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DO THINKING STYLES PLAY A ROLE IN WHETHER PEOPLE PATHOLOGISE THEIR PORNOGRAPHY USE?

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Foreword

This study was approached from a mixed-methods perspective in order to capture the objective and subjective nuances that exist within an individual's sexual repertoire, specifically within the complex relationship people have with pornography and their pornography use. However, as the study progressed, it became clear that there was too much data to do justice to either approach in one paper. Therefore, the decision was made to separate the components into two discrete papers, but with compatible pragmatic epistemological positions.

To this end, the quantitative paper frames the qualitative paper and as such is presented in this order within volume one of the thesis. Integration of the two components takes place in the discussion and reflective sections. Finally, the researchers intend to submit the two papers for publication in this particular order.

PORTFOLIO ABSTRACT

Introduction: The concept of pornography addiction, although widely accepted, continues to be debated, and as such no diagnostic criteria exist. Opponents and proponents of pornography continue to cite evidence that supports the claim that pornography is either harmful or beneficial, respectively. However, a review of the literature pertaining to pornography use revealed conceptual and methodological shortcomings which limit the conclusions made in the existing literature base. Without adequate research to further our understanding of the complex relationship individuals have with pornography, we risk pathologising or condoning behaviours that are legal and consensual, which may cause distress for some individuals, or even divert attention from deeper issues, such as an individual's thinking styles and feelings of shame. Researchers acknowledge that people's relationship with pornography is complex (Hardy, 1998) and individuals experience it in different ways, for example the time spent viewing pornography, the environment in which they view it, who they view it with, and the genre of pornography they watch (Attwood, 2005; Hald & Malamuth, 2008; Malamuth, Addison, & Koss, 2000; Poulsen, Busby, & Galovan, 2013; Reid, Li, Gilliland, Stein, & Fong, 2011). Given that additional variables may be involved when people pathologise their pornography use, particularly rigidity of thinking (Reid et al., 2009), it is worth investigating such variables further to help discern differences between those who pathologise their pornography use and those who do not.

Aims: The overall aim of this study was to explore whether thinking styles impact on the meaning given to pornography use. The primary objective was to compare participants who perceived their pornography use to be problematic (porn addict) with individuals who did not (non-addict) on the following dependent variables: thinking styles, shame, levels of desirability responding, levels of religiosity, and perceived effects of pornography use. As this was an exploratory approach a two-tailed hypothesis was employed. The secondary objective was to capture in-depth qualitative experiences participants had with pornography, and pornography addiction.

Design: This study used a mixed-method sequential explanatory design (MMSE), using questionnaires to collect quantitative data and interviews to collect qualitative data.

Method: Participants (n=265) were recruited from both UK National Health Service (NHS) and non-NHS sites. For non-NHS participants, the questionnaires were made available online and advertised through social media. NHS recruitment occurred at a specialist sexual health clinic and was advertised using posters displayed in relevant clinical areas. The study predominantly employed a maximum-variation sampling technique. This is a purposive sampling technique used for this research to ensure that an eclectic sample of diverse demographics was captured. Quantitative data was collected using a demographic questionnaire and four validated measures; the Inventory of Cognitive Distortions (Yurica & DiTomasso, 2001), the Test of Self-Conscious Affect-3 (Tangney, Dearing, Wagner, & Gramzow, 2000), the Balanced Inventory of Desirable Responding (Paulhus, 1991; 1998), and the Pornography Consumption Effects Scale (Hald & Malamuth, 2008). All interviews were conducted either through the audio function on Skype© or over the telephone.

Results: Participants reported themselves as belonging to one of three groups; addicts, somewhat addicts, or non-addicts. MANOVA analyses revealed that groups significantly differed in their propensity for cognitive distortions, reported effects of their pornography use, the impact of their religious beliefs, and time spent viewing pornography. Significant differences were not found for the shame scales, or for social desirability. Multinomial logistical regression revealed that negative impact of pornography on participants' lives in general, on their sex life, dysfunctional thinking styles (overall and externalisation of self-worth, magnification and fortune telling, minimisation and arbitrary inferences, and perfectionism), and impact of religious beliefs significantly predicted group

membership. Furthermore, regression analysis supported the hypothesis that thinking styles mediated the relationship between time spent viewing pornography and the overall negative impact of pornography. Qualitative results supported these findings, and thinking styles were revealed to influence the discourses participants had regarding pornography. Primary themes identified were participants' relationship with pornography and perceived causation of pornography addiction, significance of social norms, and impact of expert opinion. Furthermore, although absent in the quantitative findings, the concept of shame was raised as an influential factor in the pathologising of pornography use, thus supporting the notion that a conflict in values, paired with a relatively inflexible cognitive style, may lead to pathologising, and shame will be a product of that process.

Discussion: This study demonstrates the role thinking styles play in how people evaluate their pornography use. Thinking styles both predict whether an individual perceives their pornography use to be problematic or not, and are evident in the discourses people use when discussing their pornography use and the concept of pornography addiction. Specifically, individuals with a propensity for rigid thinking styles are more likely to negatively evaluate their pornography use. Furthermore, the similarities and differences apparent in group comparisons can be understood within a values theoretical framework; it may be that individuals with rigid thinking styles are more likely to endorse particular values that are incongruent with their pornography use behaviours. Conversely, individuals with more flexible thinking styles may be more likely to endorse values which are not incongruent with their pornography use behaviours. This is important from a research and treatment perspective, as it may not be the behaviour itself (pornography use) that is problematic and the target for intervention, but the cognitive framework individuals use in relation to the behaviour. Current treatment offered to those who self-report as pornography addicts often ignore the role of thinking styles and values. In light of this study's findings, thinking styles should be a focus in future research and treatment as it may help to reduce cognitive dissonance and engender agency.

Statement of Contribution

I, Athena Duffy, declare that this thesis is the product of my own original work which I have carried out whilst enrolled on the Trent Doctorate in Clinical Psychology since 2013. I was responsible for obtaining ethical approval, the recruitment of participants, data collection and analysis for the study. I have received regular input and supervision from my supervisors, Dr Roshan das Nair and Dr Dave Dawson, as well as consultative support from Dr Nima Moghaddam, through the development, execution, analysis and interpretation stages, and write up of this research.

QUANTITATIVE JOURNAL PAPER

Do thinking styles play a role in whether people pathologise their pornography use?[1]

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Abstract

The concept of pornography addiction remains controversial and as such there are no diagnostic criteria. However, despite this, individuals present to services with self-perceived problematic pornography use. Current treatment generally focusses on the behaviour, pornography use, yet people's relationship with pornography is complex, and there may be other factors involved. Drawing on the cognitive theoretical literature base, this study aimed to explore whether thinking styles, specifically a propensity for cognitive distortions, shame, and impact of religious beliefs, play an influential role in how people evaluate their pornography use. Self-reported (n=265) pornography addicts, somewhat pornography addicts, and non-addicts were compared on their perceived effects of their pornography use, cognitive distortions, impact of religious beliefs, social desirability, and shame, within the framework of values theory. Findings showed that groups differed significantly in their propensity for cognitive distortions, reported effects of their pornography use, the impact of their religious beliefs, and time spent viewing pornography. Significant differences were not found for the shame scales, or for social desirability. Regression analysis demonstrated that thinking styles mediated the relationship between time spent viewing pornography and the overall negative impact of pornography. These findings have clinical and academic implications; current treatment offered to those who self-report as pornography addicts often ignores the role of thinking styles and values. In light of this study's findings, thinking styles should be a focus in future research and treatment as it may help to reduce cognitive dissonance and engender agency.

