly and positively correlated with lifetime number of sexual partners for both males and females; however, these findings still reflected small effect sizes. Supporting other findings (Morgan, 2011; Traeen & Daneback, 2013), in a study conducted with the general US population across multiple time points, pornography use was associated with a higher number of sexual partners over both the previous 12 months and five years for both females (Wright et al., 2013) and males (Wright, 2013), when controlling for demographic variables. These correlations represented a small to medium effect size; however, the unique contribution of pornography use was very low, accounting for only 1-2% and 3% of the variance for females and males, respectively. In line with Wright (2013) and Wright et al. (2013), Stulhofer et al. (2010) found that male paraphilic pornography users had a significantly greater lifetime number of sexual

partners than non-paraphilic users and Poulsen et al. (2012) demonstrated that for both males and females, pornography users reported a significantly greater lifetime number of sexual partners than non-users. Furthermore, Wu et al. (2014) found that the odds of having had multiple sexual partners were greater for higher frequencies of pornography use in Chinese rural-to-city migrant males. Only one study (Kraus & Russell, 2008) did not find an association for number of sexual partners; however, this may have been because this variable was examined in relation to exposure to pornography during adolescence, and not current frequency of use. Accordingly, frequency of pornography use appears to have a robust association with the lifetime number of sexual partners, although the evidence for this association in shorter and more recent time periods is mixed, and appears to be stronger for females than males.

2.3.3 Casual sex behaviour

In total, only three studies (Morgan, 2011; Weinberg et al., 2010; Wright, 2012a) examined the association between pornography use and number of casual sex partners. No studies specifically examined internet pornography in relation to this variable. Morgan (2011) found that in college students, the frequency of pornography use, and the number of different types of media used, were significantly and positively correlated with lifetime number of casual sex partners, although these findings reflected small effect sizes. Wright (2012a) also found support for this association, establishing in a nation-wide longitudinal study that pornography exposure at baseline was associated with an almost twofold increase in the odds of casual sex at a 2-year follow up, even after controlling for baseline casual sex behaviour. Conversely,

Weinberg et al. (2010) found that for females, frequency of pornography use was only associated with a greater number of partners in the previous 12 months with whom participants were significantly involved, and did not reflect an increase in casual sex partners; this association was not replicated for males.

2.4 Discussion

The objective of this systematic review was to evaluate the relationship between pornography consumption and indicators of sexual risk behaviours in adults. All 17 articles supported an association, with findings generally comparable across internet pornography and unspecified pornography studies where there was available literature. Sexual risk behaviours may have serious consequences for physical and sexual health, and the findings of this review highlight the importance of this topic and the need for further research into how pornography use fits into the broader picture of sexual risk behaviours. There was a paucity of research especially for condom use and casual sex behaviour, and no research investigating actual history of STI incidence, which may be considered to be a more robust indicator of sexual risk behaviour. Accordingly, this variable would be an important addition to future research, in order to enhance methodological rigour.

The relatively low means obtained for the quality assessment suggests that methodological improvements in this field of research are needed. The main area of concern was external validity, reflecting the biased and inadequately sampled populations used in these studies. The studies often employed convenience sampling (usually young adult college students) to recruit participants (e.g. Carroll et al., 2008; Morgan, 2011; Perry et al., 2007;

Stulhofer et al., 2010; Štulhofer et al., 2008), and further research using community samples would allow more generalisability of results. Random sampling and increased reporting of response rates is also recommended. In addition, many studies examined very specific populations. For example, four studies examined only MSM (Eaton et al., 2012; Nelson et al., 2014; Rosser et al., 2013; Stein et al., 2012) and a further four studies restricted their participants to males (Stulhofer et al., 2010; Twohig, Crosby, & Cox, 2009; Wright, 2013; Wu et al., 2014). Poor replication does not lend confidence to the existing findings, and thus further replication, both within specific and broader community populations, is required.

As the current review consisted entirely of predictive studies, the causal relationship between pornography use and sexual risk behaviours is unable to be determined. It may be speculated that sexual risk taking leads to pornography use or vice versa, that the effect is bidirectional, or that some other unmeasured variables are mediating this relationship. Three studies attempted to account for this; two (Kraus & Russell, 2008; Sinkovic et al., 2013) examined age at first exposure to pornography and one was longitudinal (Wright, 2012a); although the findings varied between all three studies (see Table 2.2). In addition, the majority of reviewed studies did not compare indicators of sexual risk behaviours to a control population of non-pornography users, which is recommended for future work. Whilst experimental design in this area is practically and ethically difficult to conduct, if accomplished, it would assist our understanding.

Many studies in the review did not provide a definition, or provided inconsistent definitions, of pornography. This has been highlighted as a flaw in the literature and needs to be addressed in order for future research to be more interpretable (Short et al., 2012).

Furthermore, the measurement of pornography use was not uniform, using measures such as frequency of use, viewing time and unreliable dichotomous variables to separate use and non-use. As such, it is difficult to compare findings (Short et al., 2012). Furthermore, only two studies (Morgan, 2011; Stulhofer et al., 2010) examined how pornography genre relates to risky sexual behaviours. In both studies, support was found for differences between pornography types. Additionally, it is important to note that the studies included in this review that examined unspecified pornography use may have actually included unreported internet pornography use. As such, it is unclear whether similarities between the results for different media types reported in this review reflect this methodological issue. Accordingly, future research should attempt to control for such factors when investigating pornography consumption and sexual risk behaviours.

Finally, there was a lack of theory driven research in the literature reviewed. Only two studies (Stulhofer et al., 2010; Wu et al., 2014) attempted to test a theory, furthermore, only four additional studies (Peter & Valkenburg, 2011a; Sinkovic et al., 2013; Wright, 2012a, 2013; Wright et al., 2013) cited relevant theories to support their hypotheses or results. Future research would benefit from theory driven study designs, in order to clarify how pornography fits into the broader picture of sexual risk behaviour.

2.4.1 Unsafe sex practices and condom use

The reviewed literature suggests an association between pornography use and safer-sex practices; however, the nature of this association was varied, and only two studies examined females (Eaton et al., 2012; Nelson et al., 2014; Peter & Valkenburg, 2011a; Rosser et al., 2013;

Sinkovic et al., 2013; Stein et al., 2012; Wright, 2013). For MSM, findings varied between studies according to the type of intercourse, with the majority of studies only supporting a correlation with unprotected receptive anal intercourse. As the HIV risk for receptive anal sex has been shown to be 30 times greater than that of insertive anal sex acts (Australian National Council on AIDS Hepatitis C and Related Diseases, 2001) this may have implications for the severity of sexual health risk. The findings were less consistent for heterosexual samples, with only weak support for a correlation between pornography use and tendency to practice unsafe-sex. Moreover, only one study examined the association between internet pornography consumption and unsafe-sex practices (Peter & Valkenburg, 2011a). Thus, while the results mirror unspecified pornography studies, the available conclusions are currently limited, and no causal inferences are able to be made.

2.4.2 Number of sexual partners

The appraised literature supports a strong association between a higher number of sexual partners and tendency to use pornography (Carroll et al., 2008; Eaton et al., 2012; Kraus & Russell, 2008; Morgan, 2011; Poulsen et al., 2012; Stulhofer et al., 2010; Traeen & Daneback, 2013; Wright, 2013; Wright et al., 2013; Wu et al., 2014). All but one of the studies included in the review found that pornography use was positively correlated with lifetime number of sexual partners, although no causal direction is able to be inferred from this. Number of sexual partners has not been examined in relation to internet pornography use, so the relationship between these variables is unknown.

2.4.3 Casual sex behaviour

There was a paucity of research in this area, with only three studies (Morgan, 2011; Weinberg et al., 2010; Wright, 2012a) examining the relationship between pornography use and casual sex behaviour. The findings were mixed and require further replication and clarification, due to the greater sexual health risk of casual sex when compared to sex with regular partners.

2.4.4 Conclusions

Taken together, the results from the current review demonstrate that there is an association between pornography use and sexually risky behaviours. Where the literature was available, the results appear to be consistent across both internet pornography and pornography. These findings contribute to the existing body of evidence from adolescents (e.g. Braun-Courville & Rojas, 2009; Luder et al., 2011; Wingood et al., 2001). In light of the current review it seems pertinent that certain pornography users (e.g. paraphilic users, MSM) may be potential targets for sexual health interventions such as internet interventions (Hooper, Rosser, Horvath, Oakes, & Danilenko, 2008; Rosser et al., 2012; Rosser et al., 2011), and this area warrants further investigation.

The current review was limited in several ways, firstly, in the scope of behaviours examined. This did not cover attitudes which may affect or predispose risky sexual behaviours (Conley & Collins, 2005). Furthermore, the scope of the review was not exhaustive in terms of the indicators of sexual risk behaviours identified. Finally, comparison of internet and unspecified pornography studies was limited due to the lack of comparable effect sizes. A meta-analysis may be appropriate for future reviews, when a greater number of studies are available.

Sexual risk behaviours are an important public and sexual health issue, as they may lead to increased STI/HIV transmission and poor health outcomes. This area of research is still in its infancy, and future research should seek shed light on the factors that contribute to risky sexual behaviours. Accordingly, the following chapter describes and reports the results of a study examining the link between a number of sexual risk behaviour variables and pornography use in an adult, Australian sample.

Chapter 3: Sexual Risk Behaviour and Associations With Internet Pornography Use

3.1 Literature Review

As a source of sexual education, pornography has the potential to convey messages about the costs and benefits of sexual risk behaviours (Kubicek, Carpineto, McDavitt, Weiss, & Kipke, 2011). As previously discussed, research into the possible effects of pornography use on sexual risk behaviour, such as unprotected or casual sex, has largely been conducted in adolescents (Peter & Valkenburg, 2011a). In the previous chapter, a systematic review of the literature highlighted the paucity of research investigating this issue in adult pornography consumers. Accordingly, the current study sought an understanding of the link between internet pornography use and sexual risk behaviour in adult Australians. In order to sufficiently address this research aim, the study encompassed a broad range of variables considered to be indicators of sexual risk behaviour, including sexual sensation seeking, sexual compulsivity, attitudes towards condoms, unsafe sex, casual sex activity and sexual partners.

3.1.1 Sexual sensation seeking

Sexual sensation seeking is defined as “the propensity to attain optimal levels of sexual excitement and to engage in novel sexual experiences” (p.387, Kalichman et al., 1994) and it is encompassed within the multidimensional trait of general sensation seeking, which includes thrill and adventure seeking, experience seeking, disinhibition and susceptibility to boredom (Zuckerman, 1994). Support has been found for increased general sensation seeking in pornography users in adults (Wetterneck, Burgess, Short, Smith, & Cervantes, 2012), young adults (Perry et al., 2007; Weisskirch & Murphy, 2004) and adolescents (Luder et al., 2011; Peter & Valkenburg, 2006, 2011b; Rosser et al., 2012). However, less research

has been conducted specifically examining sexual sensation seeking, which is more relevant to sexual health behaviour (Gullette & Lyons, 2005; Kalichman & Rompa, 1995). Sexual sensation seeking behaviours may result in an increased risk of contracting STIs, through engagement in unsafe sex behaviour with multiple partners (Gullette & Lyons, 2005; Kalichman & Rompa, 1995).

Preliminary evidence indicates a link between sexual sensation seeking and pornography use, however internet pornography has not been specifically investigated (Perry et al., 2007; Sinkovic et al., 2013). A recent longitudinal study in adolescents found that increases in sensation seeking mediated the effect of exposure to sexual media content, which predicted an increase in sexual risk behaviours such as earlier sexual debut, casual sex without a condom and a higher number of lifetime sexual partners (O'Hara, Gibbons, Gerrard, Li, & Sargent, 2012). As such, it is also worthwhile to consider the confounding role that sexual sensation seeking may play in sexual risk behaviour, when examining the link between pornography use and unsafe sex or condom attitudes (Sinkovic et al., 2013).

3.1.2 Sexual compulsivity

Sexual compulsivity, which is the tendency to experience repetitive and intrusive urges to engage in sexual behaviours (Kalichman & Rompa, 1995), is associated with negative financial, emotional, occupational, personal and physical outcomes (Kalichman & Rompa, 2001; Parsons, Kelly, Bimbi, Muench, & Morgenstern, 2007). Sexual compulsivity has also been linked to resistance towards adopting sexual risk-reduction strategies and as such, may lead to significant physical, psychological, legal and sexual health problems (Kalichman & Rompa, 1995). It is therefore essential to determine whether a relationship between pornography use and sexual compulsivity exists, and elucidate the nature of this relationship, in addition to considering the potential confounding effect that this variable

may have on other measures of sexual risk behaviour (e.g. condom attitudes and unsafe sex). This is particularly important, as it may assist in identifying when pornography use may become problematic and for whom (Twohig et al., 2009). Accordingly this may assist in developing effective and targeted interventions for this population. A robust association between pornography use and sexual compulsivity has been demonstrated in a variety of populations including MSM, heterosexual adults and young adults (e.g. Parsons et al., 2007; Perry et al., 2007; Stulhofer et al., 2010; Štulhofer et al., 2008; Twohig et al., 2009; Wetterneck et al., 2012). Nonetheless, there is limited research examining its link with internet pornography use, and no research has been undertaken with an Australian sample.

3.1.3 Condom attitudes and safer sex

As previously outlined, safe-sex messages and practices are inconsistent or most frequently absent in pornography. A recent content analysis of pornographic films established that condom use was depicted in only 3% of penile-vaginal intercourse scenes and 10% of penile-anal, male-on-male intercourse scenes (Grudzen et al., 2009). Reduced control and regulation over the depiction of safe-sex in internet pornography has also been contributed to by the growing accessibility and availability of amateur pornography appearing online (Green, 2004). Nonetheless, pornography has been identified as important source of sexual education (Kubicek et al., 2010). In the context of social-cognitive theory, Bandura (1986) suggests that individuals may learn unsafe sex behaviours through pornographic depiction of explicit rewards associated with this behaviour (e.g. male orgasm and gratification), which is coupled by an absence of associated punishments or negative consequences (Seto, Maric, & Barbaree, 2001). As unsafe sex behaviour has a direct impact upon risk of contracting STIs and unwanted pregnancy, this is a crucial area of investigation and may be an important public health issue.

There is emerging evidence for a correlational link between unsafe sex behaviours, negative attitudes towards condoms and higher incidence of STIs in adolescent populations (Luder et al., 2011; Regassa & Kedir, 2011; Wingood et al., 2001), however, some discrepancies exist within the literature (e.g. Gold & Skinner, 1992; Hong, Li, Mao, & Stanton, 2007). Conversely, as highlighted by the systematic review in chapter two, there are limited research studies that have examined this relationship in adults, and the findings thus far are inconsistent. While pornography use has been found to have a strong association with a greater incidence of unprotected sex in MSM (e.g. Eaton et al., 2012; Rosser et al., 2013; Stein, Silvera, Hagerty, & Marmor, 2011), the findings for heterosexual populations have been mixed (see Tables 2.1 and 2.2 in previous chapter for a summary of Peter & Valkenburg, 2011a; Sinkovic et al., 2013; Wright, 2011b). In terms of attitudes towards STI prevention and safer sex in adults, pornography consumption has been linked to greater perceived importance of practicing safer sex in young adults (Morrison, Harriman, Morrison, Bearden, & Ellis, 2004) and positively associated with interest in having protected, but not unprotected, anal sex in MSM (Hald, Smolenski, et al., 2013). On the other hand, another study conducted with young Chinese adults found no evidence of a link with knowledge of HIV prevention (Hong et al., 2007), and there is a paucity of literature examining specific attitudes towards condoms. Accordingly, it is currently unclear whether a link between pornography use and safer-sex attitudes and behaviour exists, and the inconsistent findings to date have been poorly replicated. Potentially, the current state of the literature reflects the variety of populations examined, and discrepancies in how condom use and “safe sex” have been measured (Noar, Cole, & Carlyle, 2006). It is also important to note that no known studies to date have examined the link between pornography use and actual STI incidence in adults, which is a much more reliable measure of sexual risk behaviour.

3.1.4 Number of sexual partners and casual sex behaviour

As previously noted, increased risk of STI transmission is also connected to casual sex, and a higher number of sexual partners (Braun-Courville & Rojas, 2009; Eaton et al., 2012). Overall, the literature appears to support a robust association between pornography use and a higher number of lifetime sexual partners in a variety of populations including MSM, young adults and adolescents, although findings are less consistent for shorter time periods such as the previous six or 12 months (e.g. Braun-Courville & Rojas, 2009; Carroll et al., 2008; Eaton et al., 2012; He et al., 2006; Morgan, 2011; Weinberg et al., 2010; Wright, 2012a). There is also emerging evidence for a greater number of casual sexual partners (Morgan, 2011; Wright, 2012b); however, this relationship has not been consistently established (e.g. Weinberg et al., 2010).

3.1.5 Hypotheses

Based upon the current theory and literature to date, a number of hypotheses are proposed for the present study:

1. Frequency of internet pornography use will be correlated positively with sexual sensation seeking scores.
2. Frequency of internet pornography use will be correlated positively with sexual compulsivity scores.
3. Less positive attitudes towards condoms will be predicted by frequency of internet pornography use, when controlling for relevant variables including demographic data, sexual sensation seeking, sexual compulsivity and age of first exposure to pornography.
4. The odds of intending to use a condom in the next two months will significantly decrease as frequency of internet pornography use increases, when controlling for relevant variables.

5. Internet pornography users will have engaged in significantly greater amounts of casual unsafe sex in the preceding month, when compared to non-users.
6. A higher number of sexual partners over the previous month and across participants' lifetime will be associated with frequency of internet pornography use, when controlling for relevant variables.
7. The odds of having a history of an STI will increase as frequency of internet pornography use increases, when controlling for relevant variables.

3.2 Methods

3.2.1 Design and procedure

A cross-sectional design was employed, utilising an online community sample. Data were collected from February 2013 through to October 2013. Approval was granted for this study by the University of Sydney Human Research Ethics Committee (see Appendix A). Upon clicking the link to the survey website, participants were presented with the participant information statement (see Appendix B). Participants were informed that submitting a completed version of the survey indicated their consent to participate in the study. They were then directed to click on the link to begin the survey, and were presented with screener questions regarding age and country of residence. Participants were given the option to withdraw and delete their answers, or save the survey for later completion, at any point. All survey data were stored anonymously and securely.

3.2.2 Recruitment

Recruitment followed similar methods to those used in previous research, which have demonstrated effectiveness for sexuality research (e.g. Bechara, Betolino, Casab et al., 2003; Grov, Gillespie, Royce & Lever, 2011; Yoder, Virden & Amin, 2005). Participants were

recruited through social media websites (Twitter, Facebook), online bulletin boards (Reddit), a university e-newsletter and website, online community noticeboards, an advert in the Australian Sex Party e-newsletter, local and metropolitan newspaper articles and radio (see Appendix C for advertisement wording). Ethics approval was also given for passive snowballing, such that interested individuals could share the study advertisement via email, social media and word of mouth. Participants were given the option at the end of the survey to provide their email address so that they could be entered into a draw to win a \$50 gift card for their participation. Some participants ($n = 96$) participated in the study for course credit in their undergraduate psychology studies, and were recruited through their course website.

3.2.3 Participants

Participants had to (a) be over 18 years of age and (b) be residing in Australia at the time of survey completion. While there were no exclusion criteria for the study, participants were not included in the final analysis if they (a) did not complete the survey or (b) did not seriously complete the questionnaire (as determined by having improbable values on one or more free-response items or by having improbable response patterns such as providing the same rating point for all items on a scale).

A total of 792 people signified their interest in participating in the study by clicking on the link and answering the pre-screening questions about age and country of residence. Of these, 170 were excluded for (a) not meeting study criteria ($n = 8$); (b) not completing the survey ($n = 161$); (c) non-serious attempts on the survey ($n = 1$). For statistical reasons participants who indicated that they were transgendered were excluded due to the very low number who partook in the study ($n=2$). Accordingly, 620 participants were included in the study ($N= 491$ pornography users, $129=$ non-users), of whom 51.9 % were female.

Participants ranged in age from 18 to 72 ($M=27.78$, $SD=10.51$) and had an average of 16.07 years ($SD=3.04$) of education. Table 3.1 describes the demographic characteristics of the final sample in more detail.

3.2.4 Measures

The questionnaires administered to participants are described in detail below. For a complete overview of the survey and individual items of each questionnaire, please see Appendix D. The survey was tested on a small group of individuals prior to the beginning of the study in order to ensure that the questionnaires were understandable, clear and contained no errors.

3.2.4.1 Demographics

Participants were required to indicate their age, gender, ethnicity, religiosity, years of education, and sexual orientation in the first part of the survey. Participants were then asked whether they were currently in a committed or sexual relationship.

Table 3.1

Demographic Characteristics of the Sample

		Males (n=298)		Females (n=322)	
		N	%	N	%
<i>Internet Pornography Use</i> *	Non-user	10	3.4	119	37.0
	User	288	96.6	203	63.0
<i>Religiosity:</i>	Non-religious	241	80.9	259	80.4
	Religious	57	19.1	63	19.6
<i>Ethnicity</i> [†] :	Anglo-Australian	187	62.8	180	55.9
	Aboriginal, Torres Strait or South. Sea Islander	0	0	1	.3
	Pacific islander	1	.3	2	.6
	European	36	12.1	48	14.9
	African or Middle Eastern.	6	2.0	6	1.9
	Asian	29	9.7	54	16.8
	Latin American	6	2.0	1	.3
	Mixed	26	8.7	21	6.5
<i>Identified Sexuality</i> *::	Heterosexual	228	76.5	256	79.5
	Homosexual	43	14.4	7	2.2
	Bisexual	22	7.4	43	13.4
	Other (“queer”, “pansexual”, “unsure”)	5	1.7	16	5.0
<i>Relationship Status</i>	Single	111	37.2	110	34.2
	In a sexual relationship only	19	6.4	16	5.0
	In a romantic relationship	168	56.4	196	60.9

* Chi-Square for gender significant at the $p < .001$

[†] Missing data for 7 male participants and 9 female participants.

Anglo-Australian= Australian, New Zealand, British, North American or Canadian origin

3.2.4.2 Pornography consumption

Details regarding pornography consumption were assessed using an abbreviated version of the Pornography Use Characteristics Questionnaire (PUCQ), which was created for the purposes of the current research. Items pertaining to frequency of internet pornography use, paraphilic genre use and age of first exposure were included. The full measure is described in chapter 4 (section 4.2.3.2), however, a summary of the items relating to this study is given here. At the beginning of the questionnaire, participants were informed of the definition of pornography as

Any kind of material aiming at creating or enhancing sexual feelings or thoughts in the recipient and, at the same time, containing explicit exposure and/or descriptions of the genitals and clear explicit sexual acts (Hald & Malamuth, 2008; p.616).

Frequency of pornography use was assessed by asking participants to indicate how often they had deliberately accessed internet pornography on average in the past 12 months, with 11 answer categories, taken from Bridges and Morokoff (2010). Categories included never or more than 12 months ago, once in the last 12 months, once in the last six months, less than once a month, one to two times a month, three to four times a month, five to six times a month, once a day or more than once a day. Participants who indicated that they had consumed internet pornography in the last 12 months were then assessed for paraphilic pornography use utilising a question taken from Stulhofer et al. (2010), which asked participants to indicate whether they had viewed pornography containing Bondage and Discipline and/or Sadomasochism (BDSM), fetishism, bestiality or violent/coercive sexual activities in the previous 12 months. Finally, participants were asked the age at which

they were first exposed to any kind of pornography. Please refer to chapter 4 (section 4.2.3.2) for further details about this measure.

3.2.4.3 Sexual sensation seeking

The revised Sexual Sensation Seeking Scale (Kalichman & Rompa, 1995) was administered to participants to assess sexual sensation seeking. Participants were required to indicate the extent to which 11 statements (e.g. “I like wild ‘uninhibited’ sexual encounters”, “I like to have new and exciting sexual experiences and sensations”) applied to them, on a 4-point Likert-type scale ranging from 1 (not at all like me) to 4 (very much like me). The total score for this scale is computed by the mean of all items, and may range from 1-4, with higher scores indicating greater sexual sensation seeking. This scale has been demonstrated to be reliable, with acceptable internal consistency (Cronbach’s $\alpha=.79-.81$) and test-retest reliability ($\alpha=.69-.73$). Construct validity was also demonstrated, with the scale correlating positively with HIV risk behaviours, including drug or alcohol use prior to sex, number of sexual partners, unprotected sex, non-sexual sensation seeking and sexual compulsivity, in addition to engaging in a broad range of sexual practices. In the current study, the internal consistency was high (Cronbach’s $\alpha=.85$).

3.2.4.4 Sexual compulsivity

Sexual compulsivity was assessed with the Sexual Compulsivity Scale (Kalichman & Rompa, 1995). This scale requires participants to indicate the extent to which 10 statements (e.g. “My sexual thoughts and behaviours are causing problems in my life”, “I sometimes get so horny I could lose control.”) apply to them, on a 4 point Likert-type scale ranging from 1 (not at all like me) to 4 (very much like me). The total score for this scale is the mean of all items, and may range from 1-4, with higher scores indicating a tendency for greater sexual

sensation seeking. This scale has demonstrated good reliability, with high internal consistency (Cronbach's α = .86-.87) and acceptable test-retest reliability (α = .69-.80). Construct validity was also demonstrated, with the scale correlating negatively with self esteem and positively with HIV risk behaviours, including alcohol or drug use prior to sex, number of sexual partners, unprotected sex, non-sexual and sexual sensation seeking, sexual compulsivity and engaging in a broad range of practices. In the current study, the internal consistency was high (Cronbach's α = .88).

3.2.4.5 Condom attitudes

To assess attitudes towards condom use the UCLA Multidimensional Condom Attitudes Scale (Helweg-Larsen & Collins, 1994) was administered. This is a 25-item scale, consisting of five dimensions related to indicators of attitudes towards condom use, including reliability and effectiveness, pleasure, identity stigma, embarrassment about negotiation and use, and embarrassment about purchase. Respondents are required to indicate how much they agree with each statement about condom use on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). Due to the multidimensional nature of the scale, a total global score is not obtained for this measure. Total scores for each of the subscales may range from 5-35, with higher scores indicating more positive attitudes about condoms. In a series of three studies with undergraduates conducted by Helweg-Larsen and Collins (1994), the subscales were demonstrated to have acceptable to high levels of internal consistency. The scale also has demonstrated construct validity; scores on the MCAS subscales correlate with gender, sexual experience, intended condom use and past condom use behaviour. In the current study, Cronbach's alpha ranged from .81 to .93 for the MCAS subscales, demonstrating good to excellent reliability.

3.2.4.6 STI incidence

Participants were asked to indicate whether they had ever been diagnosed with an STI (yes/no answer option).

3.2.4.7 Using a condom during casual sex

Participants were asked to indicate how many times they had engaged in sexual intercourse with casual sexual partners. If they had engaged in casual sex in the previous month, they were then asked to indicate on how many of these occasions they had used a condom. The number of times a condom was used was divided by the number of incidences of casual sex, to form a proportion of casual sex using a condom over the previous month. To assess intention to use a condom in the future, an item from Conley and Collins (2005) was utilised. Participants were asked to give the probability (a percentage out of 100) that they would use a condom for each instance of sexual intercourse for the next two months. This variable was then recoded into non-definite use (less than 100% probability, coded 0) and definite use (100% probability, coded 1).

3.2.4.8 Sexual partners

Participants were asked to indicate the number of people with whom they had engaged in sexual intercourse over the previous month and across their lifetime.

3.3 Results

Due to the significantly larger proportion of male internet pornography users, analyses were separately conducted for males and females. Descriptive statistics and frequencies for the main outcome variables of interest can be seen in Table 3.2 and 3.3, respectively. Due to the very small proportion of males who indicated they had never used internet pornography or not used it in the past 12 months ($n=10$), frequency of internet

pornography use for male data was separated into three dummy coded variables, comparing monthly, weekly or daily use to a reference group of rare use (never used or not in the last 12 months, or uses less than monthly). Conversely, a greater number of female participants used internet pornography less than monthly and not at all. Thus, to avoid losing information, data for females was separated into four dummy coded variables, comparing less than monthly, monthly, weekly and daily users to a reference group of non-users (never used, or not in the last 12 months). Initially, correlational analyses were carried out to investigate the basic associations between frequency of internet pornography use (transformed into a continuous variable, measured in days) and the key experimental variables. The pattern of correlations can be seen in Table 3.4.

With alpha set at .05, a series of hierarchical multiple regressions and binary logistic regressions (where the outcome variable was dichotomous) were then performed for each of the outcome variables of interest. Preliminary analyses were conducted to ensure there were no violations in the assumptions of linearity, normality, and homoscedasticity through examining the normal probability and residual plots. Variance Inflation Factors (VIFs) and tolerance values indicated no harmful levels of multicollinearity. VIFs above 10 and tolerance values below .10 may signal harmful levels of multicollinearity (Belsley, 2004). VIFs in the current regression models did not exceed 4.11 and 2.59, and tolerance values were .24 and .39 or greater, for males and females, respectively. The predictor variables were entered in two steps; step one comprised of demographic and personality trait variables to be controlled for, including age, religiosity, ethnicity, relationship status, sexual orientation, sexual sensation seeking scale scores and sexual compulsivity scale scores. Step two encompassed the pornography variables, including each of the pornography frequency of

use dummy coded variables, whether paraphilic pornography was viewed and age of first exposure to pornography.

Table 3.2

Descriptive Statistics for the Main Outcome Variables

Variable	Males (n=298)		Females (n=322)		Cohen's <i>d</i>
	<i>M(SD)</i>	<i>Range</i>	<i>M(SD)</i>	<i>Range</i>	
SSSS Average Score	2.48(.58)	1.00-4.00	2.04(.55)	1-3.45	.78**
SCS Average Score	1.65(.60)	1.00-4.00	1.32(.39)	1-3.90	.65**
MCAS Reliability & Effectiveness	29.35(5.04)	5.00-35.00	28.75(5.18)	5.00-35.00	.12
MCAS Pleasure	18.97(6.92)	5.00-35.00	21.16(6.37)	5.00-35.00	.33**
MCAS Stigma	30.48(4.47)	11.00-35.00	32.64(3.36)	19.00-35.00	.55**
MCAS Embarrassment	29.85(5.09)	11.00-35.00	29.75(5.78)	5.00-35.00	.02
MCAS Purchase Embarrassment	25.01(8.40)	5.00-35.00	23.30(8.49)	5.00-35.00	.20*
# Sexual Partners (lifetime)	32.98(114.77)	0-1500	19.50(81.53)	0-1200	.14
# Sexual Partners (month)	1.06 (1.85)	0-25	.84(1.82)	0-30	.12
P Casual Sex w/ Condom (month)	.58(.47)	.00-1.00	.47(.50)	.00-1.00	.23

Note: * $p < .05$. ** $p < .01$; SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale, P=Proportion

Table 3.3

Frequency Distributions for the Main Categorical Outcome Variables

	Males (n=298)		Females (n=322)	χ^2
	%		%	
<i>Frequency of Internet Pornography Use:</i>	vs. rare use n=24		vs. non-use n=119	288.75**
Less than monthly	-		23.6	
Monthly	14.8		27.6	
Weekly	58.7		10.6	
Daily	18.5		1.2	
<i>Paraphilic Internet Pornography Use:</i>	No	57.7	38.5	22.89**
	Yes	42.3	61.5	
<i>STI History^a:</i>	No	83.6	85.1	.01
	Yes	12.4	12.4	
<i>Intention to Use Condom^b:</i>	Not-definite	67.8	62.7	1.71
	Definitely Intend to Use	28.5	33.2	

Note: * $p < .05$. ** $p < .01$; a= Missing data for 12 males and 8 females, b= Missing data for 11 males and 13 females

Table 3.4

Correlations Between Internet Pornography Use And Relevant Outcome Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Freq of Internet Porn Use (days)	-	-.13*	.04	.37**	.35**	.03	0	.06	.09	.14*	-.04	.02	-.03	-.01
2. Age of Exposure	-.22**	-	.06	-.14*	-.09	-.15*	-.05	-.02	-.07	-.01	0	.05	-.03	-.11
3. Paraphilic Use	-.08	.07	-	.09	.01	-.02	-.03	.02	.03	-.05	-.05	-.02	-.05	-.06
4. SSSS Score	.23**	-.17**	-.24**	-	.44**	.04	-.1	.02	.19**	.32**	-.17**	.25**	.22**	.09
5. SCS Score	.08	-.11	-.09	.47**	-	.05	-.03	-.07	.05	.1	.02	.1	.14*	.03
6. MCAS- Reliability & Effectiveness	.09	-.16**	.06	.08	-.02	-	.32**	.38**	.26**	.11*	.08	.07	.07	.04
7. MCAS- Pleasure	-.11	.11	.05	-.18**	-.13*	.21**	-	.39**	.30**	.22**	.20**	.04	.04	-.01
8. MCAS- Stigma	-.03	.00	.02	.02	-.12*	.37**	.35**	-	.41**	.17**	.1	.06	.03	-.04
9. MCAS- Embarrassment	.02	-.06	-.10	.18**	-.13*	.28**	.26**	.57**	-	.33**	.04	.24**	.03	-.04
10. MCAS-Purchasing Embarrassment	.03	-.01	-.15*	.20**	-.08	.13*	.22**	.38**	.54**	-	-.07	.23**	.18**	.03
11. Intention to Use Condom	-.06	.05	.06	-.24**	-.14*	.08	.27**	.16**	.04	-.06	-	-.25**	-.11*	0
12. # Sex Partners-Month	.07	.03	-.08	.22**	.10	-.08	-.01	-.19**	.12*	.17**	-.09	-	.77**	.14*
13. # Sex Partners -Lifetime	.05	-.07	-.07	.19**	.02	-.09	.00	-.12*	.12*	.19**	-.06	.74**	-	.29**
14. History of STI	.00	.02	-.16**	.20**	-.06	.01	.15*	.09	.14*	.28**	-.07	.22**	.31**	-

Note: Female data is represented above the diagonal and male data below the diagonal. Freq= Frequency; frequency of porn use is a continuous variable, SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

3.3.1 Sexual compulsivity and sexual sensation seeking

As can be seen in Table 3.4, for males, only sexual sensation seeking scale scores were positively correlated with the continuous frequency of internet pornography use variable ($r=.23, p<.01$). In addition, age of exposure was negatively correlated with sexual sensation seeking scores ($r=-.17, p<.05$). Sexual compulsivity scores were not significantly correlated with the continuous frequency of internet pornography use variable for males ($p>.05$) nor was age of first exposure ($p>.05$).