Keywords: Pornography; addiction; self-perceived problematic pornography; thinking styles; shame; values.

Introduction

Pornography, or porn, can be defined as "printed or visual material containing the explicit description or display of sexual organs or activity, intended to stimulate sexual excitement" (Dictionary, 2011). However, it is notoriously difficult to achieve an agreed definition; indeed so much so that Justice Potter Stewart (an Associate Justice of the United States Supreme Court) infamously abandoned his attempts to define what constituted *obscenity* (the legal term for explicit and offensive material) and instead proclaimed "I know it when I see it" ("Jacobellis v. Ohio," 1964). Since the advent of the internet, and the shift towards online pornography distribution, consumers have had more ubiquitous access to pornography than at any other time (Poulsen et al., 2013). Some researchers have argued that increased exposure can lead to an increased risk of sexual aggression and reduced sexual and relationship satisfaction for viewers (Malamuth et al., 2000; Poulsen et al., 2013), and furthermore actors taking part in pornography can be vulnerable to being exploited, degraded and sexually racialized (Kendall & Funk, 2008). Others view it as an increased opportunity for natural and beneficial sexual expression (Attwood, 2005, 2010). However, there is insufficient empirical evidence to support either claim (Weinberg, Williams, Kleiner, & Irizarry, 2010) and recent reviews of the literature pertaining to pornography use have identified methodological and conceptual shortcomings (Ferguson & Hartley, 2009; Ley, Prause, & Finn, 2014). Without adequate research to further our understanding of the complex relationship individuals have with pornography, we risk pathologising behaviours which are legal and consensual, condoning behaviours which may cause distress for some individuals, or even diverting attention from deeper issues such as an individual's thinking styles and feelings of shame. Clinically, difficulties may arise when the chosen view-point, which determines the content and extent of treatment offered to those who perceive their pornography use to be problematic, is based on subjective opinion rather than empirical evidence. Therefore, there is a responsibility for professionals to continue to engage with this debate.

Pornography Addiction

Two diagnostic-classification systems are used within the UK; the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5; American Psychiatric Association, 2013) and the International Classification of Diseases, tenth edition (ICD-10; World Health Organisation, 1992). The ICD-10 is most often employed in the UK for diagnosis, yet the DSM-5 is the preferred criteria to test and inform psychological research, theory and practice, and inform the UK's National Institute for Health and Care Excellence (NICE), which provides national guidance and advice to improve health and social care (NICE, 2009).

'Pornography addiction' has not been accepted and classified as a psychological disorder, although research continues to investigate the effects of pornography use as a distinct sexual behaviour (Kafka, 2010). However, given there is no agreed diagnostic category for pornography addiction, there is disagreement amongst researchers regarding its definition, and a plethora of terms are used in this area[2], such as compulsive viewing (Cooper, Galbreath, & Becker, 2004; Young, 2008), impulsive viewing (Shapira et al., 2003), excessive viewing (Pyle & Bridges, 2012), dependence (Cavaglion, 2009), and hypersexual disorder (Kafka, 2010; Kaplan & Krueger, 2010; Reid et al., 2011). How pornography addiction is operationalised therefore often varies between studies, and this influences the conclusions made about the impact of pornography addiction and about whether it

[2] As the authors aim to explore differences in how people perceive their own behaviours, for the purpose of this study, terms relating to 'self-perceived problematic/addictive pornography use' will be used. See section 1.2.1 for more information.

actually exists at all[3]. Indeed, a recent systematic literature review revealed stark disparities between the operational definitions of pornography addiction in different studies (Duffy, Dawson, & das Nair, 2016.). Broadly, definitions related to 'excessive' use and negative consequences of use, yet arbitrary indices of 'excessive' use were often utilised. The variables used to operationalise pornography addiction and its impact were also found to be inadequate and simplistic, and as a result the conclusions made in the studies were often misleading.

Regardless of the status of pornography addiction, individuals continue to seek treatment for their perceived problematic pornography use, separate from their other sexual behaviours (Reid, Harper, & Anderson, 2009; Reid et al., 2011). Despite over 100 years of scientific interest in sexuality and associated problems (Kafka, 2010), reasons for this remain unclear, for example, whether individuals experience a compulsion to behave in particular ways, or whether they pathologise their behaviours in response to negative consequences or feelings of shame. Furthermore, controversies remain regarding the agenda of research conducted and the use of biased definitions (Pope, Voges, Kuhn, & Bloxsome, 2007). Some critics have proposed that research in this area is entrenched in morality and religious values[4] (Ley et al., 2014), and researchers condemn the sexual behaviour, rather than considering how an individual evaluates their sexual behaviour as problematic. Viewing innate desires and behaviours against a backdrop of dominant moral and religious standards can be disempowering and shaming for some individuals (Ley et al., 2014). Indeed, it was not in the distant past that in the Western world 'homosexuality' was considered abnormal based on dominant views about such sexuality, however with rigorous research and advocacy homosexuality has ceased to be considered a pathology. This demonstrates how the impact of cultural discourse, in the absence of research, can shape views and actions (sanctions) related to sexual practices that appear too subversive.

Moreover, pioneering research (Kinsey, Pomeroy, & Martin, 1949) suggested our individual desires and behaviours are likely to differ from those deemed acceptable as a society, yet we continue to judge them as one and the same. When we view *individual* behaviours through a societal lens and place *global* sanctions on them, we may run the risk of pathologising subversive, but largely 'normal' non-coercive, behaviours. In addition, such an approach does not elucidate why some individuals can view pornography without perceiving it to be problematic, whilst others are distressed by their pornography use and seek treatment. Indeed, Kohut, Baer, and Watts (2015) highlighted that research related to pornography use often assumes that pornography addiction and broader negative effects are caused by the content of pornography alone (Arbour & Ginis, 2006; Murnen, Smolak, Mills, & Good, 2003), with relatively little research investigating how pornography users evaluate their pornography use and associated effects. Therefore, it is essential that attention is paid to individual factors that may be contributing to these differences, rather than assuming pornography itself has caused an individual to become a 'pornography addict', in order to develop appropriate treatment and disentangle misconceptions (Ley et al., 2014).

Theoretical Framework: Value Theory[5]

Perceived norms and values are central to various behaviours, meaning-making of these behaviours, and for understanding social-psychological phenomena (Schwartz & Bardi, 2001), including sexual behaviours (Goodwin et al., 2002). Research has shown that we hold a

[3] For more information please see section 1.2.3
[4] See section 1.4 in extended paper for further details on religiosity.
[5] See section 1.3 in extended paper for further details on values theory.

comprehensive, integrated and stable set of motivational values (see appendix A) which represent goals that apply across contexts and time and relate to fundamental, universal needs (Bardi & Schwartz, 2003); biological needs, requisites of coordinated social interaction, and demands of group survival and functioning (Schwartz, 2013). These values vary in their importance but apply across cultures and are expressed and/or pursued through people's behaviours.