For females, sexual sensation seeking scores ($r=.37, p<.01$) were positively correlated with frequency of internet pornography use and negatively correlated with age of first exposure ($r=-.14, p<.05$). Sexual compulsivity scores ($r=.35, p<.01$) were also positively and significantly correlated with frequency of internet pornography use. Age of exposure was not associated with sexual compulsivity scores ($p>.05$).

3.3.2 Condom attitudes

A series of hierarchical multiple regressions employing the model described above were performed for each of the MCAS subscales. The results of the regression analysis for the reliability and effectiveness subscale for males are reported in Table 3.5, with the statistics from the full model. The full regression model was significant, and accounted for 8.5% of the total variance in the MCAS reliability and effectiveness subscale; $R^2 = .09$, adjusted $R^2 = .04$, $F(12, 262) = 2.02, p = .023$. Step one, comprising demographic and personality variables, accounted for 6.4% of the total variance in the reliability and effectiveness subscale of the MCAS for males; $R^2 = .06$, adjusted $R^2 = .04$, $F(7, 267) = 2.62, p = .013$. The addition of step two, containing the variables related to pornography use, did not result in a significant increment in prediction over and above that of step one; $F(5, 262)$

=1.18, $p = .320$. For females, the full regression model was not significant; $R^2 = .05$, adjusted $R^2 = .00$, $F(13, 250) = 1.05$, $p = .403$.

The results of the regression analysis for the MCAS Pleasure subscale are reported in Table 3.6 for males, with the statistics from the full model. The full regression model was significant, and accounted for 10.4% of the total variance the MCAS pleasure subscale; $R^2 = .10$, adjusted $R^2 = .06$, $F(12, 262) = 2.53$, $p = .004$. Step one, comprising demographic and personality variables, accounted for 8.4% of the total variance in the pleasure subscale of the MCAS for males; $R^2 = .08$, adjusted $R^2 = .06$, $F(7, 267) = 3.52$, $p = .001$. The addition of step two, containing the variables related to pornography use, did not result in a significant increment in prediction over and above that of step one; $F(5, 262) = 1.12$, $p = .35$. For females, the full regression model was not significant; $R^2 = .06$, adjusted $R^2 = .01$, $F(13, 251) = 1.18$, $p = .30$. For the stigma MCAS subscale, the full regression was not significant for males [$R^2 = .04$, adjusted $R^2 = .00$, $F(12, 262) = .93$, $p = .521$], or females [$R^2 = .03$, adjusted $R^2 = -.02$, $F(13, 251) = .61$, $p = .843$].

The results of the regression analysis for the MCAS Embarrassment subscale are reported in Table 3.7 for males, with the statistics from the full model. The full regression model was significant, and accounted for 16.7% of the total variance the MCAS embarrassment subscale; $R^2 = .17$, adjusted $R^2 = .13$, $F(12, 262) = 4.38$, $p < .001$. Step one, comprising demographic and personality variables, accounted for 13.0% of the total variance in the embarrassment subscale of the MCAS for males; $R^2 = .13$, adjusted $R^2 = .11$, $F(7, 267) = 5.72$, $p < .001$. The addition of step two, containing the variables related to pornography use, resulted in a significant increment in prediction over and above that of step one, however, no individual pornography predictors were significant; $F(5, 262) = 2.31$, $p = .045$. For

females, the full regression model was not significant; $R^2 = .08$, adjusted $R^2 = .03$, $F(13, 251) = 1.71$, $p = .060$.

Table 3.5

Summary of Hierarchical Regression Analysis for Variables Predicting MCAS Reliability and Effectiveness Subscale Scores in Males

Variable	Step 1	Step 2
	β	β
Age	-.15*	-.09
Religiosity	-.07	-.08
Ethnicity	-.06	-.06
Relationship Status	-.01	-.03
Sexual Orientation	.16**	.17**
SSSS Score	.10	.09
SCS Score	-.03	-.03
Monthly Internet Porn Use ^a		-.05
Weekly Internet Porn Use ^a		.02
Daily Internet Porn Use ^a		-.02
Age of Exposure		-.10
Paraphilic Use		-.09
	R^2	
	.06*	.09*
	R^2 change	.02

Note: * $p < .05$. ** $p < .01$; SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale.

a= when compared to "rare" use (dummy coded variable, see Section 3.3. for full description)

Table 3.6

*Summary of Hierarchical Regression Analysis for Variables Predicting MCAS Pleasure**Subscale Scores in Males*

Variable	Step 1	Step 2
	β	β
Age	.11	.11
Religiosity	.02	.03
Ethnicity	.07	.09
Relationship Status	-.01	-.01
Sexual Orientation	.16*	.17**
SSSS Score	-.20**	-.19**
SCS Score	-.09	-.08
Monthly Internet Porn Use ^a		.13
Weekly Internet Porn Use ^a		.10
Daily Internet Porn Use ^a		-.02
Age of Exposure		.04
Paraphilic Use		-.01
	R^2	
	.08**	.10**
	R^2 change	.02

Note: * $p < .05$. ** $p < .01$; SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale
a= when compared to "rare" use (dummy coded variable, see Section 3.3. for full description)

Table 3.7

*Summary of Hierarchical Regression Analysis for Variables Predicting MCAS Embarrassment**Subscale Scores in Males*

Variable	Step 1	Step 2
	β	β
Age	.00	.04
Religiosity	-.03	-.02
Ethnicity	-.05	-.04
Relationship Status	.21**	.20**
Sexual Orientation	.03	.03
SSSS Score	.26**	.23**
SCS Score	-.20**	-.19**
Monthly Internet Porn Use ^a		.08
Weekly Internet Porn Use ^a		.04
Daily Internet Porn Use ^a		-.12
Age of Exposure		-.09
Paraphilic Use		.11
	R^2	.13
	R^2 change	.04*

Note: * $p < .05$. ** $p < .01$; SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale
a= when compared to "rare" use (dummy coded variable, see Section 3.3. for full description)

The results of the regression analyses for the MCAS Purchasing Embarrassment subscale are reported in Table 3.8, with the statistics from the full model. For males, the full regression model was significant, and accounted for 17.2% of the total variance the MCAS purchasing embarrassment subscale; $R^2 = .17$, adjusted $R^2 = .13$, $F(12, 262) = 4.52$, $p < .001$. Step one, comprising demographic and personality variables, accounted for 15.3% of the total variance in the purchasing embarrassment subscale of the MCAS for males; $R^2 = .15$, adjusted $R^2 = .13$, $F(7, 267) = 6.87$, $p < .001$. The addition of step two, containing the variables related to pornography use, resulted in a significant increment in prediction over and above that of step one; $F(5, 262) = 1.20$, $p = .311$. For females, the full regression model was significant, and accounted for 17.6% of the total variance the MCAS purchasing embarrassment subscale; $R^2 = .18$, adjusted $R^2 = .13$, $F(13, 251) = 4.13$, $p < .001$. Step one, comprising demographic and personality variables, accounted for 14.4% of the total variance; $R^2 = .14$, adjusted $R^2 = .12$, $F(7, 257) = 6.19$, $p < .001$. The addition of step two, containing the variables related to pornography use, did not result in a significant increment in prediction over and above that of step one; $F(6, 262) = 1.62$, $p = .141$. However, daily female internet pornography users reported more positive attitudes and reduced purchasing embarrassment regarding purchasing condoms, when compared to non-users; $\beta = .16$, $p = .011$.

Table 3.8

*Summary of Hierarchical Regression Analysis for Variables Predicting MCAS Purchasing**Embarrassment Subscale Scores*

Variable	Step 1	Step 2	Step 1	Step 2	
	β		β		
	Females	Males	Females	Males	
Age	.20**	.19**	.21**	.22**	
Religiosity	.03	-.09	.05	-.07	
Ethnicity	-.02	.08	-.03	.08	
Relationship Status	.03	.14*	.03	.14*	
Sexual Orientation	.14*	.10	.10	.08	
SSSS Score	.26**	.23**	.23**	.20**	
SCS Score	-.03	-.17**	-.07	-.17**	
< Monthly Internet Porn Use ^a			.12	-	
Monthly Internet Porn Use ^a			.15	.06	
Weekly Internet Porn Use ^a			.02	.02	
Daily Internet Porn Use ^a			.16*	-.03	
Age of Exposure			.02	-.08	
Paraphilic Use			.12	.11	
	R^2	.14**	.15**	.18**	.17**
	R^2 change			.03	.02

Note: * $p < .05$. ** $p < .01$; SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale
a= when compared to non-use for female data and "rare" use for male data (dummy coded variables, see Section 3.3. for full description)

3.3.3 Intention to use a condom

Binary Logistic Regressions employing the hierarchical model described above were performed for intention to use a condom over the next 2 months (not-definite use vs. definite use). The results of the analyses are reported in Table 3.9, with the statistics from the full model. For males, the overall model was significant, accounting for 9.6% of the variance, $\chi^2(12)=31.97$, $p=.001$. Step one, comprising demographic and personality variables was significant, accounting for 8.3% of the variance in intention to use a condom in males, $\chi^2(7)=27.84$, $p<.001$. The addition of step two, containing the variables related to pornography use, did not result in a significant increment in prediction over and above that of step one, $\chi^2(5)=4.13$, $p=.531$. For females, the overall model was significant, accounting for 12.6% of the variance, $\chi^2(13)=42.29$, $p<.001$. Step one, comprising demographic and personality variables was significant, accounting for 11.26% of the variance in intention to use a condom in females, $\chi^2(7)=37.72$, $p<.001$. However, the addition of step two, containing the variables related to pornography use, did not result in a significant increment in prediction over and above that of step one, $\chi^2(6)=4.52$, $p=.607$.

Table 3.9

Summary of Binary Logistic Regression Analysis for Variables Predicting Intention to Use a Condom Over the Next 2 Months

Variable	Step 1 Females		Step 1 Males		Step 2 Females		Step 2 Males	
	Wald	OR (95% C.I.)	Wald	OR (95% C.I.)	Wald	OR (95% C.I.)	Wald	OR (95% C.I.)
Age	.08	1.00(.96-1.03)	.31	.99(.97-1.02)	.02	1.00(.96-1.03)	.45	.99(.96-1.02)
Religiosity	.74	.72(.34-1.53)	.33	1.23(.60-2.52)	1.03	.67(.30-1.46)	.55	1.32(.64-2.72)
Ethnicity	.00	.99(.55-1.76)	.45	1.23(.67-2.25)	.06	.93(.52-1.68)	.89	1.35(.72-2.51)
Relationship Status	25.48**	.22(.12-.40)	6.37*	.47(.26-.85)	26.14**	.21(.11-.40)	6.35*	.47(.26-.85)
Sexual Orientation	.07	1.10(.55-2.17)	1.04	1.41(.73-2.72)	.09	.90(.44-1.85)	1.10	1.44(.73-2.82)
SSSS Score	4.74*	.49(.26-.93)	9.06**	.41(.23-.73)	3.90*	.48(.24-.995)	8.92**	.38(.21-.72)
SCS Score	2.63	1.91(.87-4.18)	.67	.79(.45-1.40)	2.28	1.90(.83-4.38)	.74	.78(.43-1.39)
< Monthly Internet Porn Use ^a					2.01	2.10(.75-5.86)	-	-
Monthly Internet Porn Use ^a					.32	1.31(.51-3.40)	3.09	3.20(.88-11.71)
Weekly Internet Porn Use ^a					.00	1.02(.31-3.31)	1.75	2.20(.68-7.10)
Daily Internet Porn Use ^a					.10	1.44(.14-14.54)	1.29	2.13(.58-7.83)
Age of Exposure					.39	.98(.91-1.05)	.94	1.06(.94-1.19)
Paraphilic Use					3.02	2.03(.91-4.52)	.00	1.01(.56-1.84)
R^2 (Hosmer & Lemeshow)		.11		.10		.13		.10
R^2 (Cox & Snell)		.13		.11		.15		.11
R^2 (Nagelkerke)		.19		.16		.21		.16

Note: * $p < .05$. ** $p < .01$; SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale

a= when compared to non-use for female data and "rare" use for male data (dummy coded variables, see Section 3.3. for full description)

3.3.4 Using condoms during casual sex

It was planned that independent t-tests would be run for males and females, comparing the proportion of casual sex using a condom in the previous month of internet pornography users to non users (never used or not in the last year). However, the number of participants who had engaged in casual sex in the previous month was too low to separate the groups by gender whilst still maintaining adequate power. Accordingly, the gender category was collapsed. This analysis revealed that there was no significant difference in the proportion of casual sex using a condom in the preceding month when comparing non pornography users ($M=.50$, $SD=.55$) and internet pornography users ($M=.55$, $SD=.48$); $t(64)=-.22$, $p=.824$.

3.3.5 Sexual partners

Hierarchical multiple regressions employing the model described at the beginning of section 3.3 were performed with lifetime number of sexual partners as the outcome variable. The results of the analyses are reported in Table 3.10, with the statistics from the full model. The full regression model for males was significant, and accounted for 20.2% of the total variance in lifetime number of sexual partners; $R^2=.20$, adjusted $R^2=.17$, $F(12, 262) = 5.54$, $p < .001$. Step one, comprising demographic and personality variables, accounted for 17.5% of the total variance in lifetime number of sexual partners for males; $R^2 = .18$, adjusted $R^2=.15$, $F(7, 267) = 8.11$, $p < .001$. The addition of step two, containing the variables related to pornography use, did not result in a significant increment in prediction over and above that of step one; $F(5, 262) = 1.78$, $p = .117$. However, an earlier age of first exposure to pornography was associated with a higher lifetime number of sexual partners; $\beta = -.15$, $p = .018$. For females, the full regression model was significant, and accounted for 16.1% of

the total variance in lifetime number of sexual partners; $R^2 = .16$, adjusted $R^2 = .12$, $F(13, 251) = 3.71$, $p < .001$. Step one, comprising demographic and personality variables, accounted for 11.2% of the total variance in lifetime number of sexual partners for females; $R^2 = .11$, adjusted $R^2 = .09$, $F(7, 257) = 4.64$, $p < .001$. The addition of step two, containing pornography use variables, resulted in a significant increase in prediction over and above that of step one; $F(6, 251) = 2.44$, $p = .026$. However, an earlier age of first exposure to pornography was associated with a higher lifetime number of sexual partners; $\beta = -.21$, $p = .001$.

Table 3.10

Summary of Hierarchical Regression Analysis for Variables Predicting Lifetime Number of Sexual Partners Subscale Scores

Variable	Step 1		Step 2		
	β		β		
	Females	Males	Females	Males	
Age	.24**	.26**	.26**	.31**	
Religiosity	-.07	.08	-.08	.09	
Ethnicity	-.01	.03	-.04	.02	
Relationship Status	-.01	-.03	-.03	-.03	
Sexual Orientation	-.07	.22**	-.09	.20**	
SSSS Score	.18**	.20**	.20**	.17*	
SCS Score	.06	-.08	.07	-.09	
< Monthly Internet Porn Use ^a			.02	-	
Monthly Internet Porn Use ^a			-.12	.11	
Weekly Internet Porn Use ^a			-.05	.03	
Daily Internet Porn Use ^a			-.07	.09	
Age of Exposure			-.21**	-.15*	
Paraphilic Use			-.01	-.03	
	R^2	.11**	.18**	.16**	.20**
	R^2 change			.05*	.03

Note: * $p < .05$. ** $p < .01$; SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale
a= when compared to non-use for female data and "rare" use for male data (dummy coded variables, see Section 3.3. for full description)

Hierarchical multiple regressions were then performed for number of sexual partners over the previous month. The results of the analyses are reported in Table 3.11, with the statistics from the full model. The full regression model for males was significant, and accounted for 16.6% of the total variance in number of sexual partners over the past month; $R^2 = .17$, adjusted $R^2 = .13$, $F(12, 262) = 4.35$, $p < .001$. Step one, comprising demographic and personality variables, accounted for 16.1% of the total variance in lifetime number of sexual partners for males; $R^2 = .16$, adjusted $R^2 = .14$, $F(7, 267) = 7.30$, $p < .001$. However, the addition of step two, containing the variables related to pornography use, did not result in a significant increment in prediction over and above that of step one; $F(5, 262) = .347$, $p = .884$. For females, the full regression model was significant, and accounted for 28.0% of the total variance in lifetime number of sexual partners; $R^2 = .28$, adjusted $R^2 = .24$, $F(13, 251) = 7.50$, $p < .001$. Step one, comprising demographic and personality variables, accounted for 27.0% of the total variance in lifetime number of sexual partners for females; $R^2 = .271$, adjusted $R^2 = .25$, $F(7, 257) = 13.58$, $p < .001$. The addition of step two, containing pornography use variables did not result in a significant increase in prediction over and above that of step one; $F(6, 251) = .57$, $p = .751$.

Table 3.11

Summary of Hierarchical Regression Analysis for Variables Predicting Number of Sexual Partners Over the Previous Month

Variable	Step 1		Step 2	
	β		β	
	Females	Males	Females	Males
Age	.02	.18**	.04	.19**
Religiosity	-.05	.02	-.06	.02
Ethnicity	-.11	.03	-.10	.03
Relationship Status	.43**	.14*	.42**	.14*
Sexual Orientation	.08	.23**	.08	.22**
SSSS Score	.14*	.14*	.09	.12
SCS Score	-.05	.00	-.05	-.01
< Monthly Internet Porn Use ^a			-.01	
Monthly Internet Porn Use ^a			.07	.04
Weekly Internet Porn Use ^a			.10	.08
Daily Internet Porn Use ^a			-.01	.12
Age of Exposure			.00	.00
Paraphilic Use			-.01	.00
	R^2	.27**	.16**	.28**
	R^2 change		.01	.01

Note: * $p < .05$. ** $p < .01$; SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale
a= when compared to non-use for female data and “rare” use for male data (dummy coded variables, see Section 3.3. for full description)

3.3.6 STI history

Binary Logistic Regressions employing the model described at the beginning of section 3.3 were performed for history of STI incidence (yes vs. no). The results of the analyses are reported in Table 3.12, with the statistics from the full model. For males, the overall model was significant, accounting for 31.4% of the variance, $\chi^2(12)= 68.22$, $p<.001$. Step one, comprising demographic and personality variables was significant, accounting for 28.9% of the variance in STI history, $\chi^2(7)= 62.76$, $p<.001$. However, the addition of step two, containing the variables related to pornography use, did not result in a significant increment in prediction over and above that of step one, $\chi^2(5)= 5.46$, $p=.362$. For females, the overall model was significant, accounting for 23.7% of the variance, $\chi^2(13)= 48.92$, $p<.001$. Step one, comprising demographic and personality variables was significant, accounting for 13.6% of the variance in intention to use a condom in females, $\chi^2(7)= 28.18$, $p<.001$. The addition of step two, containing the variables related to pornography use, resulted in a significant increment in prediction over and above that of step one, $\chi^2(6)= 20.74$, $p=.002$. An earlier age of first exposure to pornography was associated with greater odds of having had an STI in females; Wald= 10.58, $p=.001$.

Table 3.12

Summary of Binary Logistic Regression Analysis for Variables Predicting STI History

Variable	Step 1 Females		Step 1 Males		Step 2 Females		Step 2 Males	
	Wald	OR (95% C.I.)	Wald	OR (95% C.I.)	Wald	OR (95% C.I.)	Wald	OR (95% C.I.)
Age	23.63**	1.09(1.05-1.13)	18.93**	1.08(1.04-1.12)	27.62**	1.12(1.08-1.17)	18.78**	1.10(1.05-1.15)
Religiosity	.11	.83(.27-2.55)	.52	.64(.19-2.17)	.50	.66(.21-2.06)	.21	.74(.21-2.62)
Ethnicity	.03	.94(.41-2.12)	.46	1.41(.53-3.75)	.51	.73(.31-1.74)	.26	1.31(.46-3.72)
Relationship Status	.02	.93(.38-2.28)	.76	.66(.26-1.67)	.50	.71(.27-1.86)	.93	.62(.24-1.64)
Sexual Orientation	.57	1.41(.58-3.41)	18.40**	6.54(2.77-15.44)	.37	1.36(.51-3.67)	15.35**	5.94(2.44-14.47)
SSSS Score	.10	1.15(.49-2.72)	11.24**	4.54(1.88-10.99)	.00	1.03(.38-2.82)	5.77*	3.23(1.24-8.42)
SCS Score	.27	1.33(.46-3.86)	4.60*	.38(.16-.92)	.11	1.22(.36-4.12)	3.83*	.40(.16-1.00)
< Monthly Internet Porn Use ^a					.20	1.42(.31-6.40)		
Monthly Internet Porn Use ^a					.95	.48(.11-2.08)	.82	3.12(.26-36.71)
Weekly Internet Porn Use ^a					2.98	3.97(.83-18.98)	.47	2.26(.22-23.62)
Daily Internet Porn Use ^a					.00	.00(0.00-)	.17	1.66(.15-18.94)
Age of Exposure					10.58**	.84(.76-.93)	2.06	.88(.74-1.05)
Paraphilic Use					.29	1.36(.45-4.10)	2.11	1.96(.79-4.84)
R^2 (Hosmer & Lemeshow)		.14			.29	.24		.31
R^2 (Cox & Snell)		.10			.20	.17		.22
R^2 (Nagelkerke)		.19			.37	.31		.40

Note: * $p < .05$. ** $p < .01$; OR= Odds Ratio, SSSS= Sexual Sensation Seeking Scale, SCS= Sexual Compulsivity Scale

a= when compared to non-use for female data and "rare" use for male data (dummy coded variables, see Section 3.3. for full description)

3.4 Discussion

Overall, the findings of the current study indicate that there are not strong links between sexual risk behaviour and internet pornography use within an Australian sample. In line with predictions, higher frequencies of pornography use were positively associated with higher sexual compulsivity and sexual sensation seeking in females. These findings were consistent with previous studies (Perry et al., 2007; Sinkovic et al., 2013), and contribute to the literature by confirming this link is also present for internet specific pornography consumption in Australian users. However, in contrast to expectations, greater frequency of internet pornography use was only linked to higher sexual sensation seeking in males, and no link was established for sexual compulsivity. Potentially, this may reflect the normalcy of pornography use in this sample, which is supported by that fact that over 90% of males in the present study indicated that they used internet pornography at least monthly. Thus it appears that for the majority of males, internet pornography use was not associated with problematic, intrusive sexual compulsions or behaviours. It is important to note, however, that a recent criticism of Kalichman and Rompa (1995)'s Sexual Compulsivity Scale is that this measure may assess a wider construct, containing items assessing sexual interest or desire (Dodge, Reece, Cole, & Sandfort, 2004; Štulhofer et al., 2008). Accordingly this may have affected the sensitivity of the scale in detecting any differences.

Additionally, for both males and females, a younger age of exposure to pornography was associated with higher sexual sensation seeking scores, which is in line with previous studies (Perry et al., 2007; Sinkovic et al., 2013). Potentially, these results concur with recent interpretations of sexual scripting theory, which, argue that pornography consumption should not significantly alter the core of sexual scripts, as users are active consumers, electing to view pornography in line with their pre-existing scripts or personality traits, such

as sexual sensation seeking (Weinberg et al., 2010). Nonetheless, given the strong link between sexual risk taking and sexual sensation seeking (Hald, Kuyper, Adam, & de Wit, 2013; Peter & Valkenburg, 2011a; Sinkovic et al., 2013), further clarification of this relationship is warranted. Longitudinal studies may assist in determining the causal direction of the development of this trait, and whether pornography use at an early age, or regular use as an adult, may contribute.

Contrary to predictions, internet pornography use was not associated with negative attitudes towards condoms. Furthermore, daily internet pornography use in females was actually associated with less embarrassment around the purchasing of condoms, when controlling for other important variables including demographics, sexual sensation seeking and sexual compulsivity. Thus, pornography may potentially assist in normalizing the acquisition and use of condoms, or conversely, it may be that pornography consumers are less likely to feel embarrassed around issues related to sex. Accordingly, the same traits that predispose individuals to consume pornography, such as greater sexual sensation seeking or more liberal attitudes towards sex, may also lead to less embarrassment around purchasing condoms or other sexual paraphernalia (Emmers-Sommer, Hertlein, & Kennedy, 2013; Fisher et al., 1988; Weinberg et al., 2010).

Similarly, frequency of internet pornography use was not associated with reduced odds of intending to use a condom in the future, contrary to expectations. These results support previous condom attitudes and behaviour research in adults, which has found no link between pornography use and knowledge of HIV prevention (Hong et al., 2007) or increased perceived importance of protected sex (Morrison et al., 2004). However, they are in opposition to research with adolescents which has demonstrated associations with unsafe sex behaviour (Regassa & Kedir, 2011; Wingood et al., 2001), although it is of note that these

studies examined different populations (Ethiopians and black American females, respectively).

Finally, internet pornography users did not report engaging in a significantly greater amount of unsafe casual sex in the previous month, however, it is of note that the sample size was very small for this analysis, and there was not sufficient power to detect an effect. Interestingly, age of first exposure, but not current internet pornography use, was linked with greater odds of having had an STI in females only. Future research should seek to replicate and further elucidate whether this relationship reflects pre-existing personality factors, which may have increased the likelihood that individuals accessed pornography at an earlier age, or, if early exposure to pornography played a role in shaping sexual scripts around self-management and promotion of sexual health. Additionally, frequency of internet pornography use did not predict a higher number of sexual partners for males or females. This finding is contrary to a body of studies indicating a link between these variables (e.g. Braun-Courville & Rojas, 2009; Carroll et al., 2008; Eaton et al., 2012; He et al., 2006; Morgan, 2011; Weinberg et al., 2010; Wright, 2012a); however, it is of note that participants with a younger age of first exposure to pornography were more likely to have a higher number of lifetime sexual partners, partially confirming this hypothesis.

The current study had some limitations. Firstly, it was cross-sectional in nature, and thus, any causal direction is unable to be inferred. Secondly, while all attempts were made to obtain a representative community sample, it is likely that the sample was biased, due to the nature of recruitment and the websites and organizations that were involved in this process. Furthermore, as with all sexuality research, due to the self-selected nature of the sample, it is likely that participants had a greater interest in the area and were more likely to be sexually permissive, potentially influencing the results obtained (Wiederman, 1999).

Potentially, some recall bias may also have been introduced into the study, particularly for older participants, when they were asked to recall the age of first exposure to pornography or condom use behaviours. Importantly, it is likely that there are many factors involved in the choice to use condoms during a sexual encounter (Beckman & Harvey, 1996; Wulfert & Wan, 1993). While this study did account for relationship status, which may explain some variance in condom use and attitudes, information regarding other forms of contraception utilised by participants was not sought. Subsequent studies should assess for this, perhaps in addition to an open ended or detailed question regarding motivations for choices around condom use or alternative contraception methods. Moreover, it is known that intention to use a condom is only moderately correlated with actual condom use (Albarracín, Johnson, Fishbein, & Muellerleile, 2001); as such, future research may benefit from including more sensitive behavioural measures of actual use, perhaps assessing longer time periods or utilising self-monitoring.

The accessibility, availability and normalization of pornography use has led to concerns in recent years over its potential influence on sexual risk behaviour, due to the genre's portrayal and glamorization of unsafe and casual sex commonly observed and its potential educative power (Kubicek et al., 2011; Seto et al., 2001). However, the results of the current study indicate that there are at best tenuous links between internet pornography use and indicators related to sexual risk behaviour in Australian users, and no links with attitudes or unprotected sex behaviours. Accordingly, in this context, there appeared to be minimal harms associated with internet pornography use in the current sample. Overall, the above findings, which are novel for an Australian population, diverge from patterns observed in adolescents and adult MSM; contributing to a picture which is still somewhat unclear and inconsistent. Potentially the findings for adolescents, such as that of

O'Hara et al. (2012), may differ because this population's sexual scripts are not fully formed, and the process of sexual socialisation is considered to be ongoing (Peter & Valkenburg, 2011a). Accordingly, the area would benefit from further investigation and replication, in order to elucidate the complex phenomenon of sexual risk behaviour and the potential of pornography to act as a model and educator around condom use. The following chapter continues to explore the idea of internet pornography as a form of sexual inspiration, broadening the investigation to encompass whether pornography influences sexual satisfaction through modifying attitudes related to sex and greater engagement in a range of sexual activities.

Chapter 4: Associations between Internet Pornography Use and Sexual Scripts, Attitudes and Non-Risky Sexual Behaviour

4.1 Introduction and Literature Review

4.1.1 Purpose of the study

Currently, there is no clear understanding of the effect of pornography on consumers, how they may learn from it, or how it may influence aspects of their sexuality (Albury, 2014). In the current study, a proposed model of how internet pornography use may shape intrapsychic and interpersonal sexual scripts, leading to changes in sexual attitudes and engagement in particular sexual activities, was tested. An understanding of the characteristics of internet pornography use in Australians and whether particular genres of pornography have a greater impact on self-perceived changes in sexual scripts was also sought. The final aim of the study was to examine whether there is a link between body image and internet pornography consumption, elucidating whether pornography shapes sexual scripts regarding body shape and size.

4.1.2 Pornography as sexual inspiration: pornography provides models for sexual behaviours

Preliminary evidence suggests that pornography use may be linked to sexual expectations and conceptualizations about sexual behaviour, including what is considered acceptable (Morgan, 2011; Stulhofer et al., 2010; Weinberg et al., 2010). As previously discussed, sexual scripts, which are cognitive schemata representing internalized social messages that guide sexual decision making, desires, expectations and behaviour in sexual interactions (Gagnon & Simon, 1973; Simon & Gagnon, 1986), may be shaped through media influences such as pornography. Pornography users have reported a greater preference for

sexual partners to possess characteristics or participate in behaviours that are commonly seen in pornography, such as having a higher libido, frequently initiating sex, engaging in a variety of sexual positions, making pleasurable noises, 'talking dirty', using sex toys, playfully dominating or participating in threesomes or role-plays (Morgan, 2011). Accordingly, some authors have expressed concern that the unrealistic nature of pornography may lead to distorted sexual scripts and subsequently poorer sexual satisfaction (Döring, 2009; Hald & Malamuth, 2008; To, Ngai, & Lu Kan, 2012). Such a relationship would be predicted by social comparison theory, which states that individuals compare themselves with others to evaluate or enhance particular attributes (e.g. Buunk & Gibbons, 2007; Festinger, 1954; Suls, Martin, & Wheeler, 2002). As a consequence of these comparisons, strong emotional reactions may be evoked, such as satisfaction or dissatisfaction (Peter & Valkenburg, 2009; Suls et al., 2002). Importantly, these comparisons may be unintentional or upward in direction, as would be predicted by comparing oneself to images depicted in the media, which are often idealized or unrealistic, and thus greater dissatisfaction may be predicted from exposure to pornographic media (Peter & Valkenburg, 2009). In support of this, viewing paraphilic pornography has been found to be correlated with a greater endorsement of sexual scripts resembling pornography, which was also linked to greater sexual boredom, a construct measuring sexual dissatisfaction (Stulhofer et al., 2010). Increased boredom with sexual routines has also been reported as a self-perceived negative consequence by pornography consumers (Albright, 2008). Additionally, in adolescents and young adults, pornography use has also been linked to poor development of the sexual self, including confusion around sexual beliefs, preferences and expectations (Peter & Valkenburg, 2010), as well as confusion around how to have "loving" or "romantic" sex (Tyden & Rogala, 2004).

An alternative view is that pornography use may help to normalize sexuality through exposing consumers to a variety of sexual behaviours, broadening their sexual repertoire and enhancing sexual satisfaction and the overall experience of sex (Weinberg et al., 2010). This is a potential benefit of pornography use, as sexual knowledge is an important determinant of healthy sexual behaviour and functioning (Lam, 1997; To et al., 2012). Accordingly to social-cognitive theory (Bandura, 1986), sexual activities are often depicted as positive and pleasurable in pornography, and thus, may lead the viewer to attempt these behaviours themselves (Weinberg et al., 2010). For example, pornography has been reported as an important source of sexual education and normalisation of anal sex in MSM (Hussen, Bowleg, Sangaramoorthy, & Malebranche, 2012; Kubicek et al., 2010), and as a source of inspiration about new positions and techniques to improve sexual satisfaction in adolescents (Lofgren-Martenson & Mansson, 2010; Mattebo, Larsson, Tyden, Olsson, & Haggstrom-Nordin, 2012; Tyden & Rogala, 2004). Furthermore, in one of few experimental studies, females shown pornography depicting explicit clitoral self-stimulation reported increases in this behaviour during partnered sexual interactions in the week following exposure (Kohut & Fisher, 2013). In addition, Weinberg et al. (2010) found that pornography consumption was correlated with a greater appeal of a variety of sexual acts, including the sexual presence of a third party or group sex, using a sex toy, anal and oral sex. These findings were also supported by qualitative research suggesting that pornography consumption had helped to normalize sexual behaviours, which consumers had previously found unusual, odd or deviant. This led to greater acceptance of such behaviours, which may have been counter to previous sexual socialization, such as parental influences (Weinberg et al., 2010). Pornography consumption has also been linked to increased anal, oral and group sexual activity in adolescent and young adult females (Braun-Courville & Rojas, 2009;

Haggstrom-Nordin, Hanson, & Tyden, 2005; Larsson & Tyden, 2006; Rogala & Tyden, 2003; Rothman et al., 2012). Furthermore, consumers tend to self-report positive effects in areas related to their sexual knowledge, attitudes, behaviours, and orientation (Hald & Malamuth, 2008; Hald, Smolenski, et al., 2013; Wijaya Mulya & Hald, 2014). Accordingly, it may be that, for some users, through inspiring new behaviours, positions and methods to improve sexual satisfaction, pornography has the potential to allow individuals to explore new ways of having sex in a safe setting, resulting in empowerment (Weinberg et al., 2010). Women may particularly benefit from this liberation, considering that historically, traditional sexual scripts have portrayed sexual expression in women as negative (Baumeister & Twenge, 2002).

Accordingly, a model (see Figure 4.1) of how internet pornography use may shape sexual scripts was tested in the current study, utilising an Australian sample. The sexual inspiration model of internet pornography consumption proposes that the impact of internet pornography upon sexual scripts leads to shifts in users' attitudes towards particular sexual activities, such that they may find particular behaviours seen in pornography to be more appealing. In turn, this may lead to increases in the frequency and likelihood of having engaged in these acts. Finally, the model then tests how pornography may impact sexual satisfaction, examining whether these changes in sexual scripts, attitudes and behaviour result in increased or decreased sexual boredom. It is important to note that while not included in the figure, the model assumes the presence of prior sexual socialisation, in addition to other background factors, such as gender, sexual orientation and age, which may contribute to preferences for sexually explicit media.

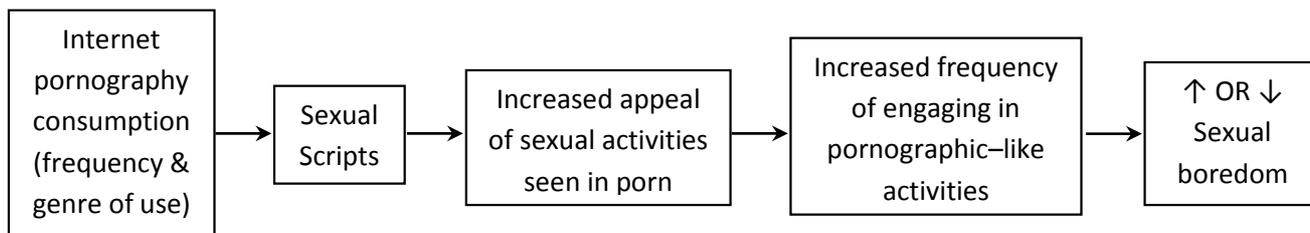


Figure 4.1. The proposed sexual inspiration model of internet pornography consumption.

4.1.3 Characteristics of pornography consumption: gender differences and themes

As previously outlined, males are more likely to report consumption of pornography than females (Döring, 2009; Paul & Shim, 2008; Peter & Valkenburg, 2011b). A large-scale, representative, nation-wide survey of Australians found that just over 37% of males and 16% of females had viewed a pornographic film in the previous 12 months (Richters et al., 2003), with similar rates being reported in the US (Wright, 2011b; Wright et al., 2013). However, it is unclear what impact recent advances in internet access and computer technology may have had on this difference. Furthermore, no studies to date have examined differences in the genres of pornography which males and females tend to consume. A broad range of pornographic themes are available, particularly online (e.g. heterosexual, MSM, group sex, specific age groups, and depictions of specific sex acts); however, there is a paucity of research examining how the content of pornography may influence consumers (Fisher & Barak, 2001). Researchers tend to assume that one type of pornography may have similar correlates and influences to others, and it has been suggested that more interest is shown in studying the impact of pornography, rather than in analysing the content of pornography (Brown & Bryant, 1989; Paul, 2009). Despite this, different patterns of self-reported arousal between males and females have been found for the types of pornographic themes viewed (Paul, 2009; Paul & Kobach, 2014). Males report greater arousal towards and more frequent

use of explicit “hard-core” pornography than non-explicit, simulated-sex “soft-core” themes (Hald, Kuyper, et al., 2013; Paul & Kobach, 2014). On the other hand, this has not been demonstrated for females, who tend to report less arousal for films containing male ejaculation, and are more likely to consume soft-core pornography (Hald, Kuyper, et al., 2013; Paul & Kobach, 2014). It is not clear which pornographic themes may contribute to changes in attitudes or behaviours, or be more or less associated with perceived positive or negative influences. Accordingly, with differential patterns of use in males and females, further research is needed into how this may relate to the potential influence of pornography on sexual scripts.

4.1.4 The influence of pornography on body and genital image

In addition to effects on sexual satisfaction, social comparison theory may also predict an influence of pornography on body image. There is robust evidence to support the idea that comparing one’s own appearance to mass media images increase body image dissatisfaction (Groesz, Levine, & Murnen, 2002). Pornography, as a genre of media, may potentially distort or narrow sexual scripts for what is considered sexually attractive (Peter & Valkenburg, 2009; Suls et al., 2002). Very few studies have directly examined this issue; however, qualitative research with adolescents suggests that they believe pornography portrays distorted and unrealistic body ideals, where females are represented as underweight with large breasts and males represented with muscular, well-built physiques (Lofgren-Martenson & Mansson, 2010; Mattebo et al., 2012). As such, it is possible that pornography consumption may contribute to poor body image (Lofgren-Martenson & Mansson, 2010; Mattebo et al., 2012). Concerns about appearance, body shape, and size have been connected to sexual problems in both men and women. Body shame and image consciousness contribute to decreased sexual pleasure through increased self-consciousness

during physical intimacy, in addition to avoidance of sexual activity and reduced sexual assertiveness (Sanchez & Kiefer, 2007; Wiederman, 2000). On the other hand, Döring (2009) argued that the rise in amateur pornography on the internet may allow a broader range of body shapes and sizes to be depicted. Female consumers have reported improved body image after viewing amateur pornography featuring women with “regular” bodies (Groves et al., 2011). Accordingly, this may convey realistic expectations, leading consumers’ self-perceptions and comparisons to be positively influenced. In heterosexual males, a connection has not been found between pornography consumption and body self-esteem or drive for thinness and muscularity (Morrison, Ellis, Morrison, Bearden, & Harriman, 2006). However of the limited literature available, there is mixed evidence for this link in MSM, with one study showing that consumption was associated with greater social physique anxiety (Duggan & McCreary, 2004); furthermore, no quantitative research has been conducted in females.

Due to the nature of pornography, the focus of the camera is often directly on the genitals, and thus pornography may also influence genital self-esteem. Researchers have commented on the link between the popularity of pornography and the increasing tendency for females to remove their pubic hair or seek genital plastic surgical procedures (Albury, 2014; Fitzpatrick, 2007). Lofgren-Martenson and Mansson (2010) found that females qualitatively reported feeling pressured to shave their genitals in preparation for sexual encounters, replicating the fashion they had seen in pornography, in order to appear more desirable. There have been mixed quantitative findings for males (Morrison et al., 2006; Morrison et al., 2004) and no research has been conducted in this area with females; thus, further investigation is warranted.

4.1.5 Hypotheses

Based upon the literature to date, a number of hypotheses are proposed:

1. The sexual inspiration model of internet pornography consumption, outlined in figure 4.2 (females) and 4.3 (males) will be significant, with frequency of internet pornography use and use of paraphilic pornography being associated with increased overlap between personal sexual scripts with pornographic scripts. This in turn will be associated with a greater perceived appeal of a range of sexual activities (sex toys, oral, anal, third party) and a greater engagement in these sexual behaviours (masturbation, manual sex, oral sex, anal sex, number of partners, frequency of intercourse), which will then be associated with a) greater levels of sexual boredom, or alternatively, b) lower levels of sexual boredom.
2. Males and females will be more likely to report self-perceived changes in both attitudes towards specific sexual activities and actual behaviour, as a result of internet pornography consumption, than no change at all.
3. The average self-perceived effects of internet pornography on sexual attitudes and behaviour will be positive for both males and females.
4. Self-perceived changes in behaviour and feelings towards this behaviour change will be correlated with the types of themes of internet pornography viewed.
5. Frequency of internet pornography consumption will be correlated with poorer body image satisfaction in males and females (controlling for demographic variables). The relationship between pornography use and body image will be moderated by the extent to which sexual scripts overlap with pornographic scripts.
6. Frequency of internet pornography consumption will be correlated with poorer genital image satisfaction in males and females (controlling for demographic variables). The

relationship between pornography use and genital image will be moderated by the extent to which sexual scripts overlap with pornographic scripts.

4.2 Methods

4.2.1 Design, procedure and recruitment

Please refer to chapter three for an overview of the design, procedure and recruitment strategy (section 3.2.1, 3.2.2), which was identical to that of study one. It should be noted that the sample collected in the present study was different to that which was collected in study one, despite the identical recruitment strategy. Nonetheless, it is possible that some overlap existed between participants as the links to each survey were advertised on the same websites, as well at the end of each survey. In the current study, the independent variables were considered to be frequency of internet pornography consumption and paraphilic pornography consumption, in addition to age of first exposure to pornography (regressions only).

4.2.2 Participants

Inclusion criteria for participants followed that of study one (see section 3.2.3). A total of 1816 people signified their interest in participating in the study by clicking on the link and answering the pre-screening questions about age and country of residence. Of these, 795 were excluded for (a) not meeting study criteria ($n = 32$); (b) not completing the survey ($n = 759$) and (c) non-serious attempts on the survey ($n = 4$). For statistical reasons, participants who indicated that they were transgendered were also excluded due to the very low number who took part in the study ($n=5$). Accordingly, 1016 ($n= 855$ pornography users, $n=161$ non-users) participants were included in the final analysis ($n=97$ recruited via undergraduate psychology course), of whom 48.3% were female and 51.7% were male.

Participants ranged in age from 18 to 74 ($M=28.94$, $SD=11.01$) and had an average of 16.14 years ($SD=3.11$) of education. Table 4.1 describes the demographic characteristics of the final sample in more detail.

4.2.3 Materials

The questionnaires which were administered to participants are described in detail below. For a complete overview of the survey and individual items of each questionnaire, please see Appendix E. As in the previous chapter, the survey was pilot tested on a small group of individuals to ensure that the questionnaires were clear, understandable and contained no errors.

4.2.3.1 Demographics

Please see the previous chapter (section 3.2.4.1) for an overview of the demographic questions administered.

Table 4.1

Demographic Characteristics of the Sample

		Males (n=525)		Females (n=491)		χ^2
		N	%	N	%	
<i>Paraphilic Internet Pornography Use:</i>	No	324	61.7	370	75.4	21.81*
	Yes	201	38.3	121	24.6	
<i>Religiosity:</i>	Non-religious	432	82.3	93	18.9	0.26
	Religious	93	17.7	398	81.1	
<i>Ethnicity[†]:</i>	Anglo-Australian	335	63.8	278	56.6	15.70
	Aboriginal, Torres Strait or Sth. Sea Islander	3	0.6	4	0.8	
	Pacific islander	-	-	3	0.6	
	European	65	12.4	68	13.8	
	Nth African or Middle Eastern	5	1.0	5	1.0	
	Asian	50	9.5	75	15.3	
	Latin American	7	1.3	3	0.6	
	Mixed	43	8.2	40	8.2	
<i>Identified Sexuality:</i>	Heterosexual	387	73.7	373	76.0	46.90*
	Homosexual	78	14.9	14	2.9	
	Bisexual	52	9.9	77	15.7	
	Other (“queer”, “pansexual”, “unsure”)	8	1.5	27	5.5	
<i>Relationship Status</i>	Single	212	40.4	145	29.5	13.10*
	In a relationship	313	59.6	346	70.5	

* Chi-Square for gender significant at the $p < .001$

[†]Anglo-Australian includes participants of Australian, New Zealand, British, North American or Canadian background.

Ethnicity is missing data for 17 participants for males and 15 participants for females.

4.2.3.2 Pornography consumption

Details regarding pornography consumption were assessed using the Pornography Use Characteristics Questionnaire (PUCQ), which was created for the purposes of the current study. Participants were informed of the definition of pornography as

Any kind of material aiming at creating or enhancing sexual feelings or thoughts in the recipient and, at the same time, containing explicit exposure and/or descriptions of the genitals and clear explicit sexual acts (Hald & Malamuth, 2008; p.616).

Frequency of pornography use was assessed by asking participants to indicate how often they had deliberately accessed internet pornography on average in the past 12 months, with 11 answer categories, taken from Bridges and Morokoff (2010). Categories included never or more than 12 months ago, once in the last 12 months, once in the last six months, less than once a month, one to two times a month, three to four times a month, five to six times a month, once a day or more than once a day. In the current study, this variable was then transformed into a continuous frequency of use variable (days per year) for statistical analyses.

Participants who indicated that they had consumed internet pornography in the last 12 months were then asked a set of questions about the details of their use (see Table 4.2). In addition to the items listed in this table, paraphilic pornography use was assessed using a question taken from Stulhofer et al. (2010), which asked participants to indicate whether they had viewed pornography containing Bondage and Discipline and/or Sadomasochism (BDSM), fetishism, bestiality or violent/coercive sexual activities in the previous 12 months. A dichotomous variable was then created, where an affirmative answer for any of these genres was considered to be paraphilic use (coded as 1, no paraphilic use coded as 0). The

pornography themes which participants commonly consumed were also assessed by asking participants to tick any which they had viewed in the previous 12 months from a list of 30 themes. This list was compiled by combining the common tags or categories, which were available on the four top website hits on Google.com for “porn” (youporn.com, pornhub.com, redtube.com, xnxx.com), and included items such as “anal”, “couple or romantic”, “point of view (POV)”, “threesome or group sex”, and “hardcore”. While the majority of pornography use should have been captured by these themes, the list was not exhaustive, and participants were given the option to provide additional information about themes which they chose to watch that were not included.

Table 4.2

Summary of Items of the Pornography Use Characteristics Questionnaire

Area assessed	Response options
1. On average, how many hours do you spend looking at internet pornography, per week?	<ul style="list-style-type: none"> • Time (hours)
2. At what age were you first exposed to pornography of any kind?	<ul style="list-style-type: none"> • Age (years)
3. What devices do you use to view internet pornography?	<ul style="list-style-type: none"> • Desktop computer • Laptop, • Tablet device • Smart phone
4. When viewing internet pornography, the majority of the time, are you:	<ul style="list-style-type: none"> • Alone • With partner • With friends • Sometimes alone/with partner.
5. Do you pay for internet pornography?	<ul style="list-style-type: none"> • Yes • No
6. How important is it to you to use internet pornography? (Weaver et al., 2011)	<ul style="list-style-type: none"> • 5 point Likert-type scale (1=not at all important – 5= extremely important)

4.2.3.3 Sexual scripts

The link between pornography and sexual scripts was assessed utilising Stulhofer et al. (2010)'s Sexual Scripts Overlap Scale (SSOS). Part 1 of this scale contains 42 items relating to intrapsychic and interpersonal sexual scripts regarding sexual activities or sensations (e.g., "Sex that includes a variety of sexual acts", "Enacting sexual fantasies", "After-sex cuddling and tenderness"). Participants are required to rate the importance of these items for great sex. Participants are then given part 2 of this scale, where they rate the importance of these same 42 items for pornographic sex. Responses are based on a 5-point Likert-type scale ranging from 1("not important at all") to 5 ("exceptionally important"). SSOS scores are then computed for each of these item pairs by subtracting the ratings for pornographic sex from those for great sex. The scores for all items are then added together and the total subtracted from 168, such that higher scores indicate greater overlap between great sex and pornographic sexual scripts (possible range 0-168). The SSOS has been demonstrated to have high internal consistency and this was replicated in the current study (Cronbach's $\alpha=.95$).

4.2.3.4 Appeal of sexual behaviours

Attitudes towards sexual scales were assessed with Weinberg et al.'s (2010) 10-item scale. For each item, participants rated the appeal of a sexual behaviour on a Likert-type scale from 1 = very unappealing, through to 5= very appealing. This scale assesses attitudes towards four types of sexual behaviours: (a) the appeal of using sex toys (e.g. "Using a vibrator/sex toy on yourself"; two items), (b) the appeal of oral-genital activity (e.g. "receiving oral-genital activity"; two items), (c) the appeal of anal activity (e.g. "receiving manual-anal stimulation"; three items) and (d) interest in sexual activity with third parties (e.g. "having sex with more than one person at a time"; three items). Higher scores on these

composites indicate that there was greater interest or appeal in the sexual behaviour. In the current study the reliability for all of the subscales was good, except for the appeal of oral sex activity, which was acceptable (sex toys Cronbach's $\alpha=.89$, oral sex $\alpha=.63$, anal sex activity $\alpha=.87$, third party $\alpha=.82$).

4.2.3.5 Sexual behaviour

Actual sexual behaviour was measured utilising items drawn from Weinberg et al. (2010)'s sexual behaviour scale. The scale contains 11 items which require respondents to indicate the number of times which they have engaged in particular sexual acts over the last three months (e.g. "Please indicate the number of times you performed anal sex in the last 3 months"), in addition to the number of people with whom they had engaged in partnered acts (e.g. "Please indicate, in your lifetime, the number of people you have engaged in anal intercourse with"). Weinberg et al. (2010) asked participants to provide these details for the last 12 months or lifetime, however, during pilot testing for the current study, it was raised by participants that it was difficult to recall exact numbers for this time frame. Accordingly, the original items were modified to ask about the previous three months, except for anal activities, which was not changed due to the comparatively lower incidence of these behaviours (Weinberg et al., 2010). Weinberg et al. (2010) derived five subscales based on factor analyses, which included (self) masturbation, manual sex, oral sex, sexual intercourse and anal sex. However, they found that the reliability of the sexual intercourse index was below acceptable levels, and thus, these variables (frequency of sexual intercourse and number of sexual partners over the previous three months) were kept separate for the analyses in the current study. The reliabilities of the subscales in the current study ranged from good to excellent, except for the manual sex index (masturbation Cronbach's $\alpha=.92$, manual sex $\alpha=.05$, oral sex $\alpha=.81$, anal sex $\alpha=.84$). This index was analysed separately and it

was found to be acceptable for females ($\alpha=.66$), but very low for males ($\alpha=.04$). This is because there were differences in the frequency that males reported they received versus gave manual sex (the two items which made up this index). Nonetheless, this index was still considered acceptable to use, as it is considered to be a formative variable. For formative variables, unidimensionality and internal consistency are not relevant to reliability (Rossiter, 2002).

4.2.3.6 Sexual boredom

The Sexual Boredom Scale (SBS; Watt & Ewing, 1996) was employed to measure the extent to which participants experienced boredom with the sexual aspects of their life, as an indicator of sexual satisfaction. On this scale, respondents are required to indicate the degree to which 18 statements describe them (e.g., "I prefer sexual relationships that are exciting and unpredictable.") using a 7-point Likert-type scale (1 = highly disagree to 7 = highly Agree). The total score is attained by calculating the mean for all items, and ranges from 1 to 7, with higher scores indicating greater sexual boredom. Overall, the SBS has demonstrated excellent psychometric properties, with Watt and Ewing (1996) finding that the scale has high reliability (Cronbach's $\alpha=.92-.95$, one month test-retest $\alpha=.81$). The scale has also demonstrated convergent validity, correlating positively and significantly with measures of: sexual depression, sexual preoccupation, sexual satisfaction, dyadic sexual discord, boredom proneness and sensation seeking (Watt & Ewing, 1996). The reliability of the scale in the current study was excellent (Cronbach's $\alpha=.91$).

4.2.3.7 Self-perceived changes in attitudes towards sexual activities and actual sexual behaviours

Participants were asked to indicate the extent to which they felt that pornography had affected their sexual attitudes towards, or the appeal of, specific sexual acts, on a visual analogue scale from 0 (not at all), through to 10 (very much so). If they indicated that there had been a change in attitude (i.e. an answer greater than zero) they were then asked to rate how they felt about the attitude change on a visual analogue scale ranging from -5 (very negative) through to 5 (very positive). Additionally, participants were asked to indicate the extent to which they felt that pornography had affected their actual sexual behaviours, on a visual analogue scale from 0 (not at all), through to 10 (very much so). If they indicated that there had been a change in behaviour (i.e. an answer greater than zero) they were then asked to rate how they felt about the behavioural change on a visual analogue scale ranging from -5 (very negative), through to 5 (very positive).

4.2.3.8 Body satisfaction

Body image satisfaction and self-concept were measured with an abbreviated form of the Body Attitudes Questionnaire (Story, 1984). The original scale consists of 49 items representing various body parts (e.g. waist) or processes (e.g. appetite), and requires participants to rate their degree of satisfaction for each body part, on a 5-point Likert-type scale from 1 (“Have strong negative feelings & wish change could somehow be made”) through to 5 (“Have strong positive feelings & desire no change to be made”). The full scale has demonstrated high test-retest reliability over a two-week period ($\alpha=.91$) and concurrent validity. However, for the purposes of the current study, the scale was shortened, such that items pertaining to body processes were excluded and only areas particularly pertinent to

sexual attraction (e.g. breasts, body build) were included. Additionally, some similar items (e.g. mouth and lips) were combined. As such, the final scale utilised in the current study consisted of 16 items, including an item concerning overall body satisfaction. A total score for general body satisfaction and a subscale score for genital image satisfaction (genitals, pubic hair/region & chest/breasts) was generated for analyses. In the current study, the abbreviated 16-item scale and 3 item genital image subscale demonstrated good (Cronbach's $\alpha=.89$) and acceptable ($\alpha= .62$) reliability, respectively.

4.3 Results

A summary of the descriptive statistics for the main outcome variables can be found in Table 4.3. Due to the predicted gender differences in internet pornography consumption, analyses were run separately for males and females, where appropriate and applicable.

Table 4.3

Descriptive Statistics for the Main Variables

Variable	Males (n=525)		Females (n=491)		Cohen's <i>d</i>
	<i>M(SD)</i>	<i>Range</i>	<i>M(SD)</i>	<i>Range</i>	
Freq of internet porn use (days)	183.07 (127.69)	0-365	33.76 (68.22)	0-365	1.46**
Sexual Scripts Overlap Scale	150.16 (15.36)	60-168	147.69 (18.97)	63-168	.14*
<i>Appeal of:</i>					
Sex Toys	2.89 (1.27)	1-5	3.68 (1.15)	1-5	.65**
Oral Sex	4.44 (.67)	1-5	3.91 (.99)	1-5	.64**
Anal Sex	3.16 (1.25)	1-5	2.19 (1.20)	1-5	.78**
Third party	3.56 (.95)	1-5	2.84 (1.16)	1-5	.68**
<i>Sexual Behaviour:</i>					
Masturbation Index	54.38 (52.31)	0-475	14.76 (20.99)	0-190	.98**
Manual sex Index	6.45 (29.21)	0-501	1.62 (4.06)	0-60	.23**
Oral Sex Index	7.56 (11.28)	0-80	7.47 (11.62)	0-100	.01
Anal sex index	7.74 (27.29)	0-337	1.97 (8.86)	0-173	.28**
# Times sex (3 months)	14.51 (22.59)	0-200	17.15 (23.56)	0-200	.11
# People sex (3 months)	2.00 (9.99)	0-200	1.36 (4.31)	0-60	.08
Sexual Boredom Scale	3.24 (1.06)	1.2-6.6	3.03 (.98)	1.2-6.0	.20**

Note: * $p < .05$, ** $p < .01$.

4.3.1 Testing the sexual inspiration model of internet pornography consumption

Path analysis, performed with the AMOS 19 statistical package using the maximum likelihood estimation method, was employed to test the sexual inspiration model of internet pornography consumption predicted in hypothesis one. This model was run separately for male and female samples. To test for indirect effects, bootstrapping with 2000 samples and

90% bias-corrected confidence intervals was used. Descriptive statistics and correlations can be seen in Tables 4.3 and 4.4, respectively. The final model is shown in Figure 4.2 for females and Figure 4.3 for males. It is important to note that there are more connections between variables in these models than the theoretical model, due to the statistical requirements of path analysis. Only the values for significant direct effects are displayed, represented by solid lines; non-significant paths of the models are represented by dotted lines. There were no missing data for either the male or female data sets.

In addition to the model Chi-square, four fit-indices were examined to determine model fit. The cut-off values employed, drawn from a range of authors (e.g. Beauducel & Wittmann, 2005; Browne & Cudeck, 1992; Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004) in the structural equation modelling literature, were as follows: (a) *acceptable fit* was determined if the root-mean-square error of approximation (RMSEA) \leq .08, standardized root-mean-square residual (SRMR) \leq .09, comparative fit index (CFI) \geq .90 and Normed Fit Index (NFI) \geq .90; (b) *good fit* was determined if RMSEA \leq .05 (or 90% confidence interval [CI] of the RMSEA including .05), SRMR \leq .09, and CFI and NFI \geq .95. For females, the hypothesised model appeared to be a good fit to the data ($\chi^2 = 78.87$ [$p < .001$], RMSEA = .05, SRMR = .04, CFI = .98, NFI = .96). For males, the hypothesised model was an acceptable to good fit to the data ($\chi^2 = 122.53$ [$p < .001$], SRMR = .04, RMSEA = .07, CFI = .95, NFI = .93). Accordingly, no post-hoc modifications were conducted.

As displayed in figure 4.2, for females, both viewing frequency and paraphilic use had significant direct effects on the appeal of a range of sexual activities, although these effect sizes were small. Frequency of internet pornography use also had large and significant direct effects onto self-masturbatory behaviour. Interestingly, neither viewing frequency nor paraphilic pornography use appeared to impact upon sexual scripts overlap. Thus, despite

internet pornography use having a direct relationship with attitudes towards sexual activities, the sexual scripts overlap scale did not appear to mediate this relationship.

As displayed in figure 4.3, for males, frequency of viewing internet pornography was correlated with increased appeal and a greater desire to incorporate oral, anal and third parties, but not sex toys, into their sexual activities. Similarly, paraphilic pornography use had direct effects on increasing the appeal of sex toys, anal sex and third party related sexual behaviours; however, for both viewing frequency and paraphilic use, effect sizes were small. As seen in females, frequency of internet pornography use also had large and significant direct effects onto self-masturbatory behaviour, confirming the obvious link of pornography as a masturbatory tool. Again, as with females, neither viewing frequency nor paraphilic pornography use appeared to impact upon sexual scripts overlap in males.

A summary of the statistics for the relevant indirect effects in the model is presented in Table 4.5. It was hypothesised that the effect of internet pornography use on the appeal and practice of sexual behaviour, in addition to sexual boredom, would be mediated by sexual script overlap. However, for both males and females, the indirect effects of frequency of internet pornography use, via sexual scripts overlap, upon the appeal of sexual activities were not significant (all $p > .05$). Similarly, the indirect effects of paraphilic pornography use upon the appeal of sexual activities were not significant for males or females (all $p > .05$). For females, both paraphilic and frequency of internet pornography use had significant and positive indirect effects upon five out of six of the sexual behaviours, in addition to increasing sexual boredom indirectly. However, for males, frequency of internet pornography use only had a significant indirect effect upon oral sex behaviour, and sexual boredom, and paraphilic pornography only had a significant indirect effect upon sexual boredom. Nonetheless, these results appear to partially confirm the model in both males

and females; frequency of and paraphilic pornography use appears to result in increases in the appeal of a range of sexual activities and, particularly for females, the practice of these activities. However, it is of note that this did not appear to occur through the indirect pathway of personal and pornographic script overlap. Finally, part a) of hypothesis one was confirmed, as frequency and paraphilic genre of internet pornography use resulted in increased sexual boredom, for both males and females. Nonetheless, it is of note that these findings represented small effect sizes.

Table 4.4.

Correlations Among the Variables Included in the SEM Model

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age	-	.21**	.03	-.09*	-.04	-.04	.11*	.16**	.21**	.16**	-.03	.01	.08	.16**	.06	.06	.04
2. Relationship Status	.30**	-	.02	.00	.07	-.03	.15**	.24**	.15**	.10*	-.02	.01	.29**	.09*	.34**	.00	-.20**
3. Sexuality	.04	-.06	-	.15**	.31**	.09*	.29**	.21**	.27**	.31**	.21**	.04	.08	.11*	.08	.05	.24**
4. Freq of Internet Porn use (days)	-.20**	-.19**	.12**	-	.43**	.08	.22**	.19**	.26**	.36**	.58**	.16**	.20**	.02	.15**	.01	.16**
5. Paraphilic Internet Porn Use	-.08	-.06	.11*	.28**	-	.09*	.28**	.21**	.32**	.36**	.34**	.08	.18**	.12**	.15**	.04	.16**
6. Sexual Scripts Overlap Scale	-.10*	-.18**	.12**	.11*	.09	-	.21**	.05	.01	.17**	.06	-.07	-.02	.03	-.05	-.05	.12**
7. Appeal- Sex Toys	.06	.01	.27**	.13**	.25**	.05	-	.51**	.45**	.54**	.30**	.13**	.20**	.07	.17**	.05	.13**
8. Appeal- Oral Sex	.09	.06	.08	.10*	.02	.04	.19**	-	.41**	.36**	.27**	.08	.34**	.09	.25**	.08	-.03
9. Appeal- Anal Sex	.13**	.05	.39**	.16**	.27**	.08	.53**	.29**	-	.51**	.27**	.09*	.32**	.19**	.24**	.08	.13**
10. Appeal –Third Party	.11*	.01	.19**	.22**	.23**	.16**	.30**	.28**	.41**	-	.28**	.16**	.20**	.15**	.19**	.11*	.31**
11. Masturbation Index	-.25**	-.21**	.14**	.53**	.21**	.06	.08	.07	.13**	.10*	-	.20**	.21**	.03	.19**	.10*	.14**
12. Manual Sex Index	-.05	-.05	-.02	.15**	.09*	.02	.00	-.04	.00	.13**	.10*	-	.25**	.12**	.23**	.60**	.09*
13. Oral Sex Index	.07	.33**	.12**	.00	.12**	-.05	.14**	.16**	.20**	.19**	.01	.07	-	.09*	.63**	.23**	-.05
14. Anal Sex Index	.27**	.05	.33**	-.01	.06	-.11*	.10*	.10*	.23**	.23**	-.02	.02	.21**	-	.09*	.12**	.09*
15. # Times Sex (3m)	.03	.40**	-.08	-.04	.09*	-.17**	.06	.10*	.07	.04	.01	.03	.60**	.03	-	.30**	-.12**
16. # People Sex (3m)	.02	.06	.02	.08	-.01	-.17**	-.04	.00	.01	.05	.05	.08	.20**	.08	.40**	-	.07
17. Sexual Boredom	-.02	-.13**	.15**	.16**	.25**	.14**	.09	-.01	.13**	.36**	.09*	.11*	.01	.18**	-.10*	.10*	-

Note: Female ($n=491$) data is represented above the diagonal and male ($n=525$) data below the diagonal. Freq= frequency; frequency of internet pornography use is a continuous variable.