The motivation and pursuit of each value has psychological, practical, and social consequences that may conflict or be congruent with the pursuit of other values (Bardi & Schwartz, 2003). The values and associated behaviours can be organised to reflect two overarching and conflicting dimensions (see Appendix B): 'openness to change' vs 'conservation', and 'self-transcendence' vs 'self-enhancement'. Pursued values situated at opposing dimensions are more likely to conflict with each other than values pursued from the same dimension. However, values are generally not conscious except in the presence of conflicting value-expressive behaviours (Schwartz, 2013). For example, some individual's pornography use, as a behaviour expressing a hedonistic value, may lead to psychological pleasure, increased online expenditure, and reduced social activity. One or more of these consequences in turn may conflict with the pursuit of other values, for example, the socially-related 'conformity' value. Furthermore, consequences particular to pornography use, such as ejaculation, may serve to reinforce the behaviour (Abramson & Pinkerton, 1995) and, for those individuals who are conflicted, compound feelings of guilt and shame.

Values inform the evaluations we make about the self, others, behaviours and events (Schwartz, 2012). A wealth of previous studies have found that if people and/or situations promote our values and related goals they are evaluated positively, whereas if they threaten the attainment of valued goals, they are evaluated negatively (Eccles & Wigfield, 2002). This process is further facilitated by our thinking styles, such as cognitive flexibility. Cognitive flexibility is "the person's awareness that various situations and options may exist, the person's willingness to be flexible and adapt, and the person's belief about their self-efficacy in being flexible" (Hamtiaux & Houssemand, 2012, p. 565). Low cognitive flexibility is linked to rigidity, structure, rule adherence, and inflexibility regarding beliefs and attitudes towards behaviours (Hamtiaux & Houssemand, 2012). Indeed, rigid and dichotomous thinking dispositions have been evidenced in sexual addictive discourses relating to morally 'good' versus 'bad' sex (Irvine, 1995; Keane, 2002). Using the theory to understand pornography addiction, if an individual's sexual behaviour conflicts with their inflexible beliefs, attitudes, and values, they may assign negative meaning to their pornography use. Research has shown this dissonance between behaviours and values can lead to distress and pathologising of behaviours (Musick, Blazer, & Hays, 2000).

A plethora of research has demonstrated that cognitions greatly influence how we interpret situations and events (Beck, Freeman, & Davis, 2004; Millon & Davis, 1996). According to cognitive theorists, the *content* and *process* of these cognitions are associated with the particular activity (Beck, Rush, Shaw, & Emery, 1979). If someone resides within a community or culture in which the dominant discourse is that pornography is deviant (Attwood, 2007), they may interpret their pornography viewing as breaking an implicit rule and have thoughts such as "I shouldn't be watching porn" (*content*). Individuals with rigid thinking styles may also hold particular biases in the way they consider their pornography use, such as increased salience (Haselton, Nettle, & Andrews, 2005), whereby more weight is given to the times they use pornography than to the times when they are not using pornography (*process*), thus exacerbating their anxiety and conflict about that behaviour.

However, thinking styles are not pervasive to all situations, which raises the question of what it is about pornography use in particular. Dweck, Chiu, and Hong (1995) described people as having

certain implicit theories which serve as an analytic framework through which information is encoded, interpreted and responded to. These theories relate to people's assumptions about whether personal attributes are fixed (entity theorist) or malleable (incremental theorist). Each of the two assumptions has cognitive and behavioural consequences. Furthermore, such a cognitive style is not generalised but domain-specific. To illustrate, an individual who believes morality is a fixed trait may perceive their pornography use within that context (i.e. as a moral issue), whereas someone who believes morality is dynamic may be more likely to understand pornography-use behaviours as related to the user's "needs, goals, intentions, emotional states, [and/or] prior behaviours" (Dweck et al., 1995, p. 268). Whether individuals believe human attributes are fixed or malleable can also be understood as a core assumption from which implicit rules such as 'shoulds, oughts, and musts' are derived (Kovacs & Beck, 1978), and is analogous to Kelly's (1977) superordinate construct which proposes that assumptions define an individual's reality and create meaning.

As with Beckian cognitive theories, particular implicit theories, or assumptions, can lead to particular coping styles (Dweck et al., 1995). For instance, an individual who negatively evaluates their pornography use and who holds the assumption that their personal attributes (e.g. morality) are fixed is more likely to feel helpless, whereas an individual holding the assumption that their personal attributes are malleable is more likely to believe in and pursue change. This is important for treatment given that hopelessness has been shown to mediate emotional wellbeing and treatment efficacy (Brent et al., 1998).

Clinical Implications[6]

Researchers acknowledge that people's relationship with pornography is complex (Hardy, 1998) and individuals experience it in different ways, for example, the time spent viewing pornography, the environment in which they view it, who they view it with, and the genre of pornography they watch (Attwood, 2005; Hald & Malamuth, 2008; Malamuth et al., 2000; Poulsen et al., 2013; Reid et al., 2011). Given that additional variables may be involved when people pathologise their pornography use, particularly rigidity of thinking (Reid et al., 2009), it is worth investigating such variables further to help discern differences between those who pathologise their pornography use and those who do not. This is important from a research and treatment perspective, as it may not be the behaviour itself (pornography use) that is problematic and the target for intervention, but the cognitive framework individuals use in relation to the behaviour. In addition, the stage of life an individual is in may implicate the type of intervention used. For example, if an individual is at a stage where others are dependent on them, they or their significant others, may perceive pornography use as having a wider impact on them, therefore, interventions may need to adopt a broader, systemic approach as cognitive interventions alone may be inadequate.

Indeed, current clinical practices which address pornography use are not based on evidence or theory (Cash 2012; Ley et al., 2014). Research should address this by investigating whether thinking styles, as identified in both the theoretical literature and clinical experience, affect whether people pathologise their pornography use. For instance, theoretically, clinicians may support 'detoxification': there are approaches to this (e.g., 12-step models) but they may have paradoxical effects (e.g., increasing shame) and it is not clear that the behaviour itself (pornography use) is problematic/'toxic'. Instead, resources may be more effective directed towards alternate interventions that explore the way individuals develop their views and understanding of the self and others. One such alternative may be to work with thinking styles. If rigidity, inflexibility, and shame are linked with pathologising

[6] See section 1.8 for further details regarding clinical implications.

pornography use then treatment recommendations to address cognition styles and shame can be made, for instance, the role of compassion, challenging of assumptions, undermining problematic rule governance, diffusion, value clarification, and acceptance.

The notion that unhelpful thinking styles can change and be addressed in treatment is important to this study[7]. If beliefs and attitudes impact on the way we view and adapt to our environment, then they may impact on the meaning we give to behaviours. Individuals with strict, rule-governed and moralistic attitudes may be more susceptible to shame and guilt. This study aims to explore whether these broader attitudes impact on the meaning given to pornography use. Therefore, this study compared individuals who self-reported as pornography addicts (addicts), somewhat problematic pornography users (somewhat-addicts) and those who did not perceive their pornography use to be problematic (non-addicts) on various sexual behaviours and psychological variables: thinking styles, shame, desirability responding, levels of religiosity, and perceived effects of pornography use[8].

Method

Participants (n=265) were provided with an information sheet about the study and were required to provide consent and confirm that they were above 18 years of age before continuing with the study. Following this, participants were asked demographic questions, after which four measures were made available to complete. Recruitment occurred at both UK National Health Service (NHS) and non-NHS sites. For non-NHS participants, the questionnaires were made available online and advertised through social media. NHS recruitment occurred at a specialist sexual health clinic and was advertised using posters displayed in relevant clinical areas. The investigator informed participants of all aspects pertaining to participation in the study.

Participants

Eligibility criteria included the requirement that all participants were capable of providing informed consent. Due to the sensitive nature of the study, we only included those over 18 years of age and used pornography that is considered legal in the participants' country. However, the researchers acknowledge that some individuals may not restrict their viewing to only legal or illegal material. There was no maximum age. Participants of all sexual orientations and genders were invited to participate. Participants were required to read and write English. At the end of the online survey, participants were presented with the option of participating in a qualitative study (reported in Duffy, Dawson, & das Nair, in prep.).

Deleted: Chapter Two

Measures[9]

Quantitative data were collected using a demographic questionnaire and four validated measures. Embedded within the study's text was a definition of 'pornography'. 'Pornography addiction' was not defined as the participant's subjective understanding and experience was of primary interest. Total completion time was approximately 20 minutes.

Demographic Questions The questionnaire about demographics and pornography-use characteristics was developed through an analysis of related literature. Therefore, demographic

[7] See section 1.5 in extended paper for further details on thinking styles.
[8] For ease of reference, participants may be referred to as addicts, somewhat-addicts, and non-addicts in the body of text. This is not to suggest that the authors subscribe to the notion of an addiction model and refers to the participant's self-identified addiction status.
[9] See section 1.7 in extended paper for further details on the measures used.

information relating to participants' age, number of partners in the last year, sexual orientation, the top five viewed pornography activities, sexual act performed whilst watching pornography, relationship status, the amount of time spent viewing pornography, age participants first had sex, and the percentage of participants who have not had sex, was collated (as presented in Table 1). Mainly with tick-boxes for ease of completion, each item also had an optional text box for participants to provide additional qualitative data.

Given that research suggests that level of religiosity is associated with seeking treatment for pornography use and its conflict with religious values (Twohig et al., 2009; Winters et al,. 2010), we asked participants to rate how much their religious beliefs impacted on their day-to-day life using a 4-point Likert-scale (1=not at all, 4=very much).

The Inventory of Cognitive Distortions (ICD; Yurica & DiTomasso, 2001) is a 69-item measure of cognitive distortions based on 11 factors which emerged from the original factor analysis. Participants rated agreement with statements such as "I have a tendency to blame myself for bad things" using a 5-point Likert-scale (1 = never think or feel this way, 5 = always think or feel this way). Uhl (2007) reported high internal consistency (α=.97) for this measure. Higher scores indicate a higher frequency of dysfunctional cognitive processes such as rigidity of thinking.

The Test of Self-Conscious Affect-3 (TOSCA-3; Tangney, Dearing, Wagner & Gramzow, 2000) uses 15 scenarios to assess shame-proneness, guilt-proneness, externalization, and detachment/unconcern. Participants rate their responses for each scenario using a 5-point Likert-scale (1=not likely, 5=very likely).

Reliability coefficients for the TOSCA-3 subscales range from .60 to .80 (Tangney & Dearing, 2002; Wolf et al., 2010). Higher scores of each component indicate higher levels of those components.

The Balanced Inventory of Desirable Responding (BIDR-6; Paulhus, 1991; 1998) was used to minimise the potential effects that social desirability and impression management may have on the disclosure of sensitive sexual information (Meston, Heiman, Trapnell, & Paulhus, 1998). Given that those who pathologise their sexual behaviours may do so because they perceive them to be outside of social norms, accounting for this bias is imperative (Guerra et al., 2012). Various scales measure response biases related to social desirability; the BIDR-6 was used as it is recommended for research and measures both self-deception and self-denial (Loo & Loewen, 2004; Paulhus, 1991; 1998; 2002).

The BIDR-6 comprises 40 items that assess whether an individual's response style is likely to be distorted by social desirability or impression management. Participants rate agreement with statements such as "I have not always been honest with myself" using a 7-point Likert-scale (1=not true, 7=very true). Paulhus (1991) found good reliability for the self-deceptive enhancement subscale (α=.68-.80) and for impression management (α=.75-.86). Higher scores indicate higher levels of social desirability or impression management.

Pornography Consumption Effects Scale (PCES; Hald & Malamuth, 2008) uses 47 items to measure self-perceived positive and negative effects of pornography use on sexual behaviours and attitudes. Participants rate agreement to statements such as "To what extent do you believe that your consumption of pornography: Has taught you new sexual techniques?" using a 7-point Likert-scale (1=not at all, 7=to an extremely large extent). Reliability coefficients for the PCES and its subscales range from .82 to .91 (Hald & Malamuth, 2008). An overall Positive Effect Dimension (PED) and Negative Effect Dimension (NED) were measured based on the following constructs: sex life, life in general, perception of and attitudes towards the opposite gender, attitudes towards sex, and sexual

knowledge. For the purpose of this study, an additional construct, perception of and attitudes towards the same gender, was created to accommodate participants of varying sexual orientation. Higher scores indicate a stronger expression of the constructs.

Results

Participants (n=265) were divided into three groups: Group 1 - people who self-defined as having problematic pornography use (addicts), Group 2 - people who identified themselves as having 'somewhat' problematic pornography use (somewhat-addicts), and Group 3 - people who did not identify themselves as having a problematic pornography use (non-addicts). Demographic data are shown in Table 1. Groups did not significantly differ in their relationship status or for gender overall, although there were significantly more male addicts than females.

***Table 1*. Demographic Information sorted by Addiction Status and Gender.**

	Top 5 Viewed Pornography Activities*	Top Act Whilst Watching Pornography	Previous Sexual Experience	Relationship Status**	Sexual Orientation ***
Reported Addiction Status and Gender					
Non-addicts (n=184) (mean age=27; range=18-64)	Lesbian (52%) Amateur (48%) Threesome (41%) Anal (35%) BDSM (30%)	Masturbate (76%)	Mean age=18 (30%) 19% have never had sex	Single (40%) Monogamous relationship (38%) Married (16%) Non-monogamous relationship (4%)	72% Heterosexual 16% Bisexual 7% Lesbian/Gay
Somewhat-addicts (n=34) (mean age=28; range=18-60)	Amateur (53%) Lesbian (35%) Anal (33%) Hard-core (32%) Blowjob (30%) Gangbang (30%) Gay (30%)	Masturbate (77%)	Mean age=18 (27%) 21% have never had sex	Single (50%) Monogamous relationship (24%) Married (18%) Non-monogamous relationship (9%)	82% Heterosexual 15% Bisexual 3% Lesbian/Gay

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	Addicts (n=47) (mean age=28 range=18-58)	Lesbian (62%) Amateur (60%) HD Pornography (57%) Pornstar (49%) Blowjob (45%)	Masturbate (87%)	Mean age=16 or 18 (13%) 17% have never had sex	Single (62%) Married (21%) Monogamous relationship (13%)	92% Heterosexual 4% Bisexual 2% Lesbian/Gay
	Female (n=112)	Lesbian (51%) Threesome (42%) For Women (38%) BDSM (34%) Masturbation (30%)	Masturbate (66%)	Mean age=24 (24%) 10% have never had sex	Monogamous relationship (44%) Single (37%) Married (14%) Non-monogamous relationship (5%)	
	Male (n=153)	Amateur (59%) Lesbian (52%) Anal (44%) HD Pornography (39%) POV (37%)	Masturbate (86%)	Mean age=18 (18%) 16% have never had sex	Single (52%) Monogamous relationship (23%) Married (19%) Non-monogamous relationship (4%)	
Total						
	(n=265) (mean age=27; age	Lesbian (52%) Amateur (52%)	Masturbate (78%)	Mean age=18 (17%)	Single (45%) Monogamous relationship (38%)	

	range=18-64)	Threesome (39%) Anal (36%) Blowjob (32%)	13% have never had sex	Married (17%) Non-monogamous relationship (4%)

Note. * Participants were able to provide multiple responses and so percentages do not equate to a total of 100.