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

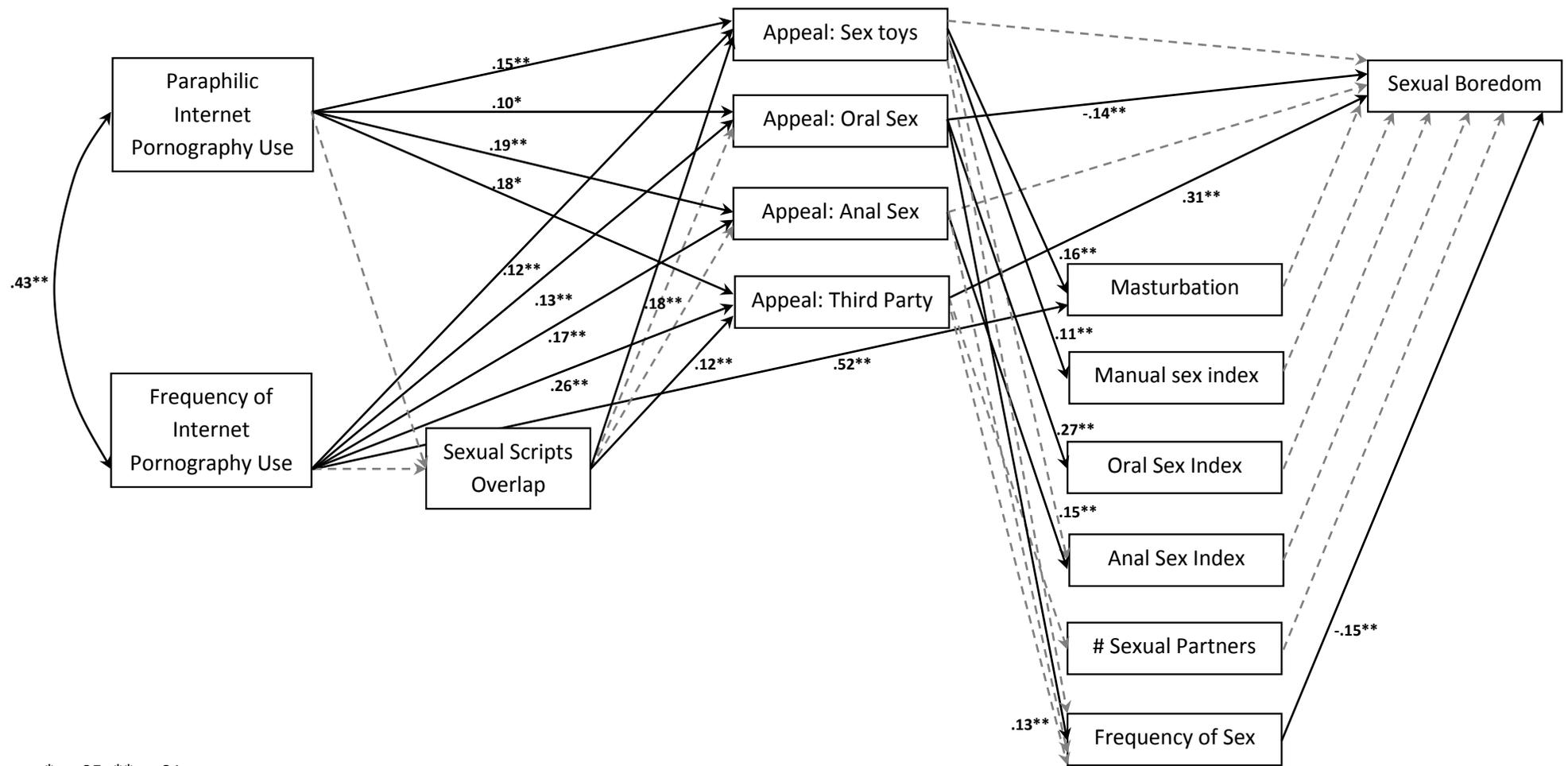
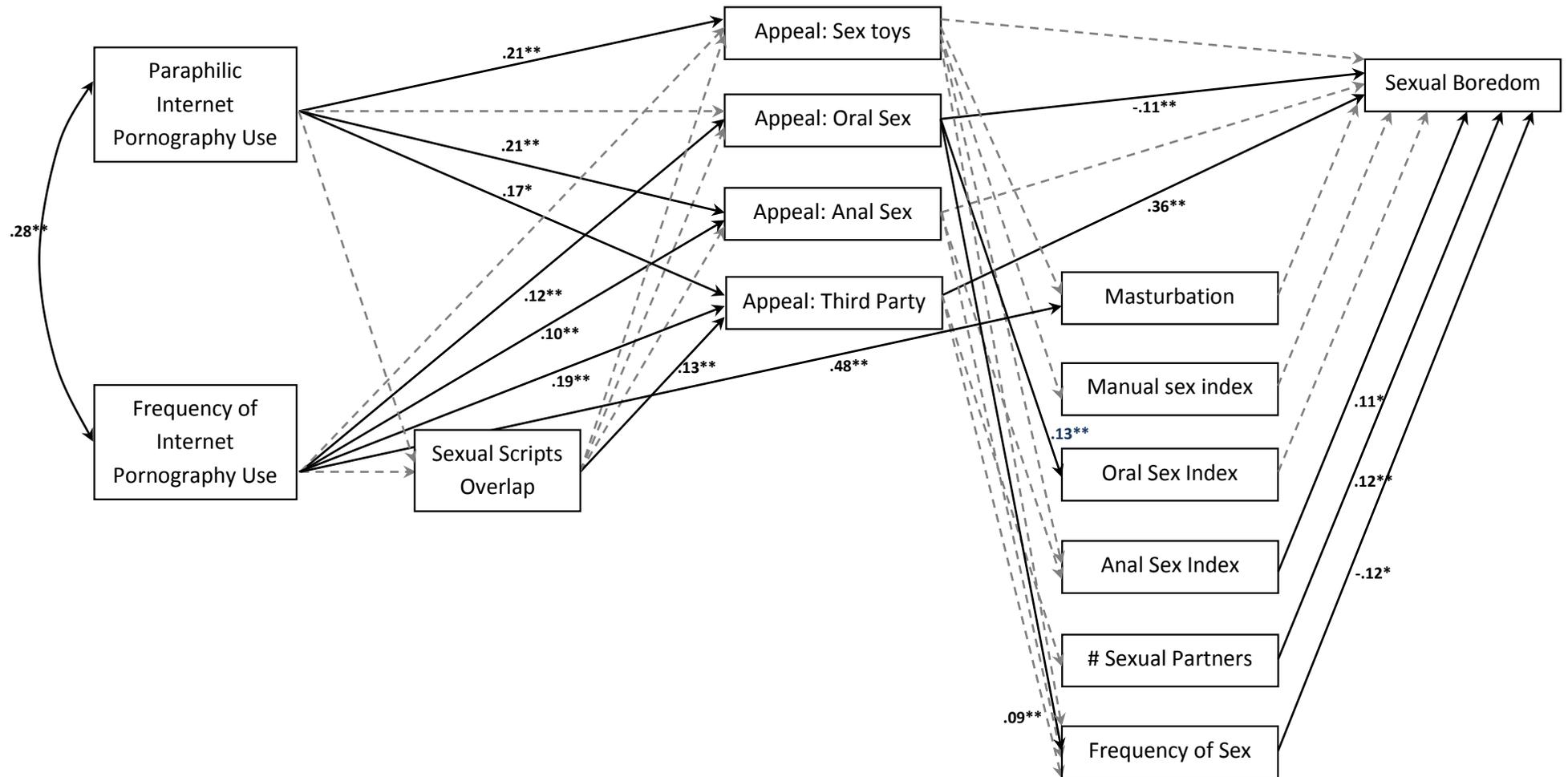


Figure 4.2. Path analysis of the sexual inspiration model of internet pornography consumption for females.



* $p < .05$, ** $p < .01$

Figure 4.3. Path analysis of the sexual inspiration model of internet pornography consumption for males.

Table 4.5

*Indirect Effects of Frequency of Internet Pornography Use and Paraphilic Internet**Pornography Use*

	Freq. of Internet Porn Use		Paraphilic Internet Porn Use	
	β (90% C.I.)		β (90% C.I.)	
	Females	Males	Females	Males
Appeal- Third Party	.01 (.00-.02)	.01(.00-.02)	.01(.00-.02)	.01(.00-.02)
Appeal- Anal Sex	.00(.00-.01)	.00(.00-.01)	.00(.00-.01)	.00(.00-.01)
Appeal- Oral Sex	.00(.00-.01)	.00(.00-.01)	.00(.00-.01)	.00(.00-.01)
Appeal- Sex Toys	.01(-.01-.02)	.00(.00-.01)	.01(.00-.03)	.00(.00-.01)
Freq. of Intercourse (past 3m)	.03(.02-.06)**	.01(-.01-.02)	.02(.01-.04)*	.00(-.02-.02)
# Sexual Partners (past 3m)	.01(-.01-.02)	.01(-.01-.02)	.01(.00-.02)	.00(-.01-.02)
Anal Sex Behavioural Index	.02(.00-.04)	.01(.00-.02)	.02(.00-.05)*	.01(-.01-.02)
Oral Sex Behavioural Index	.04(.02-.06)**	.02(.01-.03)	.03(.01-.05)*	.00(-.01-.01)
Manual Sex Behavioural Index	.02(.01-.03)**	.00 (-.01-.00)	.02(.01-.03)**	.00(-.02-.01)
Self-Masturbatory Behaviour	.02(.01-.04)**	.00(.00-.01)	.03(.01-.04)**	.00(-.01-.01)
Sexual Boredom Scale	.10(.04-.15)**	.07(.03-.12)	.04(.02-.07)*	.06(.03-.10)

Note: * $p < .05$. ** $p < .01$; freq= frequency.

4.3.2 Characteristics of pornography consumption: gender differences and themes

In order to investigate gender differences, a series of independent t-tests were conducted comparing the characteristics of male and female pornography users. In order to account for the number of t-tests and reduce the likelihood of type-I error, the Bonferroni correction was applied and alpha was set at .017. Frequency of viewing internet pornography (days per year) was greater for males ($M=186.98$, $SD=126.18$) than females

($M=48.6$, $SD=77.36$; $t(848.17)= 19.87$, $p<.001$) and the average number of hours spent viewing internet pornography per week was also greater for males ($M=2.93$, $SD=3.35$) than females ($M=.82$, $SD=1.31$; $t(719.36)= 12.85$, $p<.001$). Additionally, for those who regularly viewed internet pornography, age of first exposure was significantly lower for males ($M=12.24$, $SD=3.13$) than females ($M=13.56$, $SD=4.02$; $t(578.43)= 5.06$, $p<.001$).

Table 4.6 displays the frequencies and Chi-square results for the other pornography use characteristics of interest. Male participants tended to view internet pornography on a broader range of devices, were more often alone and more likely to have paid for pornography than females; there were no gender differences in paraphilic pornography use. In addition, males typically indicated that pornography played a more important role for them than females. Figure 4.4 displays the frequencies of pornographic genres viewed by users, including significance levels for gender differences. In general, males viewed a broader range of internet pornography than females, with Chi-square tests revealing that the proportion of male viewers was significantly greater than female viewers for the majority of genres, except for couple/romantic, female friendly and bisexual themes, which had a higher proportion of female viewers.

4.3.3 Self-perceived changes in attitudes towards sexual activities and actual sexual behaviours

Figures 4.5-4.8 display the frequencies for participants' responses to whether internet pornography has affected their attitudes or behaviours, and if so, how they felt about these changes. In order to investigate hypotheses three and four, a series of one sample t-tests were conducted comparing the characteristics of male and female internet pornography use. The Bonferroni correction was again applied, with alpha set at .006, to account for the number of t-tests in this set and minimize the chance of type I error.

Hypothesis two was confirmed, as both males and females were more likely to report self-perceived changes in both attitudes towards specific sexual activities (females: $M= 4.65$, $SD=3.15$, $t=27.31$, $p<.001$; males: $M=5.28$, $SD=3.12$, $t=38.34$, $p<.001$) and actual behaviour (females: $M= 3.80$, $SD= 3.17$, $t=22.14$, $p<.001$; males: $M= 4.5$, $SD=3.14$, $t=32.52$, $p<.001$), than no change at all. Hypothesis three was also confirmed, the average self-perceived effects of internet pornography on sexual attitudes (females: $M=6.51$, $SD=2.55$, $t=9.81$, $p<.001$; males: $M=6.51$, $SD=2.49$, $t=12.55$, $p<.001$) and behaviour (females: $M=6.85$, $SD=2.39$, $t=11.95$, $p<.001$; males: $M=6.80$, $SD=2.56$, $t=14.02$, $p<.001$) was significantly greater than 0 (neutral). To investigate hypothesis four, Pearson correlations were run to ascertain whether viewing any particular pornographic themes was associated with a self-reported change in sexual attitudes or behaviour from watching pornography (see Table 4.7). For females, anal sex, double or multiple penetration, hardcore, group sex, large penis, male ejaculation, oral sex and paraphilic pornographic themes were associated with positively valued attitudinal and/or behavioural changes. For males, anal sex, BDSM, oral sex, sex toys, vintage/classic and paraphilic themes were associated with positively valued changes. There were no significant negative correlations for feelings towards attitudinal or behavioural changes for either males or females, indicating that no particular theme was associated with negative changes.

Table 4.6

Frequencies of Internet Pornography Use Characteristics and Significance of Gender

Internet Pornography Use Characteristic	Females	Males	χ^2
	%	%	
<i>Devices Used to View Internet Porn:</i>			
Desktop computer	17.0	43.4	64.64**
Laptop	73.9	62.8	11.39**
Tablet device	12.3	23.0	15.26**
Smart phone	32.3	35.0	.70
<i>Viewing Company:</i>			25.46**
Alone	77.8	88.7	
With partner	7.4	1.8	
With friends	1.2	0.4	
Sometimes alone/with partner	13.6	8.8	
<i>Use of Paid Internet Pornography:</i>			8.2**
No	97.9	93.8	
Yes	2.1	6.2	
<i>Paraphilic Internet Porn Use:</i>			1.15
No	75.4	61.7	
Yes	24.6	38.3	
<i>Importance of Internet Porn Use:</i>			103.44**
Not at all important	37.5	12.3	
Somewhat unimportant	12.6	8.2	
Neither important nor unimportant	33.4	39.5	
Somewhat important	14.4	31.9	
Very important	2.1	8.2	

Note: * $p < .05$. ** $p < .01$

Table 4.7

*Correlations Between Internet Pornography Genre and Self-Perceived Attitude and Behaviour**Change*

	Attitude Change		Feelings re: Att.		Behaviour Change		Feelings re:	
	Females	Males	Females	Males	Females	Males	Females	Males
Amateur	-.04	.08	.07	.04	-.02	.09*	.02	.07
Anal Sex	.18**	.22**	.18**	.13**	.16**	.18**	.24**	.04
Anime/ Hentai	.03	.07	.00	.03	-.05	-.01	.02	.00
"BBW"	.10	.05	.02	.05	.00	.04	.00	.06
BDSM	.08	.19**	.15*	.15**	.09	.15**	.17**	.10*
Bisexual	.09	.05	.14*	.04	.04	.01	.11	.03
Bizarre/ funny	-.04	.07	.04	.06	.00	.00	.10	.02
Couple/romantic	.05	-.03	.10	.06	.00	.04	.05	.08
Multiple Penetration	.12*	.14**	.29**	.08	.14*	.07	.27**	.11*
Male Ejaculation	.10	.20**	.13*	.05	.14**	.18**	.16*	.08
Ethnic	.04	.11**	.00	.07	.05	.08	.13*	.04
Fantasy	.02	.06	.03	.01	.02	.02	.03	-.05
Female Ejaculation	.03	.09*	.05	-.02	.07	.05	.07	.01
Female Friendly	.12*	.00	.12*	.06	.00	.00	.01	.10*
Hardcore	.18**	.17**	.18**	.01	.14*	.15**	.14*	.01
MSM	.04	.09*	.08	.07	.07	.07	.10	.07
Large Breasts	.04	.11*	.07	-.04	.05	.03	.07	.00
Large Penis	.11*	.20**	.15*	.02	.09	.16**	.19**	.04
Lesbian	.05	.11*	.12*	.01	.03	.07	.06	-.01
Masturbation	-.01	.03	.11	.05	-.04	.00	.11	.08
Mature Age	-.02	.05	.15*	-.01	.04	.08	.10	-.01
Oral Sex	.13*	.10*	.18**	.12*	.07	.07	.21**	.10
Point of View "POV"	-.01	.09*	.02	-.03	-.05	.08	.08	-.01
Sex Toys	.05	.17**	.15*	.13**	.10	.10*	.13*	.10*
Teenage (>18)	.08	.11*	.01	-.07	.05	.13**	.00	-.10
Group Sex	.19**	.07	.28**	.12*	.20**	.08	.27**	.11*
Vintage/classic	.06	.03	-.02	.17**	.08	.10*	.08	.13**
Urination	.01	.04	.05	.07	.00	.08	.10	.05
Paraphilic	.13*	.21**	.15*	.13**	.13*	.17**	.17**	.07

Note: * $p < .05$, ** $p < .01$

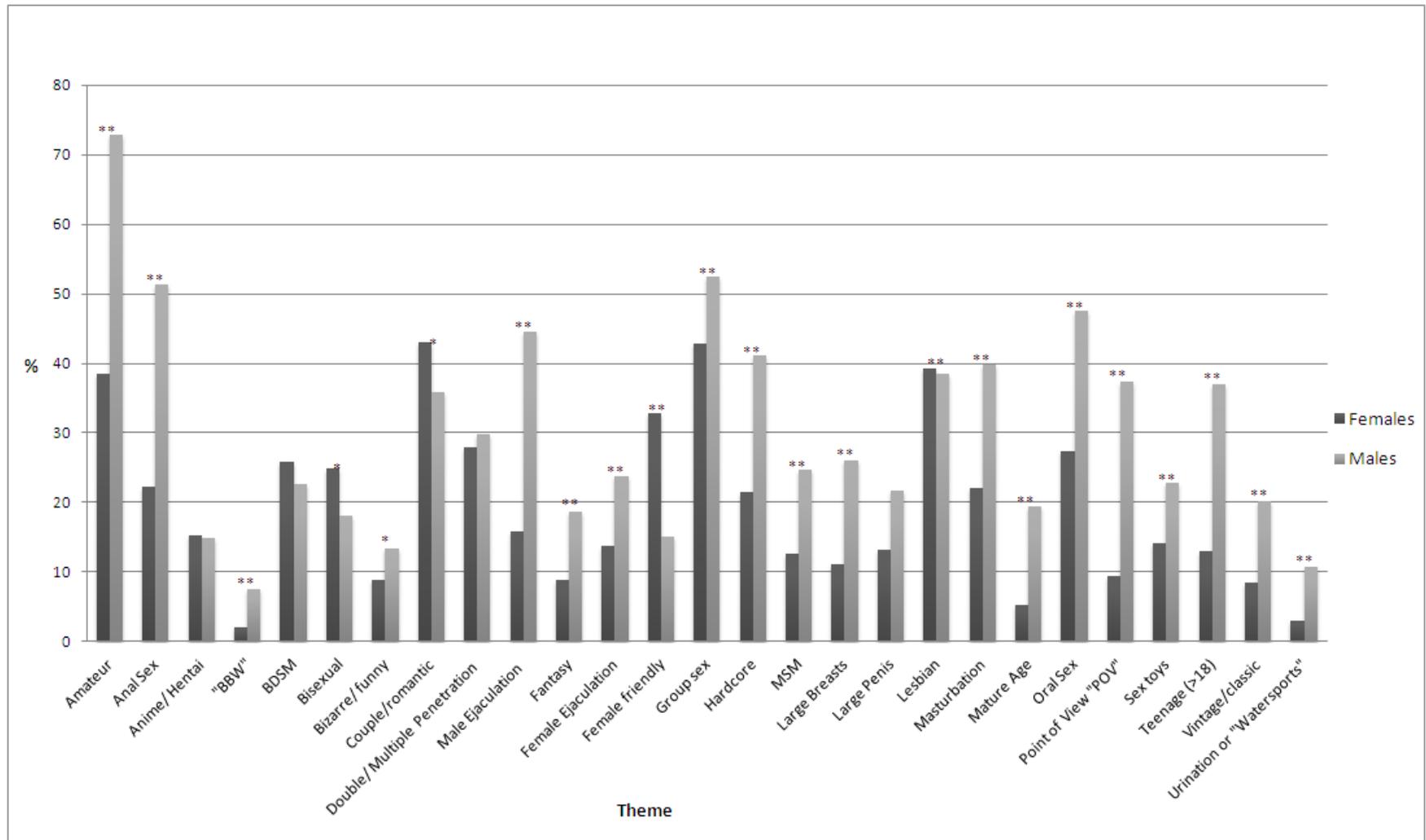


Figure 4.4. Internet pornography genres viewed in the past 12 months by regular users and gender differences.

Note: * $p < .05$, ** $p < .01$, for Chi-Square test of gender differences; BBW= Big Beautiful women, BDSM= Bondage & Discipline, Sadomasochism, MSM= Men who have Sex with Men

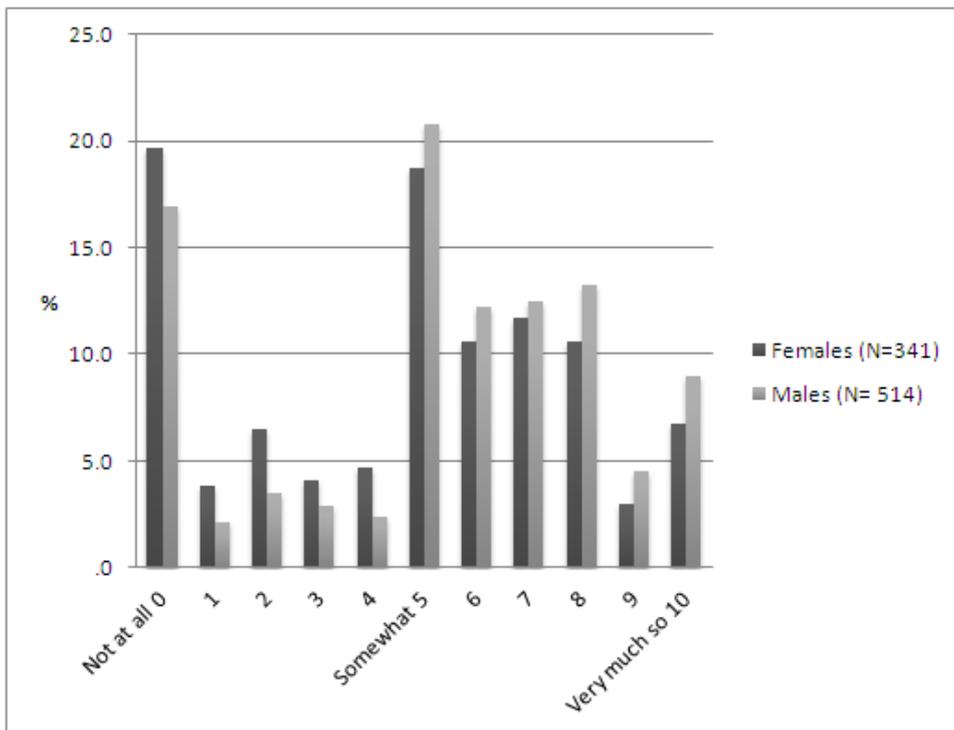


Figure 4.5. Self-report responses regarding to what extent participants believed pornography had affected their attitudes toward (or appeal of) specific sexual acts.

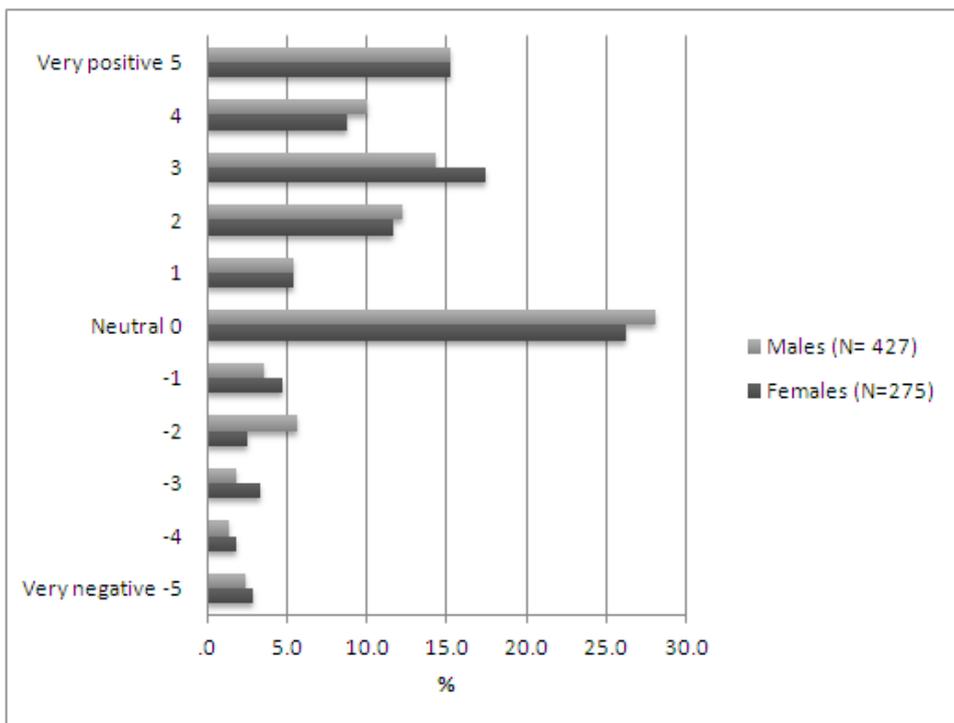


Figure 4.6. Self-report responses regarding feelings towards changes in personal sexual attitudes brought about through pornography use.

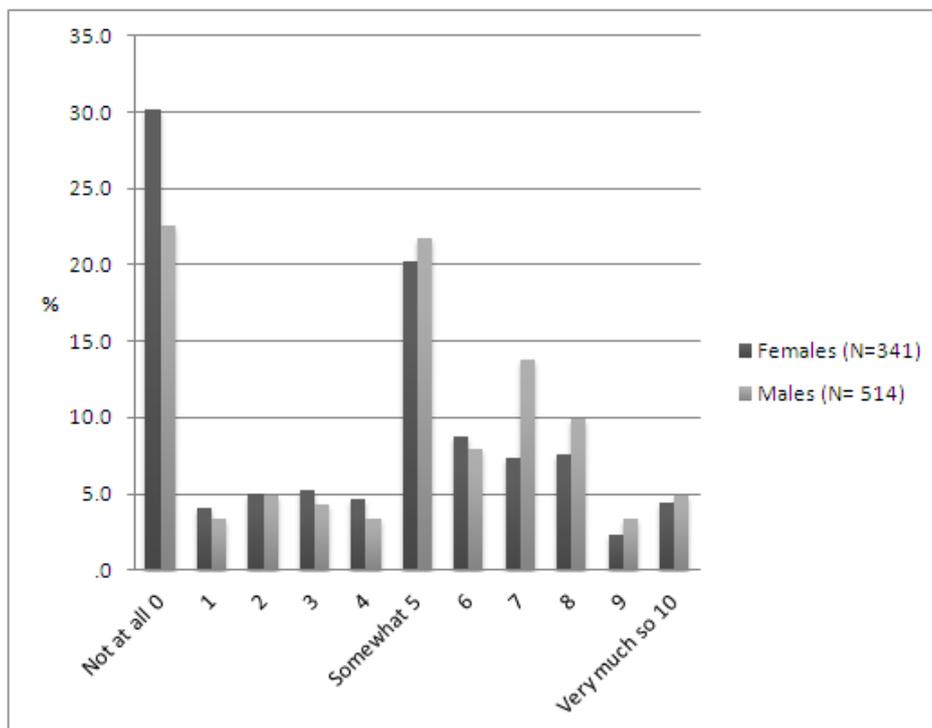


Figure 4.7. Self-report responses regarding to what extent participants believed pornography had affected their sexual behaviours.

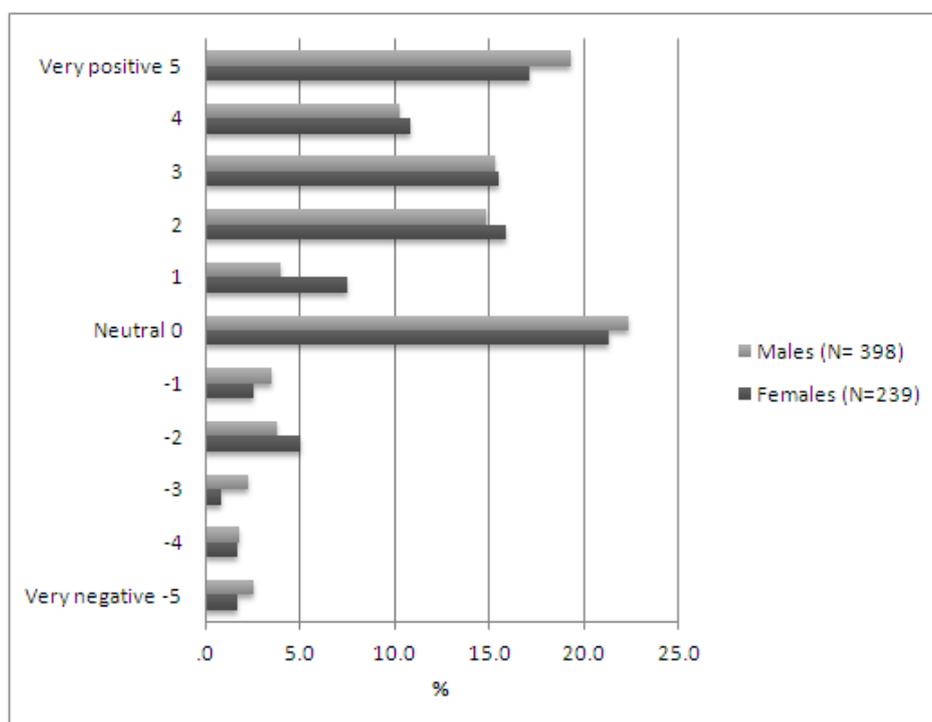


Figure 4.8. Self-report responses regarding feelings towards changes in sexual behaviour brought about through pornography use.

4.3.4 Internet pornography use and body and genital image

There were no gender differences (all $p > .05$) in level of body satisfaction (females: $M=3.20$, $SD=.69$; males: $M=3.23$, $SD=.63$) and genital satisfaction (females: $M=3.34$, $SD=.82$; males: $M=3.28$, $SD=.78$). In order to test hypotheses five and six, a series of hierarchical, moderated regressions were performed for the total body satisfaction and genital image satisfaction scores, with alpha set at .05. Preliminary analyses were conducted to ensure there were no violations in the assumptions of linearity, normality, and homoscedasticity through examining the normal probability and residual plots. Variance Inflation Factors (VIFs) and tolerance values indicated no harmful levels of multicollinearity. VIFs in the current regression models did not exceed 1.32 and 1.25, and tolerance values were .76 and .80 or greater, for females and males, respectively. The predictor variables were entered in three steps; step one comprised of demographic variables to be controlled for, including age, religiosity, ethnicity, relationship status and sexual orientation. Step two encompassed the SSOS total, in addition to the pornography variables, including frequency of internet pornography use, whether paraphilic pornography was viewed and age of first exposure to pornography. Finally, step three included an interaction term of the mean centred variables of frequency of internet pornography use and total SSOS score, in order to determine whether there was any moderation occurring.