**Due to rounding percentages do not total 100%.

*** The majority of participants had one partner in the last year.

Principal Components Analysis (PCA)

In order to assess how the ICD best fit the sample, a PCA was conducted. Analysis yielded statistically significant findings for the internal structure of the scale. Five factors were ultimately retained (externalisation of self-worth; magnification and fortune telling; minimisation and arbitrary inferences; perfectionism; emotional reasoning).

Group Differences[10]

A one-way ANOVA was conducted to compare the effect of group membership (independent variable [IV]: reported addiction status) on the monthly average amount of time spent viewing pornography (dependent variable [DV]: time spent viewing pornography). There was a significant effect of reported problematic pornography use on time spent watching pornography ($F_{(2, 258)}$=24.27; p<.001). Post-hoc comparisons using the Tukey HSD test indicated that addicts were significantly more likely to view pornography for a longer period of time (M=1934.33, SD=1602.90) when compared to non-addicts (M=240.42, SD=345.48) and somewhat-addicts (M=717.79, SD=994.76). There were no significant differences in viewing times between non-addicts and somewhat-addicts. In other words, these results suggest that the more time spent watching pornography, the more likely people were to identify as a problematic pornography user.

To assess for group differences (IV: reported addiction status) between the five measures (DVs: PCES, TOSCA, BIDR-6, ICD, and impact of religious beliefs), a MANOVA was conducted. Of the overall differences between groups, the ICD and PCES measures, and the impact of religious beliefs variable yielded significant results (Wilks' λ=0.374; $F_{(21, 243)}$=19.36; p < 0.001). Table 2 shows that group membership had a statistically significant effect on whether participants reported positive ($F_{(2, 262)}$=5.81; p <.005; partial η2=42), or negative effects of pornography consumption on their life in general ($F_{(2, 262)}$=36.24; p < .001; partial η2=.58). How participants viewed their pornography use also related to whether they viewed members of the opposite sex more negatively ($F_{(2, 262)}$=25.97; p < .001; partial η2=.17), viewed members of the same sex more negatively ($F_{(2, 262)}$=15.19; p < .001; partial η2=.10), or held negative attitude towards sex ($F_{(2, 262)}$=62.03; p < .001; partial η2=.32). There was also a significant relationship between group membership and reported positive effects ($F_{(2, 262)}$=5.78; p < .05; partial η2=.04), and negative effects of pornography of participants sex life ($F_{(2, 262)}$=133.94; p < .001; partial η2=.51). Furthermore, self-reported level of problematic pornography use was significantly related to whether pornography consumption had an overall negative effect ($F_{(2,}$

[10] For further information regarding group difference analyses please see section 3.1.2 of the extended paper.

$_{262)}$=141.40; p < .001; partial η2=.52). Lastly, self-defined pornography use was significantly associated with participants' thinking styles, specifically their total ICD scores ($F_{(2, 262)}$=23.33; p < .001; partial η2=.15) and each of the five factors, and how much religious beliefs affected their daily lives ($F_{(2, 262)}$=13.07; p < .05; partial η2=.09). Significant differences were not found for the shame scales (as measured by the TOSCA-3), or for social desirability or impression management (as measured on the BIDR-6).

***Table 2*. Significant Multivariate Effects of Self-Reported Addiction Status.**

Dependent Variable	Mean Square	df	F	Sig.	Partial Eta Squared	Observed Power
Positive effects of pornography on life in general (PCES)	10.125	2	*5.81	.003	.042	.87
Negative effects of pornography on life in general (PCES)	36.24	2	**16.3	.001	.577	1.00
Negative perceptions of members of the opposite sex (PCES)	48.01	2	**25.97	.001	.165	1.00
Negative perceptions of members of the same sex (PCES)	22.99	2	**15.19	.001	.104	1.00
Negative attitudes towards sex (PCES)	70.79	2	**62.03	.001	.321	1.00
Positive effects on sex life (PCES)	13.10	2	*5.78	.003	.042	.87
Negative effects on sex life (PCES)	109.52	2	**133.94	.001	.506	1.00
Total negative effects score (PCES)	123.59	2	**141.42	.001	.519	1.00
Total cognitive distortions (ICD)	46019.38	2	**23.33	.001	.151	1.00
Externalisation of self-worth (ICD)	15244.60	2	**22.25	.001	.145	1.00
Magnification and fortune-telling (ICD)	2105.77	2	**12.73	.001	.089	.997
Minimisation and arbitrary inferences (ICD)	931.80	2	**24.16	.001	.156	1.00
Perfectionism (ICD)	747.56	2	**12.01	.001	.084	.995
Emotional Reasoning (ICD)	171.45	2	*6.50	.002	.047	.905
How much do your religious beliefs affect your daily life?	10.804	2	**13.07	.001	.091	1.00

Note. PCES=Porn Consumption Effects Scale. ICD=Inventory of Cognitive Distortions scale.

* Significant at the p<0.05 level

** Significant at the p<0.001 level

Post-hoc Analyses

Given the statistically significant MANOVA test, *post-hoc* univariate tests were conducted (see Table 3). Specifically, ANOVA tests were conducted on all 15 significant contrasts to assess the direction of significant effects. Traditionally, Bonferroni corrections are advised to counteract the Type I error rates that result from carrying out multiple tests, however, many researchers argue that doing so is unnecessary and potentially deleterious to analysis; its interpretation is arbitrary and its performance can reduce power and increase the likelihood of Type II errors (Perneger, 1998).

***Table 3*. Comparison of Mean Scores for Participants Who Perceived Their Pornography Use to be Problematic, Somewhat Problematic, and Not Problematic.**

Variable	Group						*F*	Eta-squared.
	Non-addicts		Somewhat-addicts		Addicts			
	Mean	SD	Mean	SD	Mean	SD		
Positive effects of pornography on life in general (PCES)	2.50	1.29	2.56	1.44	1.79	1.33	*5.81	.04
Negative effects of pornography on life in general (PCES)	1.51	.87	2.97	1.51	5.15	1.88	**178.50	.58
Negative perceptions of members of the opposite sex (PCES)	1.85	1.14	2.62	1.37	3.50	2.00	**25.97	.17
Negative perceptions of members of the same sex (PCES)	1.89	1.09	2.35	1.28	2.98	1.66	**15.19	.10
Negative attitudes towards sex (PCES)	1.61	.91	2.32	1.17	3.53	1.49	**62.03	.32
Positive effects on sex life (PCES)	3.20	1.50	3.03	1.49	2.36	1.55	*5.78	.04
Negative effects on sex life (PCES)	1.63	.76	2.32	.91	4.04	1.33	**133.94	.51
Total negative effect score (PCES)	1.52	.78	2.41	.89	4.06	1.40	**141.40	.52
Total cognitive distortions (ICD)	168.40	44.04	185.38	39.40	217.60	49.08	**23.33	.15

Externalisation of self-worth (ICD)	83.05	1.93	91.82	4.49	111.47	3.82	**22.25	.15
Magnification and fortune-telling (ICD)	24.36	.67	26.38	1.56	31.85	1.33	**12.73	.09
Minimisation and arbitrary inferences (ICD)	15.27	.32	17.88	.75	20.04	.641	**24.16	.16
Perfectionism (ICD)	19.71	.41	22.29	.96	23.92	.81	**12.00	.08
Emotional Reasoning (ICD)	13.03	.27	13.35	.62	15.17	.53	**6.50	.05
How much do your religious beliefs affect your daily life?	1.43	.79	1.97	1.11	2.11	1.15	**13.07	.09

Note. PCES=Porn Consumption Effects Scale. ICD=Inventory of Cognitive Distortions scale.