The results of the regression analysis for body satisfaction are reported in Table 4.8 for females, with the statistics from the full model. The full regression model was significant, and accounted for 5.1% of the total variance in body satisfaction; $R^2 = .05$, adjusted $R^2 = .03$, $F(10, 425) = 2.31$, $p = .012$. Step one, comprising demographic variables, accounted for 3.2% of the total variance in body satisfaction for females; $R^2 = .03$, adjusted $R^2 = .02$, $F(5, 430) = 2.81$, $p = .016$. The addition of steps two and three containing the variables related to

sexual scripts and pornography use did not result in a significant increment in prediction over and above that of step one; Step two: F change (4, 426) = 2.14, $p = .076$; Step three: F change (1, 425) = .36, $p = .547$. Thus, pornography use, sexual scripts overlap, or pornography use moderated by sexual scripts did not predict body satisfaction scores in the current model. For males, the full regression model was not significant; $R^2 = .03$, adjusted $R^2 = .01$, $F(10, 505) = 1.35$, $p = .199$.

The results of the regression analysis for genital image satisfaction are reported in Table 4.9 for females and males. For females, the full regression model was significant accounting for 6.1% of the total variance in genital image satisfaction; $R^2 = .06$, adjusted $R^2 = .04$, $F(10, 425) = 2.76$, $p = .003$. Step one, comprising demographic variables, accounted for 5.3% of the total variance in body satisfaction for females; $R^2 = .05$, adjusted $R^2 = .04$, $F(5, 430) = 4.78$, $p < .001$. The addition of steps two and three containing the variables related to sexual scripts and pornography use did not result in a significant increment in prediction over and above that of step one; step two: F change(4, 426) = .93, $p = .446$; step three: F change(1, 425) = .03, $p = .854$. Thus, pornography use, sexual scripts overlap, or pornography use moderated by sexual scripts did not predict genital satisfaction scores in the current model. For males, the full model was significant, accounting for 3.6% of the total variance in genital image satisfaction; $R^2 = .04$, adjusted $R^2 = .02$, $F(10, 505) = 1.89$, $p = .044$. Step one, comprising demographic variables, accounted for 2.8% of the total variance in genital image satisfaction for females; $R^2 = .03$, adjusted $R^2 = .02$, $F(5, 510) = 2.95$, $p = .012$. The addition of steps two and three containing the variables related to sexual scripts and pornography use did not result in a significant increment in prediction over and above that of step one; step two: F change(4, 506) = 1.02, $p = .395$; step three: F change(1, 505) = .11, $p = .742$. Again,

neither pornography use, sexual scripts overlap, nor the interaction of these variables predicted genital image satisfaction scores in the current model.

Table 4.8

Summary of Hierarchical Regression Analysis for Variables Predicting Body Satisfaction in Females

Variable	Step 1	Step 2	Step 3	
	β	β	β	
Age	.04	.06	.06	
Religiosity	-.03	-.03	-.03	
Ethnicity	.06	.06	.06	
Relationship Status	.16**	.16	.16	
Sexual Orientation	.01	-.01	-.01	
SSOS Total		-.09	-.09	
Freq. of Internet Porn Use		.07	.06	
Age of Exposure		-.09	-.09	
Paraphilic Internet Porn Use		-.01	-.01	
SSOS X Freq Internet Porn Use			.03	
	R^2	.03*	.05**	.05*
	R^2 Change		.02	.00

Note: * $p < .05$. ** $p < .01$, SSOS= Sexual scripts overlap scale, freq= frequency

Table 4.9

Summary of Hierarchical Regression Analysis for Variables Predicting Genital Satisfaction

Variable	Step 1		Step 2		Step 3		
	β		β		β		
	Females	Males	Females	Males	Females	Males	
Age	.18**	.11*	.19**	.12*	.19**	.11*	
Religiosity	.01	.00	.01	.00	.01	.00	
Ethnicity	-.03	.01	-.04	.01	-.03	.01	
Relationship Status	.09	.10*	.09	.08	.09	.08	
Sexual Orientation	.06	-.01	.06	.00	.06	.00	
SSOS Total			-.06	-.05	-.06	-.05	
Freq. of Internet Porn Use			.05	-.05	.05	-.05	
Age of Exposure			-.05	-.04	-.05	-.04	
Paraphilic Use			-.03	-.04	-.04	-.04	
SSOS X Freq Internet Porn Use					-.01	.02	
	R^2	.05**	.03*	.06**	.04*	.06**	.04*
	R^2 Change			.01	.01	.00	.00

Note: * $p < .05$, ** $p < .01$, SSOS= Sexual scripts overlap scale, freq= frequency

4.4 Discussion

In the current study, an exploration of the relationship between internet pornography use and sexual scripts, and how this impacts upon sexual attitudes, sexual activities, sexual satisfaction and body image in adult Australians, was undertaken. The hypothesised sexual inspiration model of internet pornography consumption received partial support. Both genre of use and extent of internet pornography use were associated with

perceiving specific sexual acts which commonly occur in pornography as more appealing, and engaging in these sexual activities more frequently, which is in line with previous research (Morgan, 2011; Weinberg et al., 2010). Accordingly, the results of the current study demonstrate that internet pornography may play a role in broadening sexual scripts through changes in sexual attitudes and actual sexual behaviour. However, the mechanism of this link did not appear to be through the extent of overlap between personal sexual scripts and pornographic scripts. This finding does not appear to be congruent with sexual script theory. Sexual attitudes and behaviour are considered to be part of sexual scripts and therefore, it was expected that if an association was present with internet pornography use, this would be mediated by the sexual scripts overlap scale. Potentially, this may have been due to a ceiling effect with the scale, as the majority of participants tended to have large overlap with pornographic scripts. Alternatively, the absence of this relationship may be the result of poor validity of this measure and its ability to assess the idiosyncratic and complex nature of sexual scripts. The authors assert that, due to its high internal consistency, the measure should be used as a unitary scale; however, they also report the identification of several subscales of the measure which have clear differences from one another (for example, importance of emotions and communication versus physical appearance; see Stulhofer et al., 2010 for further details). Accordingly, it may be that this scale overlooks differences in the importance that participants place on different aspects of sex, as this is averaged out in the total score. Future research could explore and compare alternative measures of sexual scripts, in order to further delineate this issue.

In further support of the sexual inspiration model of internet pornography consumption, a link between higher sexual boredom and internet pornography use, operating through greater appeal and practice of sexual behaviour, was also established.

This is partially in line with Stulhofer et al. (2010), who found that paraphilic, but not mainstream pornography use, indirectly and negatively impacted upon sexual satisfaction through sexual script overlap and lowered levels of intimacy. Similarly, lower sexual satisfaction has been demonstrated to be associated with a greater frequency of pornography use in both adults and adolescents (Morgan, 2011; Peter & Valkenburg, 2009). The current findings lend some support to the idea that pornography may lead to distorted sexual scripts, changing consumers desires and preferences, with this disconnect between reality and expectations of sex eventually impacting upon satisfaction (Döring, 2009; Hald & Malamuth, 2008; Morgan, 2011; To et al., 2012). Accordingly, pornographic material may act as a yardstick for sexual performance, through feeding conceptualisations of enjoyable and desirable sex, fuelling dissatisfaction through mechanisms of social comparison (Peter & Valkenburg, 2009; Stulhofer et al., 2010). Nonetheless, the correlational nature of the study limits determining any causal directions. Potentially, the reverse relationship may be true, as particular pre-established sexual scripts may determine a greater level of sexual boredom in certain individuals, in addition to more liberal and accepting views of, and greater engagement in, sexual activities; a concept in line with the notion of trait based sexual affect, which can range from erotophobic to erotophilic (Fisher & Barak, 2001). Accordingly, such personal characteristics may lead certain individuals to seek stimulation through viewing pornography, particularly those genres which are in line with their sexual scripts, as suggested by theories including the confluence model (Malamuth, Addison, & Koss, 2000; Malamuth, Sockloskie, Koss, & Tanaka, 1991; Stulhofer et al., 2010), sexual involvement theory (Mosher, 1980) and the uses and gratifications approach (Paul & Shim, 2008; Peter & Valkenburg, 2011b; Ruggiero, 2000). Recent neurological research revealed that pornography consumption was correlated with a number of structural and functional

neurological differences, including decreased grey matter volume in the right caudate nucleus of the striatum (Kühn & Gallinat, 2014). While the findings were correlational and no causal inferences were able to be made, the results suggested that pornography users tend to require greater external stimulation of neurological reward pathways, which is in line with the increased sexual boredom observed in the present study (Kühn & Gallinat, 2014).

Another alternative is that a non-satisfying sex life may lead to increased pornography consumption (Morgan, 2011). This has previously been demonstrated in adolescents using longitudinal data, whereby adolescents' sexual satisfaction predicted increased frequency of pornography at one year follow up; however, the reverse effect was also shown, as increased pornography use predicted decreased sexual satisfaction at follow up (Peter & Valkenburg, 2009). Thus, it may be that there is a bi-directional relationship between these variables.

A number of novel findings regarding gender differences in pornography consumption were identified. Males viewed a broader range of genres than females; perhaps reflecting their greater and more frequent use of internet pornography, which is a robust finding that was again replicated in the current study. Also confirming previous results (Hald & Malamuth, 2008; Hald, Smolenski, et al., 2013), only a small minority of males and females felt that the self-perceived impact of pornography on their attitudes towards sex and their actual sexual activities was negative, with the average self-perceived effects of pornography on sexual attitudes and behaviour being positive, and with positive feelings towards self-perceived changes being associated with a range of pornographic genres. The tendency for pornography consumers to rate the self-perceived effects of use as more positive may be interpreted in several ways. Caution must be used in taking this effect at face value, particularly due to the well-documented third-person effect, which is the

tendency for individuals to perceive the effects of media to have a more negative impact on others than on themselves (e.g. Lee & Tamborini, 2005; Lo & Wei, 2002; Zhao & Cai, 2008). As such, it may be that this biased positivity has influenced participants to focus only on the benefits of their pornography use, discarding possible undesirable impacts, such as sexual boredom, as the findings suggest. Even so, the direction of the third person effect is unclear, and it may be that consumers tend to overestimate the negative impact on others, as opposed to underestimating this for themselves (Gunther, 1995); furthermore, the results of the current study demonstrated that a large majority of participants indicated that the effects had been positive, and the magnitude of the third-person effect is undocumented. On the other hand, it has also been argued that increases in the acceptance of pornography at both the individual and societal level, as a gradual desensitisation occurs, may impact the perception of pornography, and thus, self-perceived impacts should be interpreted with caution (Hald & Malamuth, 2008; Hald, Smolenski, et al., 2013; Paul, 2007). Nonetheless, with the above biases acknowledged, it may be that pornography consumers' self-reflections are in fact accurate, whereby they are inspired or educated to incorporate aspects of what they view into their own sexual repertoire; which could be a potential benefit of pornography consumption.

Contrary to social comparison theory, an association between internet pornography use and poorer genital or body image satisfaction was not seen in the present study. This was further supported by a lack of association or moderation effect for sexual scripts overlap. Accordingly, these findings tend to suggest the idea that internet pornography use in adults is not harmful to body or genital image; providing some clarity to the inconsistent literature (Duggan & McCreary, 2004; Morrison et al., 2006; Morrison et al., 2004). Future

research should seek to replicate this research using a representative sample, and a broader range of scales, in order to capture whether any relationship does indeed exist.

The current study had some limitations. Firstly, despite the results of structural equation modeling supporting the theoretical model, the study was cross sectional in nature. As such, other models with equally as good fit cannot be excluded, and any causal inferences are limited. Secondly, while all attempts were made to obtain a representative community sample, it is likely that the sample was biased, due to the nature of recruitment and the websites and organizations that were involved in this process. Furthermore, as previously discussed, sexually permissive individuals, or those with a greater interest in the area, are more likely to be over-represented in sexuality research, due to self-selection bias (Wiederman, 1999). In addition, relying on self-report in the current study may also have biased the results, particularly in terms of perceived effects of pornography, as this measure did not take into account the views and experiences of participants' partners.

Overall, the effect sizes for the relationships observed in this study were small, particularly for those observed for the sexual inspiration model of internet pornography consumption; suggesting that regardless of the direction of effect, the clinical implications and real-world significance may be minimal. Furthermore, as noted, there was a ceiling effect with the sexual scripts overlap scale, whereby the majority of participants had a greater overlap between personal and pornographic scripts. For females, this overlap was not related to frequency of internet pornography use, and for males, while significant, this correlation was of a small effect size. As such, it is important to note that support for the sexual inspiration model not be overstated or misinterpreted. Accordingly, if pornography itself does not greatly impact upon conceptualisations of sex, it may be that other prior learning or sexual socialisation is responsible. Potentially, this may be represented in the

“pornification” of pop culture in general, as “porno-chic”, sexually permissive and sexually explicit trends increase in mainstream media other than pornography (McNair, 2002; Stulhofer et al., 2010). As such, cultural changes and influences as a whole could be responsible, rather than pornography, which is has previously been the subject of moral panic (Hald & Malamuth, 2008; Stulhofer et al., 2010). This is further supported by the finding that the majority of participants viewed the impact of pornography on their sex lives as positive, and that no relationship was observed between internet pornography use and genital or body image. As Hald and Malamuth (2008) note, it may be that *“in the context of a highly liberal and sex educated society, pornography’s impact is relatively positive and...media and popular books’ reports of highly negative effects on consumers are exaggerated or unfounded (p. 622).”* Seeking to further elucidate whether pornography contributes to and shapes an individual’s sexual scripts and practice, the following chapter explores the potential interpersonal outcomes of consumption, examining associations with intimacy and sexual communication within relationships.

Chapter 5: Use of Internet Pornography in Individuals in Relationships; Sexual Communication and Intimacy

5.1 Literature Review

While a large body of literature has focused on the impact of excessive or addictive pornography use on romantic relationships (for a review see Manning, 2006), fewer studies have examined the way in which pornography is recreationally used by those in relationships, and how this may interact with its potential benefits or negative consequences. Accordingly, the following study sought to examine how pornography is used by individual members of a couple, and whether this practice is linked to indicators of relationship health such as intimacy and sexual communication.

Pornography may be used in different ways within couples, or by individual members of a couple. One member of a couple may use pornography in a solitary context, for example, when their partner is away or circumstances prevent sexual relations from occurring (Bridges & Morokoff, 2010; Morgan, 2011). As some partners believe it is unacceptable or undesirable to use pornography within a relationship (Olmstead, Negash, Pasley, & Fincham, 2013), this consumption may occur with or without a partner's knowledge (Bridges & Morokoff, 2010; Daneback, Træen, & Månsson, 2009). On the other hand, a couple may also view pornography together, as an adjunct for sexual arousal, or a tool for sexual education (Albright, 2008). Several studies have established a pattern of pornography use in couples, which differs between males and females (Daneback et al., 2009; Månsson, Daneback, Tikkanen, & Löfgren-Mårtenson, 2003; Traeen & Nilson, 2006). While male partners primarily tend to watch pornography as a solitary activity to engage in masturbation, females are more likely to participate in pornography viewing when it is a shared activity in the company of their partner (Bridges & Morokoff, 2010; Poulsen et al.,

2012). Accordingly, it appears that within couples, women's pornography consumption is intimately linked to that of their partner, and this may be an important factor contributing to the potential impact of pornography use on relationships (Daneback et al., 2009). When viewed together, pornography has been successfully utilised by sex therapists as a means to enhance sexual intercourse and sexual communication between partners (Robinson, Manthei, Scheltema, Rich, & Koznar, 1999). The mutual consumption of pornography as a joint form of fantasy has been hypothesised to stimulate sexual communication, enhance intimacy and increase sexual satisfaction (Manning, 2006). Conversely, it is possible that pornography consumption may also negatively affect sexual functioning and satisfaction within relationships, and this may particularly be the case where only one partner engages in pornography use (Daneback et al., 2009).

5.1.1 Intimacy

Moss and Schwebel (1993) define intimacy as "the level of commitment and positive affective, cognitive, and physical closeness one experiences with a partner in a reciprocal (although not necessarily symmetrical) relationship" (p.33). Intimacy is an essential component of a romantic relationship, and has consequences for relationship satisfaction, social development, personal adjustment and physical health (Moss & Schwebel, 1993). Lack of intimacy is one of the most frequently cited reasons for divorce (Waring, 1987). Most of the literature to date has focussed on the potential negative impacts of pornography use on sexual and relational scripts, such as distorting the link between emotions, intimacy and sexuality, or possibly strengthening power inequalities within relationships (Dines et al., 1997; McKee, 2005; Stulhofer et al., 2010). Further, various authors of both peer-reviewed and popular literature have expressed concern regarding the potential impact of pornography use upon intimacy and closeness within romantic relationships, asserting that

consumption may lead to both reduced intimacy and sexual callousness (e.g. Bergner & Bridges, 2002; Manning, 2006; Paul, 2007; Zillmann, 2000). Despite this, it is currently unclear whether such a link exists and the available scientific literature examining this area is minimal; moreover, the majority of the research has focused on the impact of compulsive or heavy pornography use (e.g. Bergner & Bridges, 2002; Schneider, 2000) with little consideration of other levels of consumption. Lower levels of intimacy have been linked to paraphilic pornography use and younger ages of initial exposure to pornography (Stulhofer et al., 2010). Additionally, in both experimental and cross-sectional research, pornography use has been linked to reduced romantic commitment to one's partner (Lambert et al., 2012), and happily married adults are significantly less likely to report pornography use (Stack, Wasserman, & Kern, 2004). On the other hand, Popovic (2011) found no difference in socio-emotional closeness with significant others, a concept similar to intimacy but specifically referring to the emotional component of a relationship, and an enhanced sense of intimacy has been reported by light to moderate consumers of internet pornography (Groves et al., 2011). Thus, considering the limited and inconsistent literature regarding the link between pornography use and intimacy within romantic relationships, this area warrants further investigation.

5.1.2 Sexual communication

Sexual communication is an integral component of a satisfying sexual relationship, and measures of satisfaction with sexual communication have also been found to positively predict relationship development, adjustment, cohesion, satisfaction and consensus, in addition to expression of affection (Cupach & Comstock, 1990). Preliminary research indicates that pornography use may be associated with enhanced sexual communication. Pornography users have reported the self-perceived benefits of finding it easier to talk to

their partner about what they wanted sexually, particularly when pornography was viewed with a partner as a means of enhancing sexual arousal (Albright, 2008; Grov et al., 2011). Daneback et al. (2009) demonstrated that couples who both use pornography are characterized by a more permissive erotic climate, whereby they felt able to express their sexual fantasies and needs compared to non-users. Males reported that they found it easy to talk to their partner about sex, when their partner knew that they watched online pornography, in addition to having fewer problems with sexual arousal and negative thoughts about self (Daneback et al., 2009). Where only one partner viewed pornography, the couples also had better sexual communication, but experienced greater problems with sexual arousal and negative thinking. Consequently, preliminary evidence suggests some positive relationships between sexual communication and pornography use, especially where pornography is viewed together.

5.1.3 Hypotheses

Based upon the literature to date, two hypotheses are proposed:

1. When compared to non-use, regular consumption of internet pornography, early age of initial exposure and paraphilic pornography use will be associated with decreased partner intimacy, controlling for demographic variables.
2. In pornography users only, partner intimacy will be associated with frequency of internet pornography use and this relationship will be moderated by viewing company (alone vs. with partner), controlling for demographic variables.
3. When compared to non-use, regular consumption of internet pornography, early age of initial exposure and paraphilic pornography use will be associated with increased partner sexual communication satisfaction, controlling for demographic variables.

4. In pornography users only, partner sexual communication satisfaction will be associated with frequency of internet pornography use and this relationship will be moderated by viewing company (alone vs. with partner), controlling for demographic variables.

5.2 Methods

5.2.1 Design, procedure and recruitment

Please refer to chapter three for an overview (section 3.2.1, 3.2.2) of the design, procedure and recruitment strategy, which was identical to that of study one. It should be noted that the sample collected in the present study was a subset of the dataset for study two, drawn prior to data cleaning.

5.2.2 Participants

Inclusion criteria for participants followed information described in chapter three (section 3.2.3); however, participants additionally had to be in a current sexual or committed relationship. A total of 1816 people signified their interest in participating in the study by clicking on the link and answering the pre-screening questions about age and country of residence. Of these, 1000 were excluded for (a) not meeting study criteria ($n = 595$); (b) not completing the survey ($n=405$). Transgendered participants ($n=1$), or those who indicated that they viewed pornography predominantly in a group or with friends ($n=3$), were also excluded for statistical reasons. Accordingly, 812 participants ($n= 686$ pornography users, $n=126$ non-users) were included in the study ($n=41$ recruited via undergraduate psychology course), of whom 50.7% were female and 49.3% were male. Participants ranged in age from 18 to 74 ($M=30.10$, $SD=11.19$) and had an average of 16.31 years ($SD=3.17$) of education. The demographic characteristics of the final sample are presented in Table 5.1.

Table 5.1

Demographic Characteristics of the Sample

		Females (n=412)		Males (n=400)		χ^2
		N	%	N	%	
<i>Religiosity:</i>	Non-religious	344	83.5	336	84.0	.04
	Religious	68	16.5	64	16.0	
<i>Ethnicity^a:</i>	Anglo-Australian	255	61.9	269	67.3	9.07
	Aboriginal, Torres Strait or Sth. Sea Islander	4	1.0	2	0.5	
	Pacific Islander	3	0.7	0	0.0	
	European	49	11.9	49	12.3	
	Nth African or Middle Eastern	4	1.0	4	1.0	
	Asian	50	12.1	32	8.0	
	Latin American	3	0.7	3	0.8	
	Mixed	29	7.0	26	6.5	
<i>Identified Sexuality^b:</i>	Heterosexual	303	73.5	312	78.0	4.72
	Homosexual	11	2.7	50	12.5	*
	Bisexual	74	18.0	33	8.3	
	Other ("queer", "pansexual", "unsure")	24	5.8	5	1.3	
<i>Relationship Stage^c:</i>	Just Beginning	18	4.8	19	5.2	2.08
	Moderately Developed	34	9.0	41	11.3	
	Highly/Well Developed	313	82.8	287	78.9	
	Ending	13	3.4	17	4.7	

* Chi-Square for gender significant at the $p < .001$

^a Missing data for 15 participants for males and 15 participants for females.

^b Anglo-Australian includes participants of Australian, New Zealand, British, North American or Canadian background.

^c No data for 36 participants for males and 34 participants for females, as these participants only considered themselves to be in sexual, not committed relationships, and therefore did not answer questions pertaining to this (including the Miller Social Intimacy Scale).

5.2.3 Materials

The questionnaires which were administered to participants are described in detail below. For a complete overview of the survey and individual items of each questionnaire, please see Appendix F. As previously outlined in chapter 3, the survey was pilot tested to ensure that the questionnaires were clear, understandable and contained no errors.

5.2.3.1 Demographics

Please refer to chapter three (section 3.2.4.1) for an overview of the demographic questions administered.

5.2.3.2 Relationship characteristics

Participants were asked to indicate whether they were currently in a committed (romantic) or purely sexual relationship. If participants indicated that they were in a committed relationship, they were asked to indicate the duration of the relationship, whether they lived together and marital status. Relationship developmental stage, a measure associated with solidarity and an indicator of the health of the relationship, was assessed using Wheelless, Wheelless, and Baus (1984)'s scale. Participants were required to rate the stage of their relationship on a 7-step continuum (where 1= just beginning stage, 2= Moderately Developed, 3= well developed, 4= highly developed, 5= disengaging, 6= terminating and 7= final termination). Due to low numbers for some categories and for statistical purposes, the responses were then collapsed into four categories, which included just beginning, moderately developed, well or highly developed and "ending" (disengaging, terminating or final termination). This variable was then recoded into three dummy variables for statistical purposes, where "ending" was the reference group.

5.2.3.3 Pornography consumption

Details regarding pornography consumption were assessed using an abbreviated version of the Pornography Use Characteristics Questionnaire (PUCQ), which was created for the purposes of the current research. Items pertaining to frequency of internet pornography use, paraphilic genre use, age of first exposure and viewing company were included in the current study. The full measure is described in chapter 4 (section 4.2.3.2); however, a summary of the items relating to this study is given here. At the beginning of the questionnaire, participants were informed of the definition of pornography as

Any kind of material aiming at creating or enhancing sexual feelings or thoughts in the recipient and, at the same time, containing explicit exposure and/or descriptions of the genitals and clear explicit sexual acts (Hald & Malamuth, 2008; p.616).

Frequency of pornography use was assessed by asking participants to indicate how often they had deliberately accessed internet pornography on average in the past 12 months, with 11 answer categories, taken from Bridges and Morokoff (2010). Categories included never or more than 12 months ago, once in the last 12 months, once in the last six months, less than once a month, one to two times a month, three to four times a month, five to six times a month, once a day or more than once a day. Participants who indicated that they had consumed internet pornography in the last 12 months were then assessed for paraphilic pornography use utilising a question taken from Stulhofer et al. (2010), which asked participants to indicate whether they had viewed pornography containing Bondage and Discipline and/or Sadomasochism (BDSM), fetishism, bestiality or violent/coercive sexual activities in the previous 12 months. These participants were also asked whom they most frequently viewed internet pornography with (alone, with a partner, sometimes alone

or sometimes partner, in a group). For statistical purposes, this variable was recoded in the current study into a dichotomous variable (alone vs. with partner/sometimes with partner). Finally, all participants were asked the age at which they were first exposed to any kind of pornography. Please refer to chapter 4 (section 4.2.3.2) for further details about this measure.

5.2.3.4 Intimacy

Relationship Intimacy was measured by the Miller Social Intimacy Scale (Miller & Lefcourt, 1982). This scale consists of 17 items, 6 which correspond to frequency of intimate contacts within an adult relationship (10 point scale, where 1=very rarely and 10= almost always) and 11 which gauge intensity of these contacts (10 point scale, where 1=not much and 10= a great deal). Participants in the current study were asked to respond to the items according to how often, or how much, they applied to their relationship with their primary romantic partner. Total scores on this scale range from 17-170, with higher scores indicating greater intimacy. The scale has demonstrated high reliability, with high internal consistency (Cronbach's α =.86-.95) and test retest reliability (r = .96) (Downs & Hillje, 1991; Miller & Lefcourt, 1982). Miller and Lefcourt (1982) also demonstrated good construct validity for this scale. In the current study, the reliability of this scale was excellent (Cronbach's α =.93). Participants who indicated that they were only in a sexual, non-committed relationship did not complete this scale.

5.2.3.5 Sexual communication

The Sexual Communication Satisfaction Inventory (Wheless et al., 1984) was used to assess participants' satisfaction with their ability to communicate openly with their partners. This scale consists of 22 statements relating to satisfaction with sexual communication (e.g.

“I am satisfied with my partner's ability to communicate her/his sexual desires to me”), as well as openness and transparency of sexual communication (“I show my partner what pleases me during sex”). Participants are required to indicate the extent to which they agree with each statement on a 7-point Likert-type scale ranging from 1=strongly disagree to 7=strongly agree. Total scores range from 0 to 154, with higher scores indicating greater satisfaction with sexual communication. The scale has high reliability, with an internal consistency score of .94 (Montesi et al., 2013; Wheelless et al., 1984). In the current study, the reliability of this scale was excellent (Cronbach’s α =.94). Participants who indicated that they were in a non-sexual, committed relationship did not complete this scale.

5.3 Results

All analyses were separated for males and females, due to the significantly larger proportion of male internet pornography users (see Table 5.2) and the significant gender differences in the main outcome variables. Descriptive statistics and frequencies for the main outcome variables of interest can be seen in Table 5.3. The majority of participants indicated that they were currently in what they considered to be both a sexual and committed relationship, with 742 participants (91.7% of females and 91.0% of males) in a committed relationship, and 763 participants (93.2% of females and 94.8% of males) in a sexual relationship. For female participants who indicated that they were in a committed relationship, the mean duration of this relationship was 5.25 years ($SD= 6.96$); 53.7% were currently living with their partner and 20.9% were married to them. For males who were in a committed relationship, the mean duration of this relationship was 6.89 years ($SD= 8.13$); 64.0% were currently living with their partner and 31.0% were married to them. In addition, 82.8% of females 78.9% of males indicated that their relationship was in the “highly/well developed” stage. Initially, correlational analyses were carried out to investigate the basic

associations between frequency of internet pornography use and the key experimental variables. The pattern of correlations can be seen in Table 5.4.

In order to test the hypotheses, a series of hierarchical multiple regressions, with alpha set at .05, were performed for each of outcome variables of interest. Preliminary analyses were conducted to ensure there were no violations in the assumptions of linearity, normality, and homoscedasticity through examining the normal probability and residual plots. Variance Inflation Factors (VIFs) and tolerance values indicated no harmful levels of multicollinearity. VIFs in the current regression models did not exceed 5.63 and 4.20, and tolerance values were .18 and .24 or greater, for females and males, respectively.

Due to the very small proportion of males who indicated they had never used internet pornography or not used it in the past 12 months ($n=9$), frequency of internet pornography use for male data was separated into three dummy coded variables, comparing monthly, weekly or daily use to a reference group of rare use (never used or not in the last 12 months, or used less than monthly). Conversely, a greater number of female participants used internet pornography less than monthly and not at all, while a very small number used it daily or more ($n=6$). Thus, to avoid losing information, data for females was separated into three dummy coded variables, comparing less than monthly, monthly and weekly or greater users to a reference group of non-users (never used, or not in the last 12 months). The predictor variables were entered in two steps; step one comprised of demographic variables to be controlled for, including age, religiosity, ethnicity, sexual orientation and years of full time education. For the analyses examining intimacy, the relationship stage dummy variables were also entered at step one. Step two encompassed the pornography variables, including the frequency of internet pornography use dummy variables, paraphilic pornography use and age of first exposure to pornography.

In order to analyse whether viewing company played a moderating role in the relationship between pornography use and the outcome variables of interest, subsequent hierarchical regressions were conducted with internet pornography users only. Steps one and two were entered as described above, however, frequency of internet pornography use was transformed into a continuous variable (days per year), as the dummy variables were not suitable for use without non-users. Viewing company was then entered into step three of the analyses.

Table 5.2

Frequencies of Internet Pornography Use and Chi-Square Results for Gender

	Females (n=412)		Males (n=400)		χ^2	
	N	%	N	%		
<i>Paraphilic Internet Porn Use:</i>	No	179	43.4	248	62.0	28.02*
	Yes	233	56.6	152	38.0	
<i>Frequency of Internet Porn Use:</i>	vs. non-use n=117			vs. rare n= 33		324.21*
	Less than monthly	107	26.0	-	-	
	Monthly	122	29.6	61	15.3	
	Weekly (or greater for females)	66	16.1	234	58.5	
	Daily	-	-	72	18.0	
<i>Viewing Company†</i>	Alone	52.2	72.9	326	83.6	11.60*
	Together	80	27.1	64	16.4	

* Chi-Square for gender significant at the $p < .001$

Note: * $p < .05$, ** $p < .01$. Chi-square test for pornography frequency is based upon all five categories before they were collapsed differently for each gender.

† No data for 117 female and 10 male participants who were non-users, and therefore not asked this question

Table 5.3

Descriptive Statistics for the Main Outcome Variables

Variable	Females (n=412)		Males (n=400)		Cohen's <i>d</i>
	<i>M(SD)</i>	<i>Range</i>	<i>M(SD)</i>	<i>Range</i>	
Age of First Exposure to Pornography	13.86(4.59)	1-45	12.34(3.07)	3-32	.39**
Miller Social Intimacy Scale	147.38(18.95)	54-170	138.27(22.91)	40-170	.43**
Revised Sexual Communication Scale	124.99(21.25)	49-154	116.28(25.67)	27-154	.37**

Note: * $p < .05$, ** $p < .01$.

Table 5.4

Correlations Among the Main Variables of Interest

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	-	.07	-.16**	.00	.21**	.01	-.05	-.02	-.18**	.27**	-.07	.05	-.18**	-.08
2. Religiosity (0= no, 1= yes)	-.01	-	-.09	.07	.06	.04	.07	-.08	.12*	.01	.08	.01	-.04	-.06
3. Ethnicity (0= Anglo-Australian, 1= all other)	-.21**	-.04	-	-.18**	.05	-.01	.03	-.04	.01	-.02	.07	-.08	-.050	.05
4. Sexuality (0= heterosexual, 1= all other)	.04	.11*	-.09	-	.03	.07	.03	-.09	.23**	-.12*	-.11*	.04	-.06	-.04
5. Years of Education	.10*	-.01	.12*	.13*	-	-.04	.00	.05	-.07	.02	.07	.07	.07	.00
6. RS (ending, vs. just beginning)	-.07	.04	.14**	.07	.02	-	-.07	-.49**	.07	.01	.05	-.08	-.03	.04
7. RS (ending, vs. moderately developed)	-.19**	.02	.09	.08	.06	-.08	-	-.69**	.05	-.13*	-.02	-.05	-.04	-.03
8. RS (ending, vs. highly/well developed)	.17**	-.07	-.10	-.10	-.03	-.45**	-.69**	-	-.05	.03	.00	.13*	.22**	.07
9. Frequency of Internet Porn Use (continuous, days)	-.18**	.17**	.09	.20**	.00	-.04	.13*	-.14**	-	-.18**	.25**	.12*	.00	.17**
10. Age of First Exposure to Pornography (years)	.36**	-.07	-.04	.05	.07	-.01	-.06	.04	-.17**	-	.00	.02	-.09	-.02
11. Paraphilic Internet Porn Use (0= no, 1= yes)	.00	-.07	.03	-.05	.06	.00	.03	-.01	-.13*	.14**	-	-.01	-.09	-.02
12. Viewing Company (alone=0, together=1)	.01	-.06	-.06	.08	-.09	-.08	.07	.02	.01	.04	-.11*	-	.16**	.31**
13. Miller Social Intimacy Total Score	-.08	-.04	-.06	.09	-.02	.01	-.02	.24**	-.15**	-.05	.08	.11*	-	.48**
14. Sexual Communication Satisfaction Total Score	-.03	.04	.01	-.04	-.10	.06	.00	.09	-.12*	-.04	.02	.24**	.54**	-

Note: Female ($n=412$) data is represented above the diagonal and male ($n=400$) data below the diagonal. RS= relationship stage

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

5.3.1 Intimacy

The results of the overall regression analysis for intimacy are reported in Table 5.5, with the statistics from the full model. For females, the full regression model was significant, and accounted for 19.1% of the total variance in the Miller Social Intimacy Scale scores; $R^2 = .19$, adjusted $R^2 = .16$, $F(13, 315) = 5.73$, $p < .001$. Step one, comprising demographic and relationship stage variables, accounted for 18.1% of the total variance in Intimacy; $R^2 = .18$, adjusted $R^2 = .16$, $F(8, 320) = 8.83$, $p < .001$. The addition of step two containing the pornography use variables, did not result in a significant increment in prediction over and above that of step one; $F \text{ change } (5, 315) = .83$, $p = .532$. Thus, pornography use did not predict intimacy scores. For males, the full regression model was also significant, and accounted for 25.3% of the total variance in intimacy; $R^2 = .25$, adjusted $R^2 = .22$, $F(13, 336) = 8.77$, $p < .001$. Step one, comprising demographic and relationship stage variables, accounted for 22.9% of the total variance in intimacy; $R^2 = .23$, adjusted $R^2 = .21$, $F(8, 341) = 12.69$, $p < .001$. The addition of step two containing the pornography use variables, did not result in a significant increment in prediction over and above that of step one; $F \text{ change } (5, 336) = 2.15$, $p = .059$. However, daily internet pornography use was a significant predictor in the final model, whereby daily male users of internet pornography had significantly lower intimacy scores with their significant other than rare users ($\beta = -.18$, $p = .025$).

The results of the regression analysis investigating the relationship between viewing company and intimacy in pornography users only are reported in Table 5.6 for females and males. For females, the full regression model was significant accounting for 15.8% of the total variance in the Miller Social intimacy Scale scores; $R^2 = .16$, adjusted $R^2 = .11$, $F(12, 233) = 3.63$, $p < .001$. Step one, comprising demographic variables, accounted for 13.0% of the total variance in intimacy; $R^2 = .13$, adjusted $R^2 = .10$, $F(8, 237) = 4.43$, $p < .001$. The addition of

steps two and three containing the variables related to pornography use and viewing company did not result in a significant increment in prediction over and above that of step one; step two: $F\ change(3, 234) = 1.43, p = .235$; step three: $F\ change(1, 233) = 3.30, p = .071$..

For males, the full regression model was significant accounting for 26.0% of the total variance in the Miller Social intimacy Scale scores; $R^2 = .26$, adjusted $R^2 = .23$, $F(12, 327) = 9.56$, $p < .001$. Step one, comprising demographic variables, accounted for 23.6% of the total variance in intimacy; $R^2 = .24$, adjusted $R^2 = .22$, $F(8, 331) = 12.79$, $p < .001$. The addition of steps two and three containing the variables related to pornography use and viewing company did not result in a significant increment in prediction over and above that of step one; step two: $F\ change(3, 328) = 2.56, p = .055$; step three: $F\ change(1, 327) = 2.70, p = .102$.

Thus, for males and female consumers, neither frequency of internet pornography use nor viewing company predicted intimacy scores.

Table 5.5

Summary of Hierarchical Regression Analysis for Variables Predicting Intimacy with Significant Other

Variable	Step 1		Step 2	
	β		β	
	Females	Males	Females	Males
Age	-.22**	-.10*	-.22**	-.09
Religiosity	-.01	-.03	-.01	-.02
Ethnicity	-.10	-.10*	-.09	-.08
Sexual Orientation	-.05	.08	-.07	.11*
Years of Education	.13**	-.02	.13**	-.02
RS (ending, vs. just beginning)	.34**	.47**	.35**	.44**
RS (ending, vs. moderately developed)	.42**	.63**	.42**	.60**
RS (ending, vs. highly/well developed)	.63**	.89**	.63**	.84**
Less than Monthly Internet Porn Use ^a			.06	-
Monthly Internet Porn Use ^a			.06	-.04
Weekly ^b Internet Porn Use ^a			.01	-.08
Daily Internet Porn Use ^a			-	-.18*
Age of First Exposure			.01	-.05
Paraphilic Internet Porn Use			-.13	.06
	R^2			
		.18**	.23**	.19**
	R^2 change		.01	.02

Note: * $p < .05$. ** $p < .01$, RS= relationship stage.

a= when compared to non-use for female data and "rare" use for male data (dummy coded variables, see Section 5.3. for full description).

b= For females, this variable includes weekly and greater than weekly use.

Table 5.6

Summary of Hierarchical Regression Analysis for Variables Predicting Intimacy with Significant Other for Internet Pornography Users Only

Variable	Step 1		Step 2		Step 3		
	β		β		β		
	Females	Males	Females	Males	Females	Males	
Age	-.14*	-.11*	-.12	-.10	-.12	-.10	
Religiosity	-.02	-.02	-.02	-.01	-.02	-.01	
Ethnicity	-.14*	-.11*	-.14*	-.10*	-.13*	-.10	
Sexual Orientation	-.05	.08	-.09	.10*	-.09	.10	
Years of Education	.12	-.01	.12	-.01	.11	-.01	
RS (ending, vs. just beginning)	.38**	.48**	.36**	.45**	.35**	.45**	
RS (ending, vs. mod. developed)	.45**	.64**	.41**	.61**	.39**	.60**	
RS (ending, vs. highly/well developed)	.65**	.90**	.62**	.86**	.59**	.85**	
Freq of Internet PornUse			-.01	-.10	-.02	-.10	
Age of First Exposure			-.06	-.06	-.06	-.06	
Paraphilic Internet Porn Use			-.12	.07	-.12	.08	
Viewing Company					.11	.08	
	R^2						
		.13	.24**	.15	.25**	.16	.26**
	R^2 Change						
				.02	.02	.01	.01

Note: * $p < .05$. ** $p < .01$, RS= relationship stage, freq= frequency

5.3.2 Sexual communication

The results of the overall regression analysis for sexual communication satisfaction for females are reported in Table 5.7, with the statistics from the full model. The full regression model was significant for females, and accounted for 6.7% of the total variance in sexual communication satisfaction; $R^2 = .07$, adjusted $R^2 = .04$, $F(10, 319) = 2.28$, $p = .014$. Step one, comprising demographic and relationship stage variables, was not significant; $R^2 = .03$, adjusted $R^2 = .01$, $F(5, 324) = 1.71$, $p = .132$. The addition of step two containing the pornography use variables, resulted in a significant increment in prediction over and above that of step one; F change (5, 319) = 2.80, $p = .017$. Monthly, in addition to weekly or greater internet pornography use, were significant predictors in the final model, female users of internet pornography had significantly higher sexual communication satisfaction scores than non-users, and this appeared to increase in magnitude with frequency of use (monthly: $\beta = .17$, $p = .029$; weekly or greater: $\beta = .22$, $p = .002$). For males, the full regression model was not significant; $R^2 = .04$, adjusted $R^2 = .01$, $F(10, 336) = 1.48$, $p = .146$. Thus, pornography use did not appear to be associated with sexual communication satisfaction in this model.

The results of the regression analysis investigating the relationship between viewing company and sexual communication in internet pornography users only are reported in Table 5.8 for females and males. For females, the full regression model was significant accounting for 14.2% of the total variance in the sexual communication satisfaction scores; $R^2 = .14$, adjusted $R^2 = .11$, $F(9, 234) = 4.31$, $p < .001$. Step one, comprising demographic variables, was not significant; $R^2 = .03$, adjusted $R^2 = .01$, $F(5, 238) = 1.26$, $p = .280$. The addition of step two, containing the pornography use variables, resulted in a significant increment in prediction over and above that of step one; F change (3, 235) = 3.41, $p = .018$. Similarly, the third step, containing viewing company, also resulted in a large significant

increment in prediction over and above that of step two; F change (1, 234)= 20.64, $p < .001$. Frequency of internet pornography use and viewing company were significant predictors in the final model. Sexual communication satisfaction was higher for females with more frequent internet pornography use ($\beta=.17$, $p= .009$) and also when viewed in the company of their partner ($\beta=.28$, $p < .001$). For males, the full regression model was significant accounting for 9.4% of the total variance in the sexual communication satisfaction scores; $R^2 = .09$, adjusted $R^2=.07$, $F(9, 328) = 3.79$, $p < .001$. Step one, comprising demographic variables, was not significant; $R^2 = .02$, adjusted $R^2=.00$, $F(5, 332)= 1.17$, $p = .323$. The addition of step two, containing the pornography use variables, did not result in a significant increment in prediction over and above that of step one; F change (3, 329)= 2.48, $p = .061$. However, the third step, containing viewing company, did result in a large significant increment in prediction over and above that of step two; F change (1, 328)= 20.00, $p < .001$. Frequency of internet pornography use and viewing company were significant predictors in the final model. Sexual communication satisfaction was lower for males with more frequent internet pornography use ($\beta=-.13$, $p= .024$) but higher when viewed in the company of their partner ($\beta=.24$, $p < .001$).

Table 5.7

*Summary of Hierarchical Regression Analysis for Variables Predicting Sexual Communication**Satisfaction in Females*

Variable	Step 1	Step 2
	β	β
Age	-.09	-.05
Religiosity	-.05	-.06
Ethnicity	.01	.01
Sexual Orientation	-.06	-.10
Years of Education	.13*	.13*
Less than Monthly Internet Porn Use ^a		.05
Monthly Internet Porn Use ^a		.17*
Weekly or greater Internet Porn Use ^a		.22**
Age of Exposure		.02
Paraphilic Use		-.01
	R^2	
	.03	.07*
	R^2 change	.04*

Note: * $p < .05$. ** $p < .01$.

a= when compared to non-use (dummy coded variable, see Section 5.3. for full description).

Table 5.8

Summary of Hierarchical Regression Analysis for Variables Predicting Sexual Communication Satisfaction in Internet Pornography Users Only

Variable	Step 1		Step 2		Step 3		
	β		β		β		
	Females	Males	Females	Males	Females	Males	
Age	.04	-.04	.06	-.04	.05	-.04	
Religiosity	-.14*	.03	-.13	.03	-.10	.05	
Ethnicity	-.04	.00	-.05	.01	-.02	.02	
Sexual Orientation	-.04	-.09	-.09	-.07	-.09	-.10	
Years of Education	.07	-.07	.10	-.07	.08	-.04	
Freq of Internet Porn Use			.17*	-.15**	.17**	-.13*	
Age of First Exposure			-.10	-.06	-.10	-.08	
Paraphilic Internet Porn Use			-.01	-.02	-.02	.02	
Viewing Company					.28**	.24**	
	R^2	.03	.02	.07*	.04	.14**	.09**
	R^2 change			.04*	.02	.08**	.06**

Note: * $p < .05$. ** $p < .01$, freq= frequency.

5.4 Discussion

In the current study, an exploration of the association between pornography consumption, relational intimacy and sexual communication was undertaken. Daily internet pornography use was associated with lower levels of intimacy with romantic partners in males but not females, when compared to non-use. This is in line with Stulhofer et al. (2010), who found that poorer relationship intimacy was associated with early exposure to

pornography in consumers of paraphilic pornography. It may be that the demonstrated association between highly frequent internet pornography use and lower intimacy reflects poor relationship satisfaction or conflict, as there is evidence to suggest that males experiencing loneliness or sexual frustration may be drawn to pornography (Groves et al., 2011; Yoder et al., 2005). Accordingly, pornography may actually be an attempt to seek intimacy, connection and closeness online, where it is unavailable or inadequate offline. Popovic (2011) found that pornography users had a greater number of significant relationships, and were closer to significant others, than non-users. As such, the authors suggested that pornography users might have a greater craving for emotional intimacy than non-users, utilising pornography to fulfil these increased needs. Alternatively, it is possible that the highly frequent male consumers in the current study were experiencing relationship difficulties secondary to pornography use, or that a bidirectional relationship was present. Pornography use may have created or exacerbated problems with intimacy and openness in these highly frequent consumers, particularly if their partners disapproved or were unaware of their pornography use (Hardy, 1998). Further, this behaviour may have impacted on availability to spend time or engage with partners if it was viewed alone, considering that it was a daily (or greater) occurrence (Groves et al., 2011; Pyle & Bridges, 2012). This is in line with previous qualitative research illuminating relational difficulties, instability, distress and feelings of rejection or betrayal in the partners of those who heavily use pornography (Bergner & Bridges, 2002; Groves et al., 2011). Nonetheless, in the current study, it is important to highlight that lower intimacy levels were not demonstrated for female internet pornography users, or in males with light to moderate internet pornography consumption. Furthermore, the results did not indicate any differences in intimacy levels for males or females if internet pornography was viewed with or without a partner. This contrasts with

the findings of Maddox, Rhoades, and Markman (2011), who demonstrated that couples who only viewed internet pornography together reported more dedication to one another than those who viewed it alone, or both alone and together. Nonetheless, these findings suggest that for the majority of consumers, there does not appear to be a detrimental impact of internet pornography use on closeness and intimacy in couples. Longitudinal research, incorporating factors associated with relationship satisfaction and distress, in addition to a more detailed understanding of the motivations for mutual consumption and its potential benefits, may provide further clarification on the link between pornography use and intimacy in couples.

The link between pornography use and enhanced sexual communication was also examined in the current study. In line with predictions, compared to non-users, greater sexual communication satisfaction was reported by females who consumed internet pornography monthly or weekly; however, no association was present for males. For female consumers, higher sexual communication satisfaction was associated with a greater frequency of internet pornography use, especially when it was used in the company of their partner. Contrary to the hypothesised direction, male consumers' frequency of internet pornography use was actually associated with lower sexual communication satisfaction. However, this association differed depending on viewing company: when internet pornography was viewed with a partner, male consumers reported higher sexual communication satisfaction. Overall, these findings are supported by previous correlational research and reports from consumers of self-perceived benefits, which have demonstrated a link between joint pornography use and enhanced sexual communication between partners (Albright, 2008; Daneback et al., 2009; Grov et al., 2011). The current findings are in line with the idea that couples who view pornography, particularly those who view it together, may

have a more permissive erotic climate (Groves et al., 2011). Potentially, viewing pornography together may assist in reducing discomfort around discussion of sexual issues or desires; normalising fantasies or novel sexual activities (Groves et al., 2011; Weinberg et al., 2010). It is also possible that greater pornography use and sexual communication may be related to a common factor, such as personality traits like erotophilia, or sexually permissive attitudes (Fisher & Barak, 2001). Accordingly, individual members of a couple may possess more positive feelings and acceptance towards sex, enabling more assertive and effective sexual communication and increasing the likelihood that they may enjoy engaging in sexual activities such as viewing pornography (Fisher & Barak, 2001; Groves et al., 2011).

The unexpected finding in males that more frequent internet pornography use was associated with lower sexual communication satisfaction, which deviated from the pattern observed in females, may be explained by partner related factors. Previous research has found that males are more easily able to talk to their partner about their sexual needs and desires when their partner knows about their pornography use (Daneback et al., 2009). However, feelings of betrayal, mistrust, distress and rejection in response to their partner's use of pornography have also been reported by women (Bergner & Bridges, 2002; Groves et al., 2011). Accordingly, in the current study, the partners of solitary male consumers may have been unaware of their pornography use or found it unacceptable or distressing, potentially impeding effective sexual communication, particularly if it pertained to desires or fantasies inspired by pornographic content. As sexual communication is integral to sexual and relationship satisfaction (Cupach & Comstock, 1990), pre-existing sexual or relationship problems may also have increased pornography consumption, and the likelihood of it being viewed alone, which in turn could have exacerbated these issues. Gender differences in motivations and use of pornography may explain why the opposite relationship was

observed for females; for example, it has been robustly demonstrated that the frequency and intensity of pornography use is much lower in females than males, and that they are more likely to consume pornography in the presence of their partner (Bridges & Morokoff, 2010; Döring, 2009; Paul & Shim, 2008; Peter & Valkenburg, 2011b; Poulsen et al., 2012). Accordingly, it is possible that women's pornography use in the current study may have been linked to greater sexual communication because it represents an acceptance of men's pornography use (where the couple was heterosexual) and again, may contribute to a more permissive erotic climate within the relationship (Groß et al., 2011).

The study had some limitations. Firstly, while all attempts were made to obtain a representative community sample, it is likely that the sample was skewed to be sexually permissive, due to self-selection bias (Wiederman, 1999). In addition, relying on self-report in the current study may also have biased the results. Ratings were not obtained for the participants' partners, and particularly for intimacy, it is possible that self-perceptions may not accurately reflect the partners' experience. Furthermore, motivations for internet pornography use were not assessed in the current study, and this may have shed further light on links with intimacy and sexual communication. Finally, the effect sizes for the relationships observed in this study were small; suggesting that regardless of the direction of effect, the clinical implications and real-world impacts may be minimal, and caution is urged in interpreting the results. The following chapter summarises the research outlined in this thesis and discusses the empirical, theoretical and clinical implications.

Chapter 6: General Discussion

6.1 Aims

In the present research, internet pornography consumption was investigated through a series of online surveys conducted with Australian adults. After performing a systematic review of the literature on the link between sexual risk behaviour and pornography use, further clarification of this relationship was sought in study one. The aim of study two was to examine the relationship between internet pornography use and sexual scripts and attitudes, in addition to engagement in sexual activities. Accordingly, a model of how internet pornography may act as a form of sexual inspiration, and how this may impact upon sexual boredom, was tested. An additional aim of this study was to examine how sexual scripts regarding body shape and size may be influenced, through investigating the association between internet pornography consumption and body image. Finally, the aim of study three was to examine how people in relationships may utilise internet pornography, and whether this practice has links with sexual communication and intimacy.

6.2. Summary of the Main Findings

In study one, current internet pornography use was not found to be associated with sexual risk behaviours or attitudes, including condom attitudes, intention to use a condom, incidence of unsafe sex, STI history or number of sexual partners. While internet pornography use was associated with higher sexual sensation seeking in both males and females, and sexual compulsivity in females only, the greater disposition towards these traits in internet pornography users did not appear to translate into actual sexual risk behaviour, and potentially represented personality types more likely to seek out sexually explicit material.

In study two, the hypothesised sexual inspiration model of internet pornography consumption received partial support. The results indicated that internet pornography use (including paraphilic use) is associated with more accepting attitudes towards, and more frequent engagement in, a broad range of sexual activities. A link between higher sexual boredom and internet pornography use, operating through greater appeal and practice of sexual behaviour, was also established. Nonetheless, due to the lack of mediation by sexual scripts on the association between internet pornography use and sexual attitudes, support for the model was somewhat reduced. In addition, only a small minority of participants believed that the self-perceived impact of pornography on their sexual attitudes and behaviours was negative, with the average self-perceived effects of pornography being reported as positive. Finally, no association between internet pornography use and poorer genital or body image satisfaction was observed in the present study.

In study three, males who were highly frequent consumers of internet pornography reported lower levels of intimacy than rare or non-users; however, this finding was not replicated for males with less than daily use, or for females. Compared to non-users, greater sexual communication satisfaction was reported by female internet pornography consumers, and this was particularly so when pornography was viewed together with their partner. The findings for male consumers were contrary to predictions, as using internet pornography more frequently was actually associated with lower sexual communication satisfaction; however, the reverse was true when pornography was viewed mutually with a partner. As with study one and two, these findings only accounted for a small amount of the variance.

6.3 Emerging Patterns

Accordingly, the overall pattern emerging from the current research indicates that, at best, pornography may only play a minor role in the sexual scripts and practices of

consumers. Pornography has been portrayed in popular media and some academic literature as a malignant source of sexual attitudes, desires and behaviours (Fisher & Barak, 2001; Štulhofer et al., 2008; Weinberg et al., 2010), with some perspectives asserting that pornography undermines social ethics and contributes to the decline of traditional family values (McNair, 2014). Further, some anti-pornography feminist perspectives suggest that it creates and perpetuates gender inequality and patriarchy, promoting a sexist ideology, misogynistic attitudes and rape culture (e.g. Boyle, 2011; Dines, 2010; Dines et al., 1997; Dworkin & Heiferman, 1981; MacKinnon, 1989). Accordingly, until recently, psychological research into pornography has focused upon the social harms of consumption (Štulhofer et al., 2010). In particular, energy has been devoted to attempting to demonstrate the influence of pornography use upon sexist attitudes, sexual aggression, sexual callousness, degradation of women and detriments to social order including rape and sexual offences; however, a causal link has not yet been demonstrated (for reviews of the literature see Diamond, 2009; McNair, 2014). Accordingly, the need for a paradigm shift in pornography research (Attwood, 2002; McNair, 2014; Zillmann, 2000) was an impetus for the current research, and there are a number of perspectives that veer away from the traditional social harms approach through which the current findings may be viewed.

6.3.1 Common antecedents to pornography use

Common to all findings in the current research may be the issue of antecedents to pornography use, where individuals who are more likely to view pornography are also predisposed to other factors that contribute to particular patterns of sexual attitudes and behaviour. For example, it is well established that consumers of pornography are more likely to be male, homosexual or bisexual, young adult, non-religious, single, sensation seeking and highly educated (Brown & L'Engle, 2009; Döring, 2009; Perry et al., 2007; Peter &

Valkenburg, 2011b). Across all three studies, it may be that individual differences in underlying traits or tendencies are able to explain the links between pornography use and the variables of interest observed in the current research.

The likelihood of consuming pornography may be tied into the pre-existing intrapsychic sexual scripts of particular individuals. Pornography use may be an outcome of an erotophilic predisposition. This is consistent with study two, where consumers were more likely to seek greater sexual stimulation, have broader sexual scripts, more accepting and liberal attitudes towards sex and engage in more sexual activity (Emmers-Sommer et al., 2013; Fisher et al., 1988; Weinberg et al., 2010). Thus, individuals may be active and conscious consumers who seek out pornography which is in line with their own non-conservative or broader sexual scripts, as proposed by Weinberg et al. (2010), the uses and gratifications theory (Ruggiero, 2000) and sexual involvement theory (Mosher, 1980). Equally, pre-existing interpersonal scripts may play a role in pornography use in couples (Daneback et al., 2009). In study three, individual members of couples who viewed internet pornography together were more likely to report enhanced sexual communication. Certainly, pornography may play a role in opening up discussion about sexuality between partners. However, it is also possible that the types of couples who enjoy consuming pornography together, and are able to communicate this as a desire, have a permissive erotic climate accompanied by sexual scripts that give rise to more open and liberal attitudes towards sex (Daneback et al., 2009). Similarly, individuals who consume pornography separately may struggle to raise this activity with their partner, in addition to communicating other sexual needs or issues, and this may be the result of less permissive sexual scripts or predispositions in one or both members of the couple (Daneback et al., 2009). Accordingly, it may be that previous research has undervalued the function of underlying traits, pre-existing

attitudes and formative sexual scripts in driving pornography consumption and simultaneously, the common correlates of this sexual pastime.

6.3.2 Gender differences and libertarian feminist perspectives

While evidence suggests that males commonly consume pornography more frequently and for longer periods of time than women (Döring, 2009; Paul & Shim, 2008), a number of other noteworthy gender differences emerged in the current research. Overall, it appeared that for those who used porn, there were more positive associations with pornography use for females than males. For example, in study one, internet pornography use was associated with positive attitudes and reduced embarrassment about buying condoms. In study three, enhanced sexual communication was associated with consuming internet pornography for females, both alone and with their partner; whereas for males, this was lower if they viewed pornography alone, and higher only if consumed mutually. These findings may be viewed in the context of a libertarian feminist perspective (Ferguson, 1984), which asserts that pornography promotes female sexuality, and therefore has the capacity to be empowering and liberating for women (Arakawa et al., 2012; Diamond, 2009; Strossen, 2000). Thus, it may change social norms and perceptions, encouraging a divergence from the traditional sexual script, which conceptualizes sex as oriented to male pleasure, where males are highly-motivated sexual pursuers, with greater sexual needs than females, and sexual experience is perceived positively (Byers, 1996; Wiederman, 2005). Conversely, females are traditionally conceptualized as having few sexual needs, being sexually reluctant, unassertive and unmotivated to engage in sex; female promiscuity and sexual openness is therefore viewed as undesirable and likely to threaten worth, status and reputation (Byers, 1996; Wiederman, 2005). Accordingly, the current findings may reflect the idea that pornography has the power to normalize sexuality, promote female pleasure and open up a dialogue

about sex. This may be similar to other popular culture in media which promotes sexual freedom, discussion and empowerment in women, such as programs like *Sex and the City* (Gerhard, 2005). The enhanced sexual communication and positive condom attitudes observed in female consumers may represent women's sense of reduced social oppression and greater opportunity to assert their sexual needs, including sexual preferences, satisfaction and use of contraception. In particular, the variety of actresses portrayed in internet pornography may also serve to normalize female sexuality and increase acceptance, moving away from sexual conservatism and misconceptions about the nature of women who engage in sexual activities (Diamond, 2009). This approach may explain why some of the same findings were not observed for males in the current research; potentially, pornography may reduce the gap in gender roles and perceptions around sexual freedom. Thus, in an evolving world, pornography may encourage and open up the opportunity for a female sexual culture closer to that of males, where there is reduced stigma around female pleasure, overt sexuality and sexual assertiveness.

Nonetheless, it is important to note that traditional sexual scripts are not uniformly held. The fluid and dimensional nature of gender and the range of identities within the broad umbrella transgender label may result in less uptake of traditional gender roles and sexual scripts (Monro, 2005). Similarly, non-heterosexual participants have also been found to be less governed by traditional sexual scripts (Gordon, 2002; Weinberg et al., 2010). Thus, it is possible that for some participants, pornography use may have interacted with sexual scripts in a differential manner; although, it is difficult to further delineate this issue in aggregate data.

6.4 Clinical Implications

While it is important to consider the limited nature of many of the associations found in the current research, a number of clinical implications may still be applicable. The findings may contribute to informing programs to build 'porn literacy', assisting consumers to effectively navigate pornography (Albury, 2014). For example, while the data was correlational and cannot infer causation, internet pornography use was linked to higher sexual boredom, suggesting that perhaps pornography may modify sexual scripts to change sexual expectations and subsequent satisfaction. While this conclusion may be extreme, it gives rise to the potential for education around pornography use and the nature of sexuality, which, if implemented, may be beneficial regardless of the legitimacy of this link. Critical analysis of sexual media may be promoted through sex education programs, humorous videos, or instructional games (Albury, 2014). These interventions may assist consumers to identify and critically interpret pornography in order to distinguish elements of fantasy versus more common aspects of sex, assisting to inoculate viewers against any potential distortion to sexual scripts and subsequent impact upon sexual satisfaction. Accordingly, encouraging and opening up discussion around the manner in which particular genres of pornography portray sex, and how this fits into broader sexual and social culture, may enable development of critical thinking skills which assist navigation and best-practice use of pornography. In addition, the results of the current study contribute to a growing body of literature (e.g. Grov et al., 2011; Hald & Malamuth, 2008; Hald, Smolenski, et al., 2013; Lofgren-Martenson & Mansson, 2010; Mattebo et al., 2012; Tyden & Rogala, 2004) indicating that pornography may act to broaden sexual scripts through normalizing and inspiring new sexual activities. Accordingly, in combination with porn literacy programs,

pornography could also be utilised in adults as a means to promote sexual learning, knowledge and self-efficacy (Albury, 2014).

The current research may also have significance for both recreational and clinical pornography use within couples. Although the causal direction is unclear, the findings suggest that couples may benefit from enhanced sexual communication if pornography is consumed mutually. Potentially, couples may benefit from discussions around their opinions, motivations and desires regarding pornography consumption, and how this may relate to their sexuality and intimacy with their partner. An open dialogue around pornography use may also lead to greater communication around sex in general and strengthen relationship bonds. This may be particularly relevant given that honesty around pornography use is associated with reduced partner distress and relationship dissatisfaction (Resch & Alderson, 2013).

6.5 Strengths, Limitations & Future Research

The current research possessed a number of strengths contributing to its merit. All three surveys were conducted in Australia, with community samples, building upon the limited research that has previously been conducted with this population. Each of the studies also benefitted methodologically and statistically from the presence of a substantial comparison group of non-pornography users. Furthermore, a broad age range of consumers was captured, lending variance to the data where previous studies have predominantly examined young adults, particularly college populations. In addition, a well-accepted definition of pornography was utilised, an element which is commonly missing from many pornography studies (Short et al., 2012). The research examined the behaviour of pornography consumption through employing a number of measures (paraphilic use, frequency of use, age of exposure) and distinguishing internet pornography from other

offline sexual media, in order to more adequately capture the relationships. Previous studies (e.g. Wright, 2013; Wright et al., 2013) have sometimes used only one measure of pornography, such as a dichotomous yes/no variable, which classifies all pornography use as one category, despite it being a practice which is varied and idiosyncratic. Similarly, there were varied levels of pornography use (frequency, time spent, type of genres) amongst participants in the current study, allowing a broad perspective, and not focusing on heavy or compulsive users as previous research has done. Finally, a number of known demographic antecedents to pornography consumption were also statistically controlled, for example, by analysing males and females separately.

As previously discussed, the current research also possessed a number of limitations, some of which are inherent to the nature of sexuality research. Most apparent was the cross-sectional nature of the surveys, which prevented any causal directions from being established. This is a difficult issue to navigate with sexuality, and in particular, pornography research. A small number of studies have attempted to address this through conducting experimental studies (e.g. Lambert et al., 2012; Zillmann & Bryant, 1986, 1988); however, these designs also have drawbacks, being limited in ecological validity and potentially subject to demand characteristics. Given that the interaction between pornography use and aspects of sexuality may be bidirectional, it may be extremely difficult to isolate one effect from another. Nonetheless, while experimental design in this area may be practically and ethically difficult to conduct, if accomplished, it would assist in strengthening the knowledge base and allow for more distinct clinical implications. For example, experimental evidence may clarify whether pornography does indeed impact intimacy, thus providing more distinct therapeutic implications when pornography use is a presenting clinical issue, or, elucidate whether mutual consumption does actually enhance sexual communication in couples, as

opposed to this effect being related to underlying predispositions and relationship factors. Additionally, as is standard practice within the literature (e.g. Braun-Courville & Rojas, 2009; Carroll et al., 2008; Morgan, 2011; Weinberg et al., 2010; Wright, 2012a) gender was operationalised as a binary construct in the current research. Considering the fluid nature of gender, it may have been beneficial to include further questions about this variable. Nonetheless, efforts were made to accommodate for this issue by including a “transgender” category. Finally, as previously outlined, it is likely that the samples employed in the current research may have been biased, due to recruitment and participant self-selection (Wiederman, 1999). An attempt was made to counteract this with the inclusion of a control group of non-users, however, this does not exclude the possibility that these individuals were similarly predisposed, or that they had a particular agenda for participating.