* Significant at the p<0.05 level

** Significant at the p<0.001 level

Post-hoc Tukey HSD analyses (see Table 4) showed that addicts were significantly more likely to report higher negative effects of pornography use than somewhat-addicts and non-addicts. The same group were also more likely to display increased dysfunctional thinking styles (as measured by the ICD) and experience a greater impact of their religious beliefs.

Table 4. **Differences between Mean Scores for Participants Who Perceived Their Pornography Use to be Problematic, Somewhat Problematic, and Not Problematic.**

Life in general - positive

					95% Confidence Interval	
(I) Self-reported addiction status	**(J) Self-reported addiction status**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**Lower Bound**	**Upper Bound**
Non-addicts	Somewhat-addicts	-.06	.246	.969	-.64	.52
	Addicts	*.71	.216	.003	.20	1.22
Somewhat-addicts	Non-addicts	.06	.246	.969	-.52	.64
	Addicts	*.77	.297	.027	.07	1.47
Addicts	Non-addicts	*-.71	.216	.003	-1.22	-.20
	Somewhat-addicts	*-.77	.297	.027	-1.47	-.07

Life in general - negative						
Non-addicts	Somewhat-addicts	**-1.46	.223	.001	-1.99	-.93
	Addicts	**-3.64	.196	.001	-4.10	-3.18
Somewhat-addicts	Non-addicts	**1.46	.223	.001	.93	1.99
	Addicts	**-2.18	.269	.001	-2.81	-1.54
Addicts	Non-addicts	**3.64	.196	.001	3.18	4.10
	Somewhat-addicts	**2.18	.269	.001	1.54	2.81
Perception of opposite sex – negative						
Non-addicts	Somewhat-addicts	*-.76	.254	.008	-1.36	-.17
	Addicts	**-1.55	.222	.001	-2.07	-1.03
Somewhat-addicts	Non-addicts	*.76	.254	.008	.17	1.36
	PAs	*-.79	.306	.029	-1.51	-.07
Addicts	Non-addicts	**1.55	.222	.001	1.03	2.07
	Somewhat-addicts	*.79	.306	.029	.07	1.51
Perception of same sex - negative						
Non-addicts	Somewhat-addicts	-.46	.230	.112	-1.00	.08
	PAs	**-1.09	.201	.001	-1.56	-.61
Somewhat-addicts	Non-addicts	.46	.230	.112	-.08	1.00
	Addicts	-.63	.277	.063	-1.28	.03
Addicts	Non-addicts	**1.09	.201	.001	.61	1.56
	Somewhat-addicts	.63	.277	.063	-.03	1.28
Attitudes towards sex - negative						
Non-addicts	Somewhat-addicts	**-.72	.199	.001	-1.18	-.24
	Addicts	**-1.92	.175	.001	-2.33	-1.51
Somewhat-addicts	Non-addicts	**.72	.199	.001	.24	1.18
	Addicts	**-1.21	.241	.001	-1.78	-.64
Addicts	Non-addicts	**1.92	.175	.001	1.51	2.33
	Somewhat-addicts	**1.21	.241	.001	.64	1.78
Sex life - positive						
Non-addicts	Somewhat-addicts	.17	.282	.815	-.49	.84

	Addicts	*.84	.247	.002	.26	1.42
Somewhat-addicts	Non-addicts	-.17	.282	.815	-.84	.49
	Addicts	.67	.340	.123	-.13	1.47
Addicts	Non-addicts	*-.84	.247	.002	-1.42	-.26
	Somewhat-addicts	-.67	.340	.123	-1.47	.13
Sex life - negative						
Non-addicts	Somewhat-addicts	**-.69	.169	.001	-1.09	-.30
	Addicts	**-2.41	.148	.001	-2.76	-2.06
Somewhat-addicts	Non-addicts	**.69	.169	.001	.30	1.09
	Addicts	**-1.72	.204	.001	-2.20	-1.24
Addicts	Non-addicts	**2.41	.148	.001	2.06	2.76
	Somewhat-addicts	**1.72	.204	.001	1.24	2.20
Total negative effect score (PCES)						
Non-addicts	Somewhat-addicts	**-.90	.175	.001	-1.31	-.48
	Addicts	**-2.55	.153	.001	-2.91	-2.19
Somewhat-addicts	Non-addicts	**.90	.175	.001	.48	1.31
	Addicts	**-1.65	.210	.001	-2.15	-1.16
Addicts	Non-addicts	**2.55	.153	.001	2.19	2.91
	Somewhat-addicts	**1.65	.210	.001	1.16	2.15
ICD TOTAL						
Non-addicts	Somewhat-addicts	-16.98	8.292	.103	-36.52	2.56
	Addicts	**-49.19	7.259	.001	-66.30	-32.08
Somewhat-addicts	Non-addicts	16.98	8.292	.103	-2.56	36.52
	Addicts	*-32.21	10.000	.004	-55.79	-8.64
Addicts	Non-addicts	**49.19	7.259	.001	32.08	66.30
	Somewhat-addicts	*32.21	10.000	.004	8.64	55.79
Externalisation of self-worth (ICD)						
Non-addicts	Somewhat-addicts	-8.77	4.89	.173	-20.29	2.75
	Addicts	**-28.41	4.28	.001	-38.50	-18.33
Somewhat-addicts	Non-addicts	8.77	4.89	.173	-2.75	20.29

	Addicts	*19.64	5.89	.003	-33.54	-5.75
Addicts	Non-addicts	**28.41	4.28	.001	18.33	38.50
	Somewhat-addicts	*19.64	5.89	.003	5.75	33.54
Magnification and fortune-telling (ICD)						
Non-addicts	Somewhat-addicts	-2.02	1.70	.461	-6.02	1.98
	Addicts	**-7.49	1.49	.001	-10.99	-3.98
Somewhat-addicts	Non-addicts	2.02	1.770	.461	-1.98	6.02
	Addicts	*-5.47	2.05	.022	-10.30	-.64
Addicts	Non-addicts	**7.49	1.49	.001	3.98	10.99
	Somewhat-addicts	*5.47	2.05	.022	.64	10.30
Minimisation and arbitrary inferences (ICD)						
Non-addicts	Somewhat-addicts	*-2.61	.82	.005	-4.54	-.68
	Addicts	**-4.77	.72	.001	-6.46	-3.08
Somewhat-addicts	Non-addicts	*2.61	.82	.005	.68	4.54
	Addicts	-2.16	.99	.076	-4.49	.17
Addicts	Non-addicts	**4.77	.71	.001	3.08	6.46
	Somewhat-addicts	2.16	.99	.076	-.17	4.49
Perfectionism (ICD)						
Non-addicts	Somewhat-addicts	*-2.58	1.04	.037	-5.03	-.12
	Addicts	**-4.20	.91	.001	-6.35	-2.05
Somewhat-addicts	Non-addicts	*2.58	1.04	.037	.12	5.03
	Addicts	-1.62	1.26	.402	-4.58	1.34
Addicts	Non-addicts	**4.20	.91	.001	2.05	6.35
	Somewhat-addicts	1.62	1.26	.402	-1.34	4.58
Emotional Reasoning (ICD)						
Non-addicts	Somewhat-addicts	-.32	.68	.884	-1.92	1.28
	Addicts	**-2.14	.59	.001	-3.54	-.74
Somewhat-addicts	Non-addicts	.32	.68	.884	-1.28	1.92
	Addicts	-1.82	.82	.069	-3.74	.11
Addicts	Non-addicts	**2.14	.59	.001	.74	3.54

	Somewhat-addicts	1.82	.82	.069	-.11	3.74
How much do your religious beliefs affect your daily life?						
Non-addicts	Somewhat-addicts	*-.54	.170	.005	-.94	-.14
	Addicts	**-.67	.149	.001	-1.02	-.32
Somewhat-addicts	Non-addicts	*.54	.170	.005	.14	.94
	Addicts	-.14	.205	.785	-.62	.35
Addicts	Non-addicts	**.67	.149	.001	.32	1.02
	Somewhat-addicts	.14	.205	.785	-.35	.62

Note. PCES=Porn Consumption Effects Scale. ICD=Inventory of Cognitive Distortions scale.

* Significant at the p<0.05 level

** Significant at the p<0.001 level

Somewhat-addicts reported similar scores for two of the PCES subscales (positive effect of pornography on life in general; perceptions of the same sex), and for the ICD total score, as non-addicts. However, they were not significantly different from addicts in how much their religious beliefs impacted on their daily lives. For all other measures, somewhat-addicts differed significantly from the other two groups.

Multinomial Regression

Multinomial logistic regression (MLR) is well suited for testing the relationship between a categorical dependent variable and one or more categorical or continuous independent variables. Therefore, this approach was used to examine which measures (IV) predicted group membership (DV). Participants who defined themselves as addicts or somewhat-addicts were contrasted with non-addicts[11].

A chi-square test was performed to determine whether the different IVs were equally preferred (see Table 5). Preference for the IVs was not equally distributed in the population, X^2 ($_{20}$, N = 193.53) = 4.53, p < .05. This showed that self-reported addiction status could be predicted using the independent variables (see Table 6).

Table 5. **Model Fitting Information: Group Membership**

Model fitting information				
Model	**-2 log likelihood**	**Chi-square**	**Df**	**Sig.**
Intercept only	436.45			
Final	223.03	213.43	30	.001

[11] Sensitivity analyses were performed with different contrast groups to ensure that overall findings were robust.

Table 6. **Multinomial Logistic Regression Analysis of Participants' Thinking Styles and Effects of Pornography Use.**

Predictor		B	SE β	Wald's χ2 (df=1)	*Df*	Predictor β (odds ratio)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
Somewhat-addicts								
	Positive effects of pornography on life in general (PCES)	.157	.203	.595	1	1.169	.786	1.741
	Negative effects of pornography on life in general (PCES)	1.028	.333	9.524	1	2.794*	1.455	5.367
	Negative perceptions of members of the opposite sex (PCES)	.161	.224	.513	1	1.174	.756	1.824
	Negative perceptions of members of the same sex (PCES)	-.043	.207	.043	1	.958	.639	1.437
	Negative attitudes towards sex (PCES)	-.266	.344	.595	1	.767	.390	1.506
	Positive effects on sex life (PCES)	-.177	.199	.796	1	.838	.568	1.236
	Negative effects on sex life (PCES)	.013	.467	.001	1	1.013	.406	2.527
	PCES Total Negative Score (PCES)	-.120	.657	.034	1	.887	.245	3.213
	Cognitive distortions (ICD)	-.094	.123	.586	1	.910	.715	1.159
	Externalisation of self-worth (ICD)	.104	.126	.674	1	1.109	.866	1.420
	Magnification and fortune telling (ICD)	.053	.143	.139	1	1.054	.797	1.394
	Minimisation and arbitrary inferences (ICD)	.250	.158	2.487	1	1.284	.941	1.751

	Perfectionism (ICD)	.197	.148	1.783	1	1.218	.912	1.628
	Emotional Reasoning (ICD)	.014	.169	.007	1	1.014	.728	1.413
	How much do your religious beliefs affect your daily life?	.431	.242	3.172	1	1.539	.958	2.475
Addicts								
	Positive effects of pornography on life in general (PCES)	-.177	.333	.283	1	2.863	.436	.436
	Negative effects of pornography on life in general (PCES)	.687	.390	3.102	1	.837	.925	.925
	Negative perceptions of members of the opposite sex (PCES)	.001	.309	.001	1	1.988	.546	.546
	Negative perceptions of members of the same sex (PCES)	.223	.266	.702	1	1.001	.742	.742
	Negative attitudes towards sex (PCES)	-.819	.469	3.051	1	1.250	.176	.176
	Positive effects on sex life (PCES)	-.339	.270	1.579	1	.441	.420	.420
	Negative effects on sex life (PCES)	1.612	.667	5.840	1	.712	1.356	1.356
	PCES Total Negative Score (PCES)	.558	.965	.335	1	5.010	.264	.264
	Cognitive distortions (ICD)	-.493	.207	5.674	1	1.748*	.407	.407
	Externalisation of self-worth (ICD)	.558	.218	6.528	1	.611*	1.139	1.139
	Magnification and fortune telling (ICD)	.445	.224	3.928	1	1.747*	1.005	1.005
	Minimisation and arbitrary inferences (ICD)	.652	.257	6.438	1	1.560*	1.160	1.160
	Perfectionism (ICD)	.716	.256	7.845	1	1.920*	1.240	1.240

Emotional Reasoning (ICD)	.465	.275	2.870	1	1.591	.930	2.727
How much do your religious beliefs affect your daily life?	1.052	.345	9.275	1	2.863*	1.455	5.634

Note. PCES=Porn Consumption Effects Scale. ICD=Inventory of Cognitive Distortions scale.

* Significant at the p<0.05 level

** Significant at the p<0.001 level

According to the MLR model, negative impact of pornography on participants' life in general, and sex life, dysfunctional thinking styles (overall and externalisation of self-worth, magnification and fortune telling, minimisation and arbitrary inferences, and perfectionism), and impact of religious beliefs were positively related to group membership (p<.05).

The variables that had a statistically significant relationship to distinguishing addicts from non-addicts, in the first logistic regression equation, were negative impact of pornography on participants' sex life (SLN), dysfunctional thinking styles (overall and externalisation of self-worth, magnification and fortune telling, minimisation and arbitrary inferences, and perfectionism), and impact of religious beliefs. The variables that had a statistically significant relationship to distinguishing somewhat-addicts from non-addicts, in the first logistic regression equation, were negative impact of pornography on participants' life in general (LGN).

Odds ratio analyses demonstrated that for each unit increase in pornography consumption having a negative effect on their sex life, the probability of identifying as an addict increased by 401%. For each unit increase in the impact of their religious beliefs, the probability of identifying as an addict increased by 186%. The probability of participants reporting to be addicts for each unit increase in overall cognitive distortions increased by 39%, externalisation of self-worth by 75%, magnification and fortune telling by 56%, minimisation and arbitrary inferences by 923%, and perfectionism by 105%. For each unit increase in pornography consumption having a negative effect of their life in general, the probability of identifying as a some-what addict rose by 179%.