6.6 Conclusion

This thesis has presented a number of perspectives from which pornography use can be understood and interpreted. Importantly, the current research suggests that there may be both positive and negative aspects associated with viewing pornography. While there appears to be both negative and positive aspects associated with consumption; pornography is just one of many factors which may contribute to, or become part of, an individual’s sexuality. The results support the trend of sexuality and pornography research moving towards a more comprehensive and balanced approach, where pornography may be viewed as an element of sexual inspiration and a genre, which enhances the transparency of sex. While there are many perspectives through which pornography consumption and its correlates may be understood, the findings to date suggest that this may be a highly complex issue. Thus, the current research highlights the need for greater insight into other

factors, such as broader social and cultural issues, regarding how sexual scripts are formed, modified and enacted, and the resultant implications for sexual health and wellbeing.

References

- Albarracín, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*, *127*(1), 142-161. doi: 10.1037/0033-2909.127.1.142
- Albright, J. M. (2008). Sex in America Online: An Exploration of Sex, Marital Status, and Sexual Identity in Internet Sex Seeking and Its Impacts. *Journal of Sex Research*, *45*(2), 175-186. doi: 10.1080/00224490801987481
- Albury, K. (2014). Porn and sex education, porn as sex education. *Porn Studies*, *1*(1-2), 172-181. doi: 10.1080/23268743.2013.863654
- Arakawa, D. R., Flanders, C., & Hatfield, E. (2012). Are variations in gender equality evident in pornography? A cross-cultural study. *International Journal of Intercultural Relations*, *36*(2), 279-285. doi: <http://dx.doi.org/10.1016/j.ijintrel.2011.08.006>
- Attwood, F. (2002). Reading porn: The paradigm shift in pornography research. *Sexualities*, *5*(1), 91-105.
- Attwood, F. (2007). No Money Shot? Commerce, Pornography and New Sex Taste Cultures. *Sexualities*, *10*(4), 441-456. doi: 10.1177/1363460707080982
- Australian National Council on AIDS Hepatitis C and Related Diseases. (2001). Guidelines for the Management and Post Exposure Prophylaxis of Individuals Who Sustain Nonoccupational Exposure to HIV. *The ANCHARD Bulletin*, *28*.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*: Prentice-Hall, Inc.
- Bardo, M. T., Donohew, R. L., & Harrington, N. G. (1996). Psychobiology of novelty seeking and drug seeking behavior. *Behavioural Brain Research*, *77*(1-2), 23-43.
- Baumeister, R. F., & Twenge, J. M. (2002). Cultural suppression of female sexuality. *Review of General Psychology*, *6*(2), 166.

- Beauducel, A., & Wittmann, W. W. (2005). Simulation study on fit indexes in CFA based on data with slightly distorted simple structure. *Structural Equation Modeling, 12*(1), 41-75.
- Beckman, L. J., & Harvey, S. M. (1996). Factors Affecting the Consistent Use of Barrier Methods of Contraception. *Obstetrics & Gynecology, 88*(3), 65S-71S.
- Belsley, D. A. (2004). Weak Data *Encyclopedia of Statistical Sciences*: John Wiley & Sons, Inc.
- Bergner, R. M., & Bridges, A. J. (2002). The Significance of Heavy Pornography Involvement for Romantic Partners: Research and Clinical Implications. *Journal of Sex & Marital Therapy, 28*(3), 193-206. doi: 10.1080/009262302760328235
- Boies, S. C. (2002). University students' uses of and reactions to online sexual information and entertainment: Links to online and offline sexual behaviour. *Journal article by Sylvain C. Boies; The Canadian Journal of Human Sexuality, 11*(2), 77-77.
- Boyle, K. (2011). Producing abuse: Selling the harms of pornography. 6. Retrieved Andrews, Brittany. (2010, August 2). Career profiles: Sex workers, Brittany Andrews. Time Out New York. Available at Accessed 3 February 2010, 34
- Braun-Courville, D. K., & Rojas, M. (2009). Exposure to Sexually Explicit Web Sites and Adolescent Sexual Attitudes and Behaviors. *Journal of Adolescent Health, 45*(2), 156-162. doi: 10.1016/j.jadohealth.2008.12.004
- Bridges, A. J., & Morokoff, P. J. (2010). Sexual media use and relational satisfaction in heterosexual couples. *Personal Relationships, 2005*, no-no.
- Brosius, H.-B., Weaver, J. B., & Staab, J. F. (1993). Exploring the social and sexual "reality" of contemporary pornography. *The Journal of Sex Research, 30*(2), 161-170. doi: 10.1080/00224499309551697
- Brown, D., & Bryant, J. (1989). The manifest content of pornography. *Pornography: Research advances and policy considerations, 3-24*.
- Brown, J. D., & L'Engle, K. L. (2009). X-Rated : Sexual Attitudes and Behaviors Associated With U.S. Early Adolescents' Exposure to Sexually Explicit Media. *Communication Research, 36*.

- Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research, 21*(2), 230-258.
- Buunk, A. P., & Gibbons, F. X. (2007). Social comparison: The end of a theory and the emergence of a field. *Organizational Behavior and Human Decision Processes, 102*(1), 3-21.
- Byers, E. S. (1996). How well does the traditional sexual script explain sexual coercion? Review of a program of research. *Journal of psychology & human sexuality, 8*(1-2), 7-25.
- Byers, L. J., Menzies, K. S., & O'Grady, W. L. (2004). The Impact Of Computer Variables On The Viewing And Sending Of Sexually Explicit Material On The Internet: Testing Cooper's "Triple-A Engine". *The Canadian Journal of Human Sexuality, 13*(3/4), 157-169.
- Byrne, D. (1976). Social Psychology and the Study of Sexual Behavior. *Personality and Social Psychology Bulletin, 3*(1), 3-30. doi: 10.1177/014616727600300102
- Carroll, J. S., Padilla-Walker, L. M., Nelson, L. J., Olson, C. D., McNamara Barry, C., & Madsen, S. D. (2008). Generation XXX: Pornography Acceptance and Use Among Emerging Adults. *Journal of Adolescent Research, 23*(1), 6-30.
- Coleman, E. (1991). Compulsive Sexual Behavior. *Journal of psychology & human sexuality, 4*(2), 37-52. doi: 10.1300/J056v04n02_04
- Conley, T. D., & Collins, B. E. (2005). Differences Between Condom Users and Condom Nonusers in Their Multidimensional Condom Attitudes. *Journal of Applied Social Psychology, 35*(3), 603-620.
- Cooper, A. (1998). Sexuality and the Internet: Surfing into the new millennium. *CyberPsychology & Behavior, 1*(2), 187-193.
- Cowan, G., Lee, C., Levy, D., & Snyder, D. (1988). Dominance and inequality in X-rated videocassettes. *Psychology of Women Quarterly, 12*(3), 299-311.
- Cupach, W. R., & Comstock, J. (1990). Satisfaction with Sexual Communication in Marriage: Links to Sexual Satisfaction and Dyadic Adjustment. *Journal of Social and Personal Relationships, 7*(2), 179-186.

- Daneback, K., Træen, B., & Månsson, S.-A. (2009). Use of Pornography in a Random Sample of Norwegian Heterosexual Couples. *Archives of Sexual Behavior, 38*(5), 746-753. doi: 10.1007/s10508-008-9314-4
- Diamond, M. (2009). Pornography, public acceptance and sex related crime: A review. *International Journal of Law and Psychiatry, 32*(5), 304-314.
- Dines, G. (2010). *Pornland: How porn has hijacked our sexuality*: Beacon Press.
- Dines, G., Jensen, B., & Russo, A. (1997). *Pornography: The production and consumption of inequality*: Routledge.
- Dodge, B., Reece, M., Cole, S. L., & Sandfort, T. G. M. (2004). Sexual compulsivity among heterosexual college students. *The Journal of Sex Research, 41*(4), 343-350. doi: 10.1080/00224490409552241
- Döring, N. M. (2009). The Internet's impact on sexuality: A critical review of 15years of research. *Computers in Human Behavior, 25*(5), 1089-1101.
- Downs, A. C., & Hillje, E. S. (1991). Reassessment of the Miller Social Intimacy Scale: Use with mixed- and same-sex dyads produces multidimensional structures. *Psychological Reports, 69*(3), 991-997.
- Downs, S. H., & Black, N. (1998). The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. *Journal of Epidemiology and Community Health, 52*(6), 377-384.
- Duggan, S. J., & McCreary, D. R. (2004). Body Image, Eating Disorders, and the Drive for Muscularity in Gay and Heterosexual Men. *Journal of Homosexuality, 47*(3-4), 45-58. doi: 10.1300/J082v47n03_03
- Dworkin, A., & Heiferman, M. (1981). *Pornography: Men possessing women* (Vol. 1): Women's Press London.

- Eaton, L. A., Cain, D. N., Pope, H., Garcia, J., & Cherry, C. (2012). The relationship between pornography use and sexual behaviours among at-risk HIV-negative men who have sex with men. *Sexual health, 9*(2), 166-170. doi: 10.1071/sh10092
- Emmers-Sommer, T., Hertlein, K., & Kennedy, A. (2013). Pornography Use and Attitudes: An Examination of Relational and Sexual Openness Variables Between and Within Gender. *Marriage & Family Review, 49*(4), 349-365. doi: 10.1080/01494929.2012.762449
- Ferguson, A. (1984). Sex war: The debate between radical and libertarian feminists. *Signs, 10*6-112.
- Ferro, M. A., & Speechley, K. N. (2009). Depressive symptoms among mothers of children with epilepsy: a review of prevalence, associated factors, and impact on children. *Epilepsia, 50*(11), 2344-2354.
- Festinger, L. (1954). A theory of social comparison processes. *Human relations, 7*(2), 117-140.
- Fisher, W. A., & Barak, A. (2001). Internet pornography: A social psychological perspective on internet sexuality. *Journal of Sex Research, 38*(4), 312-323.
- Fisher, W. A., Byrne, D., & Kelley, K. (1986). A psychological approach to human sexuality: The sexual behavior sequence. *Alternative approaches to the study of sexual behavior, 131-171*.
- Fisher, W. A., White, L. A., Byrne, D., & Kelley, K. (1988). Erotophobia-erotophilia as a dimension of personality. *Journal of Sex Research, 25*(1), 123-151.
- Fitzpatrick, M. (2007). Brazilian bikini wax and the designer vagina. *British Journal of General Practice, 57*(545), 1005-1005.
- Frith, H., & Kitzinger, C. (2001). Reformulating Sexual Script Theory: Developing a Discursive Psychology of Sexual Negotiation. *Theory & Psychology, 11*(2), 209-232. doi: 10.1177/0959354301112004
- Gagnon, J. H., & Simon, W. (1973). Sexual conduct: The social origins of human sexuality: Chicago: Aldine.
- Gerhard, J. (2005). Sex and the City. *Feminist Media Studies, 5*(1), 37-49. doi: 10.1080/14680770500058173

- Gold, R. S., & Skinner, M. J. (1992). Situational Factors and Thought Processes Associated with Unprotected Intercourse in Young Gay Men. *Aids*, *6*(9), 1021-1030. doi: 10.1097/00002030-199209000-00017
- Gordon, L. (2002). Lesbians' resistance to culturally defined attractiveness. *Deviance: The interactionist perspective*, 310-315.
- Green, S. T. (2004). HIV and AIDS, the internet pornography. *International journal of STD & AIDS*, *15*, 206-208.
- Groesz, L. M., Levine, M. P., & Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, *31*(1), 1-16. doi: 10.1002/eat.10005
- Grov, C., Gillespie, B. J., Royce, T., & Lever, J. (2011). Perceived consequences of casual online sexual activities on heterosexual relationships: a u.s. Online survey. *Archives of Sexual Behavior*, *40*(2), 429-439.
- 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. *Journal Information*, *99*(S1).
- Gullette, D. L., & Lyons, M. A. (2005). Sexual sensation seeking, compulsivity, and HIV risk behaviors in college students. *Journal of Community Health Nursing*, *22*(1), 47-60.
- Gunther, A. C. (1995). Overrating the X-Rating: The Third-Person Perception and Support for Censorship of Pornography. *Journal of Communication*, *45*(1), 27-38. doi: 10.1111/j.1460-2466.1995.tb00712.x
- Haggstrom-Nordin, E., Hanson, U., & Tyden, T. (2005). Associations between pornography consumption and sexual practices among adolescents in Sweden. *International journal of STD & AIDS*, *16*(2), 102-107.
- Hald, G. M., Kuyper, L., Adam, P. C. G., & de Wit, J. B. F. (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. *The journal of sexual medicine*, 10(12), 2986-2995. doi: 10.1111/jsm.12157
- Hald, G. M., & Malamuth, N. M. (2008). Self-perceived effects of pornography consumption. *Archives of Sexual Behavior*, 37(4), 614-625.
- Hald, G. M., Smolenski, D., & Rosser, B. R. S. (2013). Perceived Effects of Sexually Explicit Media among Men Who Have Sex with Men and Psychometric Properties of the Pornography Consumption Effects Scale (PCES). *The journal of sexual medicine*, 10(3), 757-767. doi: 10.1111/j.1743-6109.2012.02988.x
- Hardy, S. (1998). *The Reader, the Author, His Woman, and Her Lover: Soft-core Pornography and Heterosexual Men*: Cassell London.
- He, N., Detels, R., Chen, Z., Jiang, Q. W., Zhu, J. D., Dai, Y. Q., . . . Gui, D. X. (2006). Sexual behavior among employed male rural migrants in Shanghai, China. *Aids Education and Prevention*, 18(2), 176-186. doi: 10.1521/aeap.2006.18.2.176
- Helweg-Larsen, M., & Collins, B. E. (1994). The UCLA Multidimensional Condom Attitudes Scale: documenting the complex determinants of condom use in college students. *Health psychology : official journal of the Division of Health Psychology, American Psychological Association*, 13(3), 224-237.
- 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. doi: 10.1089/cpb.2006.9973
- Hooper, S., Rosser, B. R. S., Horvath, K. J., Oakes, J. M., & Danilenko, G. (2008). An online needs assessment of a virtual community: what men who use the internet to seek sex with men want in Internet-based HIV prevention. *AIDS and Behavior*, 12(6), 867-875.
- Hu, L.-t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.

- Huesmann, L. R. (1986). Psychological Processes Promoting the Relation Between Exposure to Media Violence and Aggressive Behavior by the Viewer. *Journal of Social Issues, 42*(3), 125-139. doi: 10.1111/j.1540-4560.1986.tb00246.x
- Hussen, S. A., Bowleg, L., Sangaramoorthy, T., & Malebranche, D. J. (2012). Parents, peers and pornography: the influence of formative sexual scripts on adult HIV sexual risk behaviour among Black men in the USA. *Culture, Health & Sexuality, 14*(8), 863-877. doi: 10.1080/13691058.2012.703327
- Janssen, E., Carpenter, D., & Graham, C. A. (2003). Selecting Films for Sex Research: Gender Differences in Erotic Film Preference. *Archives of Sexual Behavior, 32*(3), 243-251. doi: 10.1023/a:1023413617648
- Kalichman, S. C., Johnson, J. R., Adair, V., Rompa, D., Multhauf, K., & Kelly, J. A. (1994). Sexual Sensation Seeking: Scale Development and Predicting AIDS-Risk Behavior Among Homosexually Active Men. *Journal of Personality Assessment, 62*(3), 385-397.
- Kalichman, S. C., & Rompa, D. (1995). Sexual sensation seeking and sexual compulsivity scales: Reliability, validity, and predicting HIV risk behavior. *Journal of Personality Assessment.*
- Kalichman, S. C., & Rompa, D. (2001). The Sexual Compulsivity Scale: further development and use with HIV-positive persons. *Journal of Personality Assessment, 76*(3), 379-395.
- Kelly, J. A., Murphy, D. A., Sikkema, K. J., & Kalichman, S. C. (1993). Psychological interventions to prevent HIV infection are urgently needed: new priorities for behavioral research in the second decade of AIDS. *American Psychologist, 48*(10), 1023.
- Kohut, T., & Fisher, W. A. (2013). The impact of brief exposure to sexually explicit video clips on partnered female clitoral self-stimulation, orgasm and sexual satisfaction. *The Canadian Journal of Human Sexuality, 22*(1), 40-50. doi: 10.3138/cjhs.935
- 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 & Behavior, 37*(2), 243-263.
- Kubicek, K., Carpineto, J., McDavitt, B., Weiss, G., & Kipke, M. (2011). Use and Perceptions of the Internet for Sexual Information and Partners: A Study of Young Men Who Have Sex with Men. *Archives of Sexual Behavior, 40*(4), 803-816. doi: 10.1007/s10508-010-9666-4
- Kühn, S., & Gallinat, J. (2014). Brain structure and functional connectivity associated with pornography consumption: The brain on porn. *JAMA Psychiatry*. doi: 10.1001/jamapsychiatry.2014.93
- Lam, M.-p. (1997). *A study on the knowledge, attitudes and behaviours of secondary school pupils relating to sex*: Government Printer.
- Lambert, N. M., Negash, S., Stillman, T. F., Olmstead, S. B., & Fincham, F. D. (2012). A Love That Doesn't Last: Pornography Consumption and Weakened Commitment to One's Romantic Partner. *Journal of Social and Clinical Psychology, 31*(4), 410-438. doi: 10.1521/jscp.2012.31.4.410
- Larsson, M., & Tyden, T. (2006). Increased sexual risk taking behavior among Swedish female university students: repeated cross-sectional surveys. *Acta Obstet Gynecol Scand, 85*(8), 966-970.
- Lee, B., & Tamborini, R. (2005). Third-Person Effect and Internet Pornography: The Influence of Collectivism and Internet Self-Efficacy. *Journal of Communication, 55*(2), 292-310. doi: 10.1111/j.1460-2466.2005.tb02673.x
- Lo, V.-h., & Wei, R. (2002). Third-Person Effect, Gender, and Pornography on the Internet. *Journal of Broadcasting & Electronic Media, 1*(1), 13-33.
- Lo, V.-h., & Wei, R. (2005). Exposure to Internet Pornography and Taiwanese Adolescents' Sexual Attitudes and Behavior. *Journal of Broadcasting & Electronic Media, 49*(2), 221-237. doi: 10.1207/s15506878jobem4902_5

- Lofgren-Martenson, L., & Mansson, S.-A. (2010). Lust, love, and life: A qualitative study of Swedish adolescents' perceptions and experiences with pornography. 6. 47
- Luder, M.-T., Pittet, I., Berchtold, A., Akre, C., Michaud, P.-A., & Suris, J.-C. (2011). Associations between online pornography and sexual behavior among adolescents: Myth or reality? *Archives of Sexual Behavior, 40*(5), 1027-1035.
- MacKinnon, C. A. (1989). *Toward a feminist theory of the state*: Harvard University Press.
- Maddox, A. M., Rhoades, G. K., & Markman, H. J. (2011). Viewing sexually-explicit materials alone or together: associations with relationship quality. *Archives of Sexual Behavior, 40*(2), 441-448.
- Malamuth, N. M., Addison, T., & Koss, M. (2000). Pornography and Sexual Aggression: Are There Reliable Effects and Can We Understand Them? *Annual Review of Sex Research, 11*(1), 26-91.
doi: 10.1080/10532528.2000.10559784
- Malamuth, N. M., Sockloskie, R., Koss, M., & Tanaka, J. (1991). The characteristics of aggressors against women: Testing a model using a national sample of college students. *Journal of Consulting and Clinical Psychology, 59*, 670-681.
- Manning, J. (2006). The Impact of Internet Pornography on Marriage and the Family: A Review of the Research. *Sexual Addiction & Compulsivity: The Journal of Treatment and Prevention, 13*(2-3), 131-165.
- Månsson, S., Daneback, K., Tikkanen, R., & Löfgren-Mårtenson, L. (2003). Kärlek och sex på internet [Love and sex on the internet]. *Göteborg University and Malmö University. Nätsexprojektet Rapport, 1*.
- Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11*(3), 320-341.
- Mattebo, M., Larsson, M., Tyden, T., Olsson, T., & Haggstrom-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. *The European Journal of Contraception and Reproductive Health Care*, 17(1), 40-49.
- McKee, A. (2005). The objectification of women in mainstream pornographic videos in Australia. *Journal of Sex Research*, 42(4), 277-290. doi: 10.1080/00224490509552283
- McKee, A. (2007). The Relationship Between Attitudes Towards Women, Consumption of Pornography, and Other Demographic Variables in a Survey of 1,023 Consumers of Pornography. *International Journal of Sexual Health*, 19(1), 31-45. doi: 10.1300/J514v19n01_05
- McNair, B. (2002). *Striptease culture: Sex, media and the democratization of desire*: Psychology Press.
- McNair, B. (2014). Rethinking the effects paradigm in porn studies. *Porn Studies*, 1(1-2), 161-171. doi: 10.1080/23268743.2013.870306
- Miller, R. S., & Lefcourt, H. M. (1982). The assessment of social intimacy. *Journal of Personality Assessment*, 46(5), 514-518.
- Monro, S. (2005). Beyond Male and Female: Poststructuralism and the Spectrum of Gender. *International Journal of Transgenderism*, 8(1), 3-22. doi: 10.1300/J485v08n01_02
- Montesi, J., Conner, B., Gordon, E., Fauber, R., Kim, K., & Heimberg, R. (2013). On the Relationship Among Social Anxiety, Intimacy, Sexual Communication, and Sexual Satisfaction in Young Couples. *Archives of Sexual Behavior*, 42(1), 81-91. doi: 10.1007/s10508-012-9929-3
- Morgan, E. M. (2011). Associations between Young Adults' Use of Sexually Explicit Materials and Their Sexual Preferences, Behaviors, and Satisfaction. *Journal of Sex Research*, 48(6), 520-530. doi: 10.1080/00224499.2010.543960
- Morrison, T. G., Ellis, S., Morrison, M., Bearden, A., & Harriman, R. (2006). Exposure to Sexually Explicit Material and Variations in Body Esteem, Genital Attitudes, and Sexual Esteem among a Sample of Canadian Men. *The Journal of Men's Studies*, 14(2), 209-222.

- Morrison, T. G., Harriman, R., Morrison, M. A., Bearden, A., & Ellis, S. (2004). Correlates of Exposure To Sexually Explicit Material Among Canadian Post-Secondary Students. *The Canadian Journal of Human Sexuality, 13*(3-4).
- Mosher, D. L. (1980). Three dimensions of depth of involvement in human sexual response 1. *Journal of Sex Research, 16*(1), 1-42.
- Mosher, D. L., & Maclan, P. (1994). College men and women respond to X-rated videos intended for male or female audiences: Gender and sexual scripts. *Journal of Sex Research, 31*(2), 99-113.
- Moss, B. F., & Schwebel, A. I. (1993). Defining Intimacy in Romantic Relationships. *Family Relations, 42*(1), 31-37. doi: 10.2307/584918
- Nelson, K. M., Simoni, J. M., Morrison, D. M., George, W. H., Leickly, E., Lengua, L. J., & Hawes, S. E. (2014). Sexually Explicit Online Media and Sexual Risk Among Men Who Have Sex with Men in the United States. *Arch Sex Behav.* doi: 10.1007/s10508-013-0238-2
- Noar, S., Cole, C., & Carlyle, K. (2006). Condom Use Measurement in 56 Studies of Sexual Risk Behavior: Review and Recommendations. *Archives of Sexual Behavior, 35*(3), 327-345. doi: 10.1007/s10508-006-9028-4
- O'Hara, R. E., Gibbons, F. X., Gerrard, M., Li, Z., & Sargent, J. D. (2012). Greater exposure to sexual content in popular movies predicts earlier sexual debut and increased sexual risk taking. *Psychological science, 23*(9), 984-993.
- Olivo, S. A., Macedo, L. G., Gadotti, I. C., Fuentes, J., Stanton, T., & Magee, D. J. (2008). Scales to assess the quality of randomized controlled trials: a systematic review. *Physical Therapy, 88*(2), 156-175.
- Olmstead, S., Negash, S., Pasley, K., & Fincham, F. (2013). Emerging Adults' Expectations for Pornography Use in the Context of Future Committed Romantic Relationships: A Qualitative Study. *Archives of Sexual Behavior, 42*(4), 625-635. doi: 10.1007/s10508-012-9986-7

- Parsons, J. T., Kelly, B. C., Bimbi, D. S., Muench, F., & Morgenstern, J. (2007). Accounting for the social triggers of sexual compulsivity. *Journal of Addictive Diseases, 26*(3), 5-16. doi: 10.1300/J069v26n03_02
- Paul, B. (2009). Predicting internet pornography use and arousal: the role of individual difference variables. *Journal of Sex Research, 46*(4), 344-357.
- Paul, B., & Kobach, M. (2014). Male–Female Reactions to Variations in Sexual Explicitness in Pornography: An Empirical Test of Predictions of Intra- and Inter-gender Differences. *Sexuality & Culture, 18*(1), 56-75. doi: 10.1007/s12119-013-9173-6
- Paul, B., & Shim, J. W. (2008). Gender, Sexual Affect, and Motivations for Internet Pornography Use. *International Journal of Sexual Health, 20*(3), 187-199.
- Paul, E. L., McManus, B., & Hayes, A. (2000). “Hookups”: Characteristics and correlates of college students' spontaneous and anonymous sexual experiences. *Journal of Sex Research, 37*(1), 76-88.
- Paul, P. (2007). *Pornified: How pornography is transforming our lives, our relationships, and our families*: Macmillan.
- Perry, M., Accordino, M. P., & Hewes, R. L. (2007). An Investigation of Internet Use, Sexual and Nonsexual Sensation Seeking, and Sexual Compulsivity among College Students. *Sexual Addiction & Compulsivity, 14*(4), 321-335. doi: 10.1080/10720160701719304
- Peter, J., & Valkenburg, P. M. (2006). Adolescents' Exposure to Sexually Explicit Material on the Internet. *Communication Research, 33*(2), 178-204.
- Peter, J., & Valkenburg, P. M. (2008). Adolescents' Exposure to Sexually Explicit Internet Material and Sexual Preoccupancy: A Three-Wave Panel Study. *Media Psychology, 11*(2), 207-234. doi: 10.1080/15213260801994238
- Peter, J., & Valkenburg, P. M. (2009). Adolescents' Exposure to Sexually Explicit Internet Material and Sexual Satisfaction: A Longitudinal Study. *Human Communication Research, 35*(2), 171-194. doi: 10.1111/j.1468-2958.2009.01343.x

- Peter, J., & Valkenburg, P. M. (2010). Adolescents' use of sexually explicit Internet material and sexual uncertainty: The role of involvement and gender. *77*, 357-375.
- Peter, J., & Valkenburg, P. M. (2011a). 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. (2011b). The Use of Sexually Explicit Internet Material and Its Antecedents: A Longitudinal Comparison of Adolescents and Adults. *Archives of Sexual Behavior*, *40*(5), 1015-1025. doi: 10.1007/s10508-010-9644-x
- Popovic, M. (2011). Pornography Use and Closeness with Others in Men. *Archives of Sexual Behavior*, 449-456.
- Poulsen, F. O., Busby, D. M., & Galovan, A. M. (2012). Pornography Use: Who Uses It and How It Is Associated with Couple Outcomes. *J Sex Res*, *50*(1), 72-83. doi: 10.1080/00224499.2011.648027
- Pyle, T., & Bridges, A. (2012). Perceptions of relationship satisfaction and addictive behavior: Comparing pornography and marijuana use. *Journal of Behavioral Addictions*, *1*(4), 171-179. doi: 10.1556/jba.1.2012.007
- Regassa, N., & Kedir, S. (2011). Attitudes and practices on HIV preventions among students of higher education institutions in Ethiopia: the case of Addis Ababa University. *East African journal of public health*, *8*(2), 141-154.
- Resch, M. N., & Alderson, K. G. (2013). Female Partners of Men Who Use Pornography: Are Honesty and Mutual Use Associated With Relationship Satisfaction? *Journal of Sex & Marital Therapy*, 1-15. doi: 10.1080/0092623x.2012.751077
- Richters, J., Grulich, A. E., de Visser, R. O., Smith, A. M. A., & Rissel, C. E. (2003). Sex in Australia: Autoerotic, esoteric and other sexual practices engaged in by a representative sample of adults. *Australian and New Zealand Journal of Public Health*, *27*(2), 180-190. doi: 10.1111/j.1467-842X.2003.tb00806.x

- Robinson, B. B. E., Manthei, R., Scheltema, K., Rich, R., & Koznar, J. (1999). Therapeutic uses of sexually explicit materials in the united states and the czech and slovak republics: A qualitative study. *Journal of Sex & Marital Therapy*, 25(2), 103-119. doi: 10.1080/00926239908403983
- Rogala, C., & Tyden, T. (2003). Does pornography influence young women,Ås sexual behavior? *Women,Ås Health Issues*, 13(1), 39-43.
- Ropelato, J. (2007). Internet pornography statistics, <http://internet-filter-review.toptenreviews.com/internet-pornography-statistics.html>. Retrieved 2nd June, 2012
- Rosser, B. R. S., Grey, J. A., Wilkerson, J. M., Iantaffi, A., Brady, S. S., Smolenski, D. J., & Horvath, K. J. (2012). A Commentary on the Role of Sexually Explicit Media (SEM) in the Transmission and Prevention of HIV among Men who have Sex with Men (MSM). *AIDS Behav.* doi: 10.1007/s10461-012-0135-z
- Rosser, B. R. S., Smolenski, D., Erickson, D., Iantaffi, A., Brady, S., Grey, J., . . . Wilkerson, J. (2013). The Effects of Gay Sexually Explicit Media on the HIV Risk Behavior of Men Who Have Sex with Men. *AIDS & Behavior*, 17(4), 1488-1498. doi: 10.1007/s10461-013-0454-8
- Rosser, B. R. S., Wilkerson, J. M., Smolenski, D. J., Oakes, J. M., Konstan, J., Horvath, K. J., . . . Morgan, R. (2011). The future of Internet-based HIV prevention: a report on key findings from the Men's INTERNET (MINTS-I, II) Sex Studies. *AIDS and Behavior*, 15(1), 91-100.
- Rossiter, J. R. (2002). The C-OAR-SE procedure for scale development in marketing. *International Journal of Research in Marketing*, 19(4), 305-335.
- Rothman, E. F., Decker, M. R., Miller, E., Reed, E., Raj, A., & Silverman, J. (2012). Multi-person Sex among a Sample of Adolescent Female Urban Health Clinic Patients. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 89(1).
- Ruggiero, T. E. (2000). Uses and gratifications theory in the 21st century. *Mass Communication & Society*, 3(1), 3-37.

- Sanchez, D., & Kiefer, A. (2007). Body Concerns In and Out of the Bedroom: Implications for Sexual Pleasure and Problems. *Archives of Sexual Behavior, 36*(6), 808-820. doi: 10.1007/s10508-007-9205-0
- Sanderson, S., Tatt, I. D., & Higgins, J. P. (2007). Tools for assessing quality and susceptibility to bias in observational studies in epidemiology: a systematic review and annotated bibliography. *International Journal of Epidemiology, 36*(3), 666-676.
- Schneider, J. P. (2000). Effects of cybersex addiction on the family: Results of a survey. *Sexual Addiction & Compulsivity: The Journal of Treatment and Prevention, 7*(1-2), 31-58.
- Seto, M. C., Maric, A., & Barbaree, H. E. (2001). The role of pornography in the etiology of sexual aggression. *Aggression and Violent Behavior, 6*(1), 35-53.
- Short, M., Black, L., Smith, A., Wetterneck, C., & Wells, D. (2012). A review of internet pornography use research: methodology and content from the past 10 years. *Cyberpsychol Behav Soc Netw, 15*(1), 13-23.
- Simon, W., & Gagnon, J. H. (1986). Sexual scripts: permanence and change. *Archives of Sexual Behavior, 15*(2), 97-120.
- Sinkovic, M., Stulhofer, A., & Bozic, J. (2013). Revisiting the association between pornography use and risky sexual behaviors: the role of early exposure to pornography and sexual sensation seeking. *J Sex Res, 50*(7), 633-641. doi: 10.1080/00224499.2012.681403
- Stack, S., Wasserman, I., & Kern, R. (2004). Adult Social Bonds and Use of Internet Pornography*. *Social Science Quarterly, 85*(1), 75-88.
- Stein, D., Silvera, R., Hagerty, R., & Marmor, M. (2011). Viewing Pornography Depicting Unprotected Anal Intercourse: Are There Implications for HIV Prevention Among Men Who Have Sex with Men? *Archives of Sexual Behavior, 1-9*. doi: 10.1007/s10508-011-9789-2
- Stein, D., Silvera, R., Hagerty, R., & Marmor, M. (2012). Viewing pornography depicting unprotected anal intercourse: are there implications for HIV prevention among men who have sex with men? *Arch Sex Behav, 41*(2), 411-419. doi: 10.1007/s10508-011-9789-2

- Stern, S., & Handel, A. (2001). Sexuality and mass media: The historical context of psychology's reaction to sexuality on the internet. *Journal of Sex Research, 38*(4), 283-291.
- Story, M. D. (1984). Comparisons of body self-concept between social nudists and non-nudists. *Journal of Social Psychology, 118*, 99-112.
- Strossen, N. (2000). *Defending pornography: Free speech, sex, and the fight for women's rights*: NYU Press.
- Stulhofer, A., Busko, V., & Landripet, I. (2010). Pornography, sexual socialization, and satisfaction among young men. *Archives of Sexual Behavior, 39*(1), 168-178.
- Štulhofer, A., Jelovica, V., & Ružić, J. (2008). Is Early Exposure to Pornography a Risk Factor for Sexual Compulsivity? Findings from an Online Survey among Young Heterosexual Adults. *International Journal of Sexual Health, 20*(4), 270-280. doi: 10.1080/19317610802411870
- Suls, J., Martin, R., & Wheeler, L. (2002). Social comparison: why, with whom, and with what effect? *Current directions in psychological science, 11*(5), 159-163.
- The Kirby Institute. (2014). HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2014. Sydney NSW 2052: The Kirby Institute, UNSW.
- To, S.-M., Ngai, S. S.-Y., & Lu Kan, S.-m. (2012). Direct and mediating effects of accessing sexually explicit online materials on Hong Kong adolescents' attitude, knowledge, and behavior relating to sex. *Children and Youth Services Review, 34*(11), 2156-2163.
- Traeen, B., & Daneback, K. (2013). The use of pornography and sexual behaviour among Norwegian men and women of differing sexual orientation. *Sexologies: European Journal of Sexology and Sexual Health / Revue europeenne de sexologie et de sante sexuelle, 22*(2), e41-e48.
- Traeen, B., & Nilson, T. S. r. (2006). Use of pornography in traditional media and on the Internet in Norway. *Journal of Sex Research, 43*(3), 245-254.
- Twohig, M. P., Crosby, J. M., & Cox, J. M. (2009). Viewing Internet Pornography: For Whom is it Problematic, How, and Why? *Sexual Addiction & Compulsivity, 16*(4), 253-266. doi: 10.1080/10720160903300788

- Tyden, T., & Rogala, C. (2004). Sexual behaviour among young men in Sweden and the impact of pornography. *International journal of STD & AIDS, 15*(9), 590-593.
- Wang, T., Collet, J.-P., Shapiro, S., & Ware, M. A. (2008). Adverse effects of medical cannabinoids: a systematic review. *Canadian Medical Association Journal, 178*(13), 1669-1678.
- Waring, E. M. (1987). *Enhancing marital intimacy through facilitating cognitive self disclosure*: Routledge.
- Watt, J. D., & Ewing, J. E. (1996). Toward the Development and Validation of a Measure of Sexual Boredom. *The Journal of Sex Research, 33*(1), 57-66.
- Weaver, J. B., 3rd, Weaver, S. S., Mays, D., Hopkins, G. L., Kannenberg, W., & McBride, D. (2011). Mental- and physical-health indicators and sexually explicit media use behavior by adults. *J Sex Med, 8*(3), 764-772. doi: 10.1111/j.1743-6109.2010.02030.x
- Weinberg, M. S., Williams, C. J., Kleiner, S., & Irizarry, Y. (2010). Pornography, normalization, and empowerment. *Archives of Sexual Behavior, 39*(6), 1389-1401.
- Weisskirch, R. S., & Murphy, L. C. (2004). Friends, porn, and punk: Sensation seeking in personal relationships, Internet activities, and music preference among college students. *Adolescence, 39*(154), 189-201.
- Wetterneck, C. T., Burgess, A. J., Short, M. B., Smith, A. H., & Cervantes, M. E. (2012). The Role Of Sexual Compulsivity, Impulsivity, And Experiential Avoidance In Internet Pornography Use. *Psychological Record, 62*(1), 3-17.
- Wheless, L. R., Wheless, V. E., & Baus, R. (1984). Sexual communication, communication satisfaction, and solidarity in the developmental stages of intimate relationships. *Western Journal of Communication, 48*(3), 217-230.
- Wiederman, M. W. (1999). Volunteer bias in sexuality research using college student participants. *Journal of Sex Research, 36*(1), 59-66.
- Wiederman, M. W. (2000). Women's body image self-consciousness during physical intimacy with a partner. *The Journal of Sex Research, 60*-68.

- Wiederman, M. W. (2005). The gendered nature of sexual scripts. *The Family Journal*, 13(4), 496-502.
- Wijaya Mulya, T., & Hald, G. M. (2014). Self-Perceived Effects of Pornography Consumption in a Sample of Indonesian University Students. *Media Psychology*, 17(1), 78-101. doi: 10.1080/15213269.2013.850038
- Wingood, G. M., DiClemente, R. J., Harrington, K., Davies, S., Hook lli, E. W., & Oh, M. K. (2001). Exposure to X-Rated Movies and Adolescents' Sexual and Contraceptive-Related Attitudes and Behaviors. *Pediatrics*, 107(5), 1116-1119.
- Wright, P. J. (2011a). Mass Media Effects on Youth Sexual Behavior. *Communication Yearbook*, 35, 343-386.
- Wright, P. J. (2011b). U.S. Males and Pornography, 1973–2010: Consumption, Predictors, Correlates. *Journal of Sex Research*, 1-12. doi: 10.1080/00224499.2011.628132
- Wright, P. J. (2012a). A longitudinal analysis of us adults' pornography exposure: Sexual socialization, selective exposure, and the moderating role of unhappiness. *Journal of Media Psychology: Theories, Methods, and Applications*, 24(2), 67-76.
- Wright, P. J. (2012b). Pornography consumption, cocaine use, and casual sex among U.S. adults. *Psychological Reports*, 111(1), 305-310. doi: 10.2466/18.02.13.pr0.111.4.305-310
- Wright, P. J. (2013). U.S. males and pornography, 1973-2010: consumption, predictors, correlates. *J Sex Res*, 50(1), 60-71. doi: 10.1080/00224499.2011.628132
- Wright, P. J., Bae, S., & Funk, M. (2013). United States women and pornography through four decades: Exposure, attitudes, behaviors, individual differences. *Archives of Sexual Behavior*, 42(7), 1131-1144.
- Wu, J. Q., Wang, K. W., Zhao, R., Li, Y. Y., Zhou, Y., Li, Y. R., . . . Ji, M. (2014). Male Rural-to-Urban Migrants and Risky Sexual Behavior: A Cross-Sectional Study in Shanghai, China. *Int J Environ Res Public Health*, 11(3), 2846-2864. doi: 10.3390/ijerph110302846
- Wulfert, E., & Wan, C. K. (1993). Condom use: A self-efficacy model. *Health Psychology*, 12(5), 346-353. doi: 10.1037/0278-6133.12.5.346

- Yoder, V. C., Virden, T., & Amin, K. (2005). Internet Pornography and Loneliness: An Association? *Sexual Addiction & Compulsivity, 12*(1), 19-44.
- Zhao, X., & Cai, X. (2008). From Self-Enhancement to Supporting Censorship: The Third-Person Effect Process in the Case of Internet Pornography. *Mass Communication and Society, 11*(4), 437-462. doi: 10.1080/15205430802071258
- Zillmann, D. (2000). Influence of unrestrained access to erotica on adolescents' and young adults' dispositions toward sexuality. *Journal of Adolescent Health, 27*(2), 41-44.
- Zillmann, D., & Bryant, J. (1986). Shifting Preferences In Pornography Consumption *Communication Research, 13*(4), 560-578. doi: 10.1177/009365086013004003
- Zillmann, D., & Bryant, J. (1988). Effects of Prolonged Consumption of Pornography on Family Values. *Journal of Family Issues, 9*(4), 518-544. doi: 10.1177/019251388009004006
- Zuckerman, M. (1994). *Behavioral expressions and biosocial bases of sensation seeking*: Cambridge university press.

Appendices

Appendix A: Ethics Approval Letter.....	176
Appendix B: Participant Information Statement for all surveys.....	178
Appendix C: Advertisements for all surveys.....	179
Appendix D: Survey One- Internet Pornography Use and Sexual Risk Behaviours.....	180
Appendix E: Survey Two- Internet Pornography Use; Cognitive Associations and Non-Risky Sexual Behaviour.....	186
Appendix F: Survey Three-Use of Internet Pornography in Individuals in Relationships.....	198

Appendix A: Ethics Approval



RESEARCH INTEGRITY
Human Research Ethics Committee
 Web: <http://sydney.edu.au/ethics/>
 Email: ro.humanethics@sydney.edu.au

Address for all correspondence:
 Level 6, Jane Foss Russell Building - G02
 The University of Sydney
 NSW 2006 AUSTRALIA

MF/PE

18 January 2012

Dr Barbara Mullan
 School of Psychology
 Brennan MacCallum Building – A18
 The University of Sydney
 Barbara.mullan@sydney.edu.au

Dear Dr Mullan

Thank you for your correspondence dated 14 December 2011 and 17 January 2012 addressing comments made to you by the Human Research Ethics Committee (HREC).

I am pleased to inform you that with the matters now addressed your protocol entitled “**Positive and negative effects of Internet Pornography (Cyberporn) on sexual behaviour and attitudes in Australian residents**” has been approved.

Details of the approval are as follows:

Protocol No.: 14317
Approval Date: 18 January 2012
First Annual Report Due: 31 January 2013
Authorised Personnel: Dr Barbara Mullan
 Professor Alex Blaszczyński
 Ms Emily Harkness
Documents Approved:

Document	Version Number	Date
Advertisements	3	10/1/2012
Participant Information Statement (telephone interviews)	1	24/10/2011
Participant Information Statement (in-person interviews)	1	24/10/2011
Participant Consent Form (qualitative interviews)	1	24/10/2011
Debriefing Statement	1	24/10/2011
Participant Information Statement (survey)	2	14/12/2011
Survey	1	24/10/2011
Qualitative Interview Script	1	24/10/2011

HREC approval is valid for four (4) years from the approval date stated in this letter and is granted pending the following conditions being met:

Condition/s of Approval

- Continuing compliance with the National Statement on Ethical Conduct in Research Involving Humans.

Manager Human Ethics
 Dr Margaret Faedo
 T: +61 2 8627 8176
 E: margaret.faedo@sydney.edu.au

Human Ethics Secretariat:
 Ms Karen Greer T: +61 2 8627 8171 E: karen.greer@sydney.edu.au
 Ms Patricia Engelmann T: +61 2 8627 8172 E: patricia.engelmann@sydney.edu.au
 Ms Kala Retnam T: +61 2 8627 8173 E: kala.retnam@sydney.edu.au

ABN 15 211 513 464
 CRICOS 00026A



- Provision of an annual report on this research to the Human Research Ethics Committee from the approval date and at the completion of the study. Failure to submit reports will result in withdrawal of ethics approval for the project.
- All serious and unexpected adverse events should be reported to the HREC within 72 hours.
- All unforeseen events that might affect continued ethical acceptability of the project should be reported to the HREC as soon as possible.
- Any changes to the protocol including changes to research personnel must be approved by the HREC by submitting a Modification Form before the research project can proceed.

Chief Investigator / Supervisor's responsibilities:

1. You must retain copies of all signed Consent Forms and provide these to the HREC on request.
2. It is your responsibility to provide a copy of this letter to any internal/external granting agencies if requested.

Please do not hesitate to contact Research Integrity (Human Ethics) should you require further information or clarification.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Margaret Faedo'.

Dr Margaret Faedo
Manager, Human Ethics
On behalf of the HREC

cc Ms Emily Harkness ehar5637@uni.sydney.edu.au

This HREC is constituted and operates in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2007), NHMRC and Universities Australia Australian Code for the Responsible Conduct of Research (2007) and the CPMP/ICH Note for Guidance on Good Clinical Practice.

Appendix B: Participant Information Statement for all surveys



THE UNIVERSITY OF
SYDNEY

School of Psychology
Faculty of Science

ABN 15 211 513 464

Dr Barbara Mullan
Senior Lecturer in Psychology

Room 446, Brennan MacCallum (A18)
The University of Sydney NSW 2006 AUSTRALIA
Telephone: +61 2 9351 6811; Facsimile: +61 2 9036 5223
Email: Barbara.mullan@sydney.edu.au; Web: <http://www.sydney.edu.au/>

An evaluation of sexually explicit websites use, attitudes and behaviour **PARTICIPANT INFORMATION STATEMENT**

(1) What is the study about?

You are invited to participate in a study about sexually explicit websites use, attitudes and behaviour

(2) Who is carrying out the study?

The study is being conducted by Emily Harkness and will form the basis for the degree of Doctorate of Clinical Psychology/ Masters of Science at The University of Sydney, under the supervision of Dr Barbara Mullan and Professor Alex Blaszczynski.

(3) What does the study involve?

The study involves filling out an online survey, which will ask questions about internet pornography use, your sexual and romantic relationships with others and your sexual behaviours and attitudes. Many of these questions are of a personal nature, and may be uncomfortable for some people to answer. If you feel uncomfortable at any time while completing the survey, you may skip the question or withdraw your participation. To participate in this study, you must be over 18, be fluent in written and spoken English and be living in Australia.

(4) How much time will the study take?

The survey will take approximately 20-30 minutes to complete.

(5) Can I withdraw from the study?

Being in this study is completely voluntary - you are not under any obligation to consent and - if you do consent - you can withdraw at any time without affecting your relationship with The University of Sydney or the School of Psychology.

Being in this study is completely voluntary and you are not under any obligation to consent to complete the survey. Submitting a completed survey is an indication of your consent to participate in the study. You can withdraw any time prior to submitting your completed survey. Once you have submitted your survey anonymously, your responses cannot be withdrawn.

(6) Will anyone else know the results?

All aspects of the study, including results, will be strictly confidential and only the researcher team will have access to information on participants, except if required by law. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report. The data will be retained for seven years, and will be securely stored in the chief investigator's office or laboratory; after this time all data will be physically destroyed.

(7) Will the study benefit me?

If you would like to provide your email address at the end of the survey, you will go in the draw to win one of two \$50 Westfield gift cards. Aside from this, we cannot and do not guarantee or promise that you will receive any benefits from the study.

(8) Can I tell other people about the study?

Yes, you are welcome to tell others about the study. If they are interested in participating, you may provide them with details of the study (such as the website URL) at their request.

(9) What if I require further information about the study or my involvement in it?

When you have read this information, Emily Harkness will discuss it with you further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact Emily Harkness (ehar5637@uni.sydney.edu.au, ph: (02) 9351 5952), Dr. Barbara Mullan (barbara.mullan@sydney.edu.au, Ph: (02) 9351 6811 or Professor Alex Blaszczynski (alex.blaszczynski@sydney.edu.au, Ph: (02) 9036 7227).

(10) What if I have a complaint or any concerns?

Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Appendix C: Advertisements for all surveys

- **For email, community notice boards, websites (including social networking websites) and newsletters.**

An evaluation of sexually explicit websites use, attitudes and behaviour- Participants required!

We are interested in your experiences with sexually explicit (pornographic) website use, as well as your behaviour and attitudes.

The study involves filling out a brief online survey, which will ask questions about the sorts of websites you visit, your relationships, sexual behaviours and attitudes. The survey is voluntary, anonymous and confidential.

To participate in this study, you must be over 18, be fluent in written and spoken English and be living in Australia.

Please click on the link below to begin the survey

[Study URL which will open at Participant Information Statement]

- **For SONA**

Study Name

An evaluation of sexually explicit websites use, attitudes and behaviour

Brief Abstract

A study examining sexually explicit (pornographic) website use, attitudes and behaviour.

Detailed Description

The study involves filling out a brief online survey, which will ask questions about the sorts of websites you visit, your relationships, sexual behaviours and attitudes. The survey is voluntary, anonymous and confidential.

Eligibility Requirements

To participate in this study, you must be over 18, be fluent in written and spoken English and be living in Australia.

Duration

The survey will take approximately 20-30 minutes to complete.

Credits

You will receive .75 credits.

Appendix D: Survey One- Internet Pornography Use and Sexual Risk Behaviours

Note: please refer to appendix E (section E.1) for the pornography use characteristics questionnaire administered to participants in study one.

D.1. Demographics

- What is your age? _____
- Which country do you currently live in? _____
- What is your cultural background or ethnicity? _____
- Are you religious?
 Yes No
- a) If so, please indicate your religion: _____
- What is your gender?
 Male Female Transgender
- What is your nationality? _____
- Are you currently in a sexual relationship? (regular sexual interaction with the same person)
 Yes No
- Are you currently in a committed (i.e. romantic) relationship?
 Yes No
- What is your sexual orientation?
 Heterosexual homosexual Bisexual
- How many years (full time) of education have you received (Inc. Kindergarten & school)

D.2. Revised Sexual Sensation Seeking Scale (Kalichman and Rompa 1995)

A number of statements that some people have used to describe themselves are given below. Read each statement and then circle the number of the statement that best describes you.

- 1 = Not at all like me
- 2 = Slightly like me
- 3 = Mainly like me
- 4 = Very Much like me

1. I like wild "uninhibited" sexual encounters
1 2 3 4
2. The physical sensations are the most important thing about having sex
1 2 3 4
3. I enjoy the sensation of intercourse without a condom
1 2 3 4
4. My sexual partners probably think I am a "risk taker"
1 2 3 4
5. When it comes to sex, physical attraction is more important to me than how well I know the person
1 2 3 4
6. I enjoy the company of "sensual" people
1 2 3 4
7. I enjoy watching "x-rated" videos
1 2 3 4
8. I have said things that were not exactly true to get a person to have sex with me
1 2 3 4
9. I am interested in trying out new sexual experiences
1 2 3 4
10. I feel like exploring my sexuality
1 2 3 4
11. I like to have new and exciting sexual experiences and sensations
1 2 3 4

D.3. Sexual Compulsivity Scale (Kalichman)

A number of statements that some people have used to describe themselves are given below. Read each statement and then circle the number of the statement that best describes you.

- 1 = Not at all like me
- 2 = Slightly like me
- 3 = Mainly like me
- 4 = Very Much like me

- My sexual appetite has gotten in the way of my relationships.
1 2 3 4
- My sexual thoughts and behaviours are causing problems in my life.
1 2 3 4
- My desires to have sex have disrupted my daily life.
1 2 3 4
- I sometimes fail to meet my commitments and responsibilities because of my sexual behaviours.
1 2 3 4
- I sometimes get so horny I could lose control.
1 2 3 4
- I find myself thinking about sex while at work.
1 2 3 4
- I feel that sexual thoughts and feelings are stronger than I am.
1 2 3 4
- I have to struggle to control my sexual thoughts and behaviour.
1 2 3 4
- I think about sex more than I would like to.
1 2 3 4
- It has been difficult for me to find sex partners who desire having sex as much as I want to.
1 2 3 4

D.4. MCAS Multidimensional Condom Attitudes Scale

Please respond to all questions *even if you are not sexually active or have never used* (or had a partner who used) condoms. In such cases indicate how you *think you would feel* in such a situation.

Choose a number on the scale below that best represents your feelings about each statement. There are no right or wrong responses to any of these statements.

1= Strongly Disagree

2= Disagree

3= Slightly Disagree

4= Neutral

5= Slightly Agree

6= Agree

7= Strongly Agree

- It is really hard to bring up the issue of using condoms to my partner.
- Use of a condom is an interruption of foreplay.
- Women think men who use condoms are jerks.
- Condoms are an effective method of preventing the spread of AIDS and other sexually transmitted diseases.
- I always feel really uncomfortable when I buy condoms.
- Condoms are unreliable.
- When I suggest using a condom I am almost always embarrassed.
- Condoms ruin the sex act.
- I think condoms are an excellent means of contraception.
- I don't think that buying condoms is awkward.
- It is very embarrassing to buy condoms.
- It is easy to suggest to my partner that we use a condom.
- If a couple is about to have sex and the man suggests using a condom, it is less likely that they will have sex.
- Condoms do not offer reliable protection.
- Condoms are a lot of fun.
- I never know what to say when my partner and I need to talk about condoms or other protection.
- It would be embarrassing to be seen buying condoms in a store.

- People who suggest condom use are a little bit geeky.
- The use of condoms can make sex more stimulating.
- Condoms are an effective method of birth control.
- I'm comfortable talking about condoms with my partner.
- Men who suggest using a condom are really boring.
- When I need condoms, I often dread having to get them.
- A woman who suggests using a condom does not trust her partner.
- Condoms are uncomfortable for both parties.

D.5. Intention to use a Condom (from Conley and Collins, 2005)

“What is the probability (out of 100) that you will use a condom for each instance of sexual intercourse in the next 2 months?”

D.6. Using Condoms During Casual Sex

1. Of those in the last *month*, How many of these were regular partners (people with whom you have had sex more than once)? _____
2. How many times have you had sex with a regular partner in the last month? _____
 - a) On how many of these occasions did you use a condom? _____
3. How many times have you had sex with other (casual) partners in the last month?

- a) On how many of these occasions did you use a condom? _____

D.7. Number of Sexual Partners

1. How many sexual partners have you had in your lifetime? _____
2. In the last *month* how many sexual partners have you had? _____

D.8. STI History

1. Have you ever had a Sexually Transmitted Disease?

Yes No

Appendix E: Survey Two- Internet Pornography Use; Cognitive Associations and Non-Risky Sexual Behaviour

Note: please refer to appendix D (section D.1) for the demographics questionnaire administered to participants in study two.

E.1. Pornography Use Characteristics Questionnaire (full)

The following questionnaire will ask questions about whether you use sexually explicit websites, also known as internet pornography.

For the purposes of the questionnaire, pornography is defined as

“ Any kind of material aiming at creating or enhancing sexual feelings or thoughts in the user and, at the same time, containing explicit exposure and/or descriptions of the genitals and clear explicit sexual acts.”

Pornography may come in a variety of media including magazines, books, video clips, films, photos, comics and texts.

1. Over the past 12 months, how often have you deliberately accessed and viewed internet pornography, on average?

- Never or more than 12 months ago -- 0
- Once in the last 12 months - 1
- Once in the last 6 months - 2
- Less than once a month - 6
- 1-2 times a month - 18
- 3-4 times a month - 42
- 1-2 times a week- 78
- 3-4 times a week- 182
- 5-6 times a week- 286
- Once a day 365
- More than once a day (multiple times a day)

If participant answered “Never or more than 12 months ago” they will then be asked:

- a) Did you ever view pornography of any type on a regular basis before this (regular is more than once every 3 months)?

Yes No

2. Have you used other forms of pornography (non-internet based, such as DVDs, magazines) in the last 6 months?

Yes No

3. At what age did you first encounter pornographic material (of any kind- Magazines, videos/dvds, books etc)? *If you have NEVER encountered any sort of pornographic material please enter "NEVER"* _____

4. At what age did you first encounter or watch **internet** pornography (internet-based sexually explicit pictures, videos or writings)? _____

Control Participants will not be required to answer the below questions:

5. On average, how many hours do you spend looking at internet pornography, per week?

1. How important is it to you to use internet pornography?

1	2	3	4	5
Not at all important	Neither unimportant or important		Extremely important	

2. Where is the main place you use **internet** pornography?

- At home
- At work
- At university or college
- While travelling using a portable device
- Other (please explain) _____

3. What do you use to view internet pornography (you can tick more than one)?

- Desktop computer
- Laptop computer
- tablet device (such as an iPad)
- Smartphone (such as an iPhone)

4. When viewing internet pornography, the majority of the time, are you:

- Alone

- With your partner
- With friends or in a group
- Sometimes alone and sometimes with your partner

5. Do you pay for internet pornography?

Yes No

6. What are the main themes or types of internet pornography which you have viewed in the last 12 months? (Please check one or more):

- | | |
|--|--|
| <input type="checkbox"/> Amateur | <input type="checkbox"/> Homosexual Males |
| <input type="checkbox"/> Anal | <input type="checkbox"/> Hardcore |
| <input type="checkbox"/> Anime Or Hentai | <input type="checkbox"/> "Interracial" |
| <input type="checkbox"/> BDSM (Bondage & Discipline; Sadism & Masochism) | <input type="checkbox"/> Large Breasts |
| <input type="checkbox"/> "BBW" (overweight) | <input type="checkbox"/> Large Penis |
| <input type="checkbox"/> Bisexual | <input type="checkbox"/> Lesbian |
| <input type="checkbox"/> Bizarre Or Funny | <input type="checkbox"/> Masturbation |
| <input type="checkbox"/> Oral Sex | <input type="checkbox"/> Mature |
| <input type="checkbox"/> Couple Or Romantic | <input type="checkbox"/> Point Of View "POV" |
| <input type="checkbox"/> Ejaculation- "Cream Pie" Or "Cumshots" | <input type="checkbox"/> Sex Toys |
| <input type="checkbox"/> Double/Multiple Penetration | <input type="checkbox"/> "Watersports" |
| <input type="checkbox"/> Ethnic | <input type="checkbox"/> Teen Or "barely Legal" |
| <input type="checkbox"/> Fantasy | <input type="checkbox"/> Threesome Or Group Sex |
| <input type="checkbox"/> Female Friendly (Pornography for Women) | <input type="checkbox"/> Vintage Or Classic |
| <input type="checkbox"/> Female Ejaculation ("squirting") | <input type="checkbox"/> Other (give brief detail / label) |

7. In the last 12 months, which of the following pornographic genres did you use most often?

(Multiple answers are possible.).

- S & M (Sadism and Masochism) and B & D (Bondage and Discipline)
- Fetishism
- Bestiality
- Violent/ coercive sexual activities.
- None- I have not watched any of the above in the last 12 months.

E.2. Sexual Scripts Overlap Scale

For great sex, how important are the following for YOU personally:

Please use the following scale to answer each question

- 1 = not at all;
- 2 = somewhat;
- 3 = moderately;
- 4 = a great deal;
- 5 = exceptionally

1. I am always ready for sex
2. My partner is always ready to have sex
3. Sex that includes a variety of sexual acts
4. Free experimenting
5. No forbidden activities, no taboos
6. It is easy to initiate sex
7. Sex is possible in any situation
8. Long foreplay
9. Threesome (ménage à trois)
10. Enacting sexual fantasies
11. Long lasting sex
12. Oral sex
13. Anal sex
14. Use of protection
15. Partner's sexual pleasure
16. Romance
17. Emotions, love
18. Intimate communication
19. After-sex cuddling and tenderness
20. Sex presumes relationship
21. Tender sex
22. Partner has a great body
23. Partner is beautiful
24. Partner is well endowed

25. Shaven genital area
26. Sex that occasionally involves humiliation
27. Sex that occasionally includes coercion
28. Ejaculation on partner's face or body / being ejaculated on
29. Penetration
30. Use of sex toys
31. Sexual role playing
32. Being constantly horny
33. Partner is constantly horny
34. Trust in partner
35. Commitment
36. Intense passion
37. Feeling safe and well-cared for
38. Spontaneity
39. Sexual variety
40. Imagination
41. Unselfishness
42. "Pumping" (fast, vigorous and deep penetration)

For pornographic depiction of sex, how important are the following for YOU personally:

Please use the following scale to answer each question

- 1 = not at all;
- 2 = somewhat;
- 3 = moderately;
- 4 = a great deal;
- 5 = exceptionally

1. Men are always ready for sex
2. Women are always ready for sex
3. Sex that includes a variety of sexual acts
4. Free experimenting

5. No forbidden activities, no taboos
6. It is easy to initiate sex
7. Sex is possible in any situation
8. Long foreplay
9. Threesome (me´nage a` trois)
10. Enacting sexual fantasies
11. Long lasting sex
12. Oral sex
13. Anal sex
14. Use of protection
15. Partner's sexual pleasure
16. Romance
17. Emotions, love
18. Intimate communication
19. After-sex cuddling and tenderness
20. Sex presumes relationship
21. Tender sex
22. Actors/actresses have great bodies
23. Actors/actresses are beautiful
24. Actors/actresses are well endowed
25. Shaven genital area
26. Sex that occasionally involves humiliation
27. Sex that occasionally includes coercion
28. Ejaculation on partner's face or body
29. Penetration
30. Use of sex toys
31. Sexual role playing
32. Men are constantly horny
33. Women are constantly horny
34. Trust in partner

35. Commitment
36. Intense passion
37. Feeling safe and well-cared for
38. Spontaneity
39. Sexual variety
40. Imagination
41. Unselfishness
42. "Pumping" (fast, vigorous and deep penetration)

E.3. Appeal of Sexual Behaviours

Please use the scale below to indicate how appealing you find the following sexual activities:

5=very appealing,

4=appealing,

3=neither appealing nor unappealing

2=unappealing,

1=very unappealing

1. Using a vibrator/sex toy on yourself
2. Having a partner using a vibrator/sex toy on you
3. Receiving oral-genital activity
4. Performing oral-genital activity
5. Receiving manual-anal stimulation
6. Performing manual-anal stimulation
7. Performing anal intercourse [if a female, with a dildo]
8. Watching others have sex on a video
9. In person, watching others have sex
10. Of having sex with more than one person at a time

E.4. Sexual Behaviour

Masturbation is defined here as:

"Manual stimulation of the genital organs (of yourself or another) for sexual pleasure."

Please indicate:

1. The number of times masturbated over last 3 months
2. The number of times masturbated over last 3 months while viewing sexually explicit material
3. The number of people you masturbated in last 3 months
4. The number of people who masturbated you in the last 3 months
5. The number of times you performed oral sex in last 3 months
6. The number of times you received oral sex in the last 3 months
7. The number of times you performed coitus (sexual intercourse) in the last 3 months
8. The number of people you engaged in coitus (sexual intercourse) within the last 3 months
9. In your lifetime, the number of people you performed finger anal stimulation on
10. In your lifetime, the number of people who performed finger anal stimulation on you
11. In your lifetime, the number of people you have engaged in anal intercourse with

E.7. Body Attitudes Questionnaire (Story, 1979)

The following items are related to your body or your functioning.

For each item, encircle the number beneath it that best represents your feelings of satisfaction or dissatisfaction according to the following scale:

1 = strong negative feelings /wish change could somehow be made

2 = don't like, but can put up with

3 = no particular feelings one way or the other

4 = Satisfied

5 = strong positive feelings/ desire no change to be made.

1. Distribution of hair over body
2. Waist
3. body build
4. height
5. age
6. breasts/ chest
7. hips
8. weight
9. mouth and lips
10. thighs
11. stomach
12. naval (belly button)
13. genitals (penis/vagina)
14. buttocks
15. Pubic Hair/region
16. Body Overall

F.2. Revised Sexual Communication Satisfaction Scale

The following items refer to your primary sexual /romantic partner

1 2 3 4 5 6 7

Strongly
Disagree

Neutral

Strongly
Agree

1. I tell my partner when I am especially sexually satisfied.
2. I am satisfied with my partner's ability to communicate her/his sexual desires to me,
3. I do not let my partner know things that I find pleasing during sex
4. I am very satisfied with the quality of our sexual interactions
5. I do not hesitate to let my partner know when I want to have sex with him/her.
6. I do not tell my partner whether or not I am sexually satisfied.
7. I am dissatisfied over the degree to which my partner and I discuss our sexual relationship.
8. I am not afraid to show my partner what kind of sexual behaviour I find satisfying
9. I would not hesitate to show my partner what is a sexual turn-on for me
10. My partner does not show me when she/he is sexually satisfied
11. I show my partner what pleases me during sex
12. I am displeased with the manner in which my partner and I communicate with each other during sex
13. My partner does not show me things she/he finds pleasing during sex
14. I show my partner when I am sexually satisfied
15. My partner does not let me know whether sex has been satisfying or not
16. I do not show my partner when I am sexually satisfied
17. I am satisfied concerning my ability to communicate about sexual matters with my partner
18. My partner shows me by the way she/he touches me if he/she is satisfied
19. I am dissatisfied with my partner's ability to communicate her/his sexual desires to me
20. I have no way of knowing when my partner is sexually satisfied.
21. I am not satisfied in the majority of our sexual interactions.
22. I am pleased with the manner in which my partner and I communicate with each other after sex.