Mediation

Regression analysis was used to investigate the hypothesis that thinking styles (as measured by the ICD and impact of religious beliefs) mediated the effect of time spent viewing pornography on the overall negative effect of pornography. Confidence intervals were examined to assess this (Preacher & Kelley, 2011).

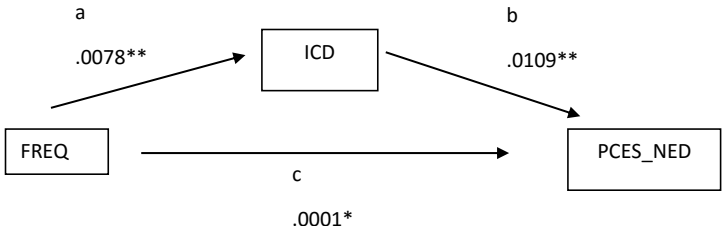


Figure 1. Standardised regression coefficients for the relationship between frequency of pornography use and negative effects of pornography consumption as mediated by cognitive styles.

**P*<.05

***p*<.001

As Figure 1 illustrates, there was a significant indirect effect of frequency of viewing on negative effects of pornography through cognitive thinking styles, *b*=.10, BCa CI[.0402, .1865]. The indirect effect is approximately 10% of the maximum value that it could have been, and equates to a medium effect size, K^2=.10, CI[.0415, .1834].

As Figure 2 illustrates, there was a significant indirect effect of frequency of viewing on negative effects of pornography through the impact of religious beliefs, b^2=.04, BCa CI[.0044, .0885]. The indirect effect is approximately 4% of the maximum value that it could have been, and equates to a medium effect size, K^2=.04, CI[.0067, .0881].

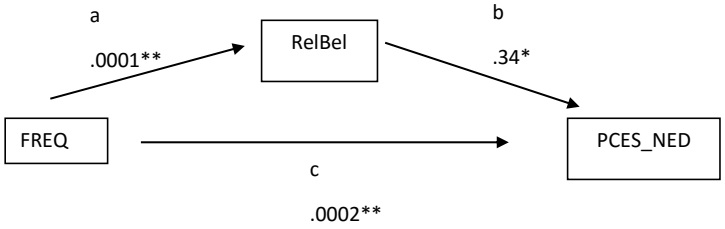


Figure 2. Standardised regression coefficients for the relationship between frequency of pornography use and negative effects of pornography consumption as mediated by impact of religious beliefs.

**P*<.05

***p*<.001

Discussion

In exploring whether thinking styles play a role in how individuals evaluate their pornography use, several significant findings emerged. Thinking styles, impact of religious beliefs, and positive and negative effects of pornography use were found to be different depending on how individuals defined their pornography use as being problematic or not. Given that addicts were found to view pornography for a significantly longer period of time than somewhat-addicts or non-addicts, a propensity score-matching (PSM) sensitivity analysis was performed. When this sample was analysed for differences, findings reflected those found in the larger sample, indicating that cognitive bias is likely to influence how individuals evaluate their pornography use, rather than the behaviour alone.

Therefore, generally, non-addicts were more likely to report experiencing positive effects from their pornography use, whereas addicts were more likely to report experiencing negative effects from their pornography use. Addicts were more likely to report higher levels of cognitive distortions, specifically externalisation of self-worth, magnification and fortune telling, minimisation and arbitrary inferences, perfectionism, and emotional reasoning, than non-addicts or somewhat-addicts. Addicts and somewhat-addicts were more likely to report that their religious beliefs impacted their daily lives more than non-addicts. Further analyses revealed that individuals who demonstrated a propensity for dysfunctional thinking and experienced their religious beliefs as impacting on their daily lives, were more likely to identify as an addict. Shame was not found to be associated with how participants viewed their pornography use.

Thinking Styles

In support of the hypothesis, cognitive distortions were found to predict how participants evaluated their pornography use, specifically identifying as an addict, and reporting negative effects of pornography consumption on their sex life, attitudes towards sex, and life in general. Further analyses showed that individuals who demonstrated increased dysfunctional thinking styles, and/or experienced a high impact of religious beliefs, were more likely to report negative effects of their pornography use in relation to life in general and sexual factors, and were more likely to perceive themselves as addicted to pornography. Addicts were found to endorse more cognitive distortions than any group and somewhat-addicts were found to endorse more cognitive distortions than non-addicts.

How people give meaning to their own and other peoples behaviours is subject to cognitive errors and attribution biases (Brehm, Kassin, & Fein, 2002). We can speculate then that some cognitive distortions may be more relevant than others with regards to evaluating one's pornography use. For instance, 'externalization of self-worth' refers to the development and maintenance of self-worth based almost exclusively on how the external world views that individual (Freeman, 2004; Freeman & Oster, 1999). If individuals are within an environment that perceives pornography use to be unhealthy or harmful, then those individuals may evaluate their own pornography use negatively based on those external judgements. Similarly, if individuals have a propensity for 'emotional reasoning', in environments where pornography use is a taboo or shameful, they may conclude that feelings of guilt about their pornography use is evidence of being guilty. Furthermore, if an individual has 'perfectionistic' traits, they may be constantly striving to compete with internal or external representations of 'perfection'. In relation to pornography use, this representation may be defined by society or a culture and be incongruent with the individual's actual behaviours, leading them to perceive those behaviours as 'wrong'. Additionally, if individuals hold a cognitive distortion of 'magnification' they may have a tendency to exaggerate or magnify the negative consequences of their own pornography use in comparison to other people's pornography use (Burns, 1999; Burns & Seligman, 1989). Lastly, individuals with frequent cognitive distortions may rely on 'arbitrary inferences', whereby they draw a negative conclusion in the absence of specific supportive evidence (Beck et al., 1979; Burns, 1999; Burns & Seligman, 1989) (e.g., "I use pornography more than others, therefore I am an addict"). In the current study, addicts were found to significantly endorse these types of cognitive distortions more than somewhat-addicts or non-addicts.

Cognitive distortions, in part, are demonstrative of cognitive rigidity and inflexibility (Marzuk, Hartwell, Leon, & Portera, 2005). When people experience cognitive dissonance, i.e. a state of stress when holding two or more conflicting thoughts, attitudes, beliefs or values (Festinger, 1962), particularly when related to the concept of self (Aronson, 1999), it is cognitive flexibility which

determines how that discomfort is managed. Individuals with cognitive flexibility may initially hold conflicting attitudes or beliefs about their pornography use, but cope with this by accepting that they use pornography, and alter their existing belief system to accommodate their pornography use as being acceptable, thus identifying as a non-addicted user.

Values theory emphasises this dissonance between behaviours and values as responsible for internal conflict and feelings of distress (Bardi & Schwartz, 2003; Schwartz, Galperin, & Masters, 1995). For addicts in this study, it may be that pornography use is a behaviour that is incongruent with their values, and for which they lack the cognitive flexibility as a resource to draw upon, as a way to manage their distress. Furthermore, the pursuit of either intrinsic (e.g. stimulation values) or extrinsic (e.g. tradition values) needs or goals has been found to be related to general mental health and life satisfaction (Sagiv & Schwartz, 2000); stimulation-led values have been associated with positive outcomes, and tradition-led values have been associated with negative outcomes. Therefore, it may be that participants in this study differed in the value-led goals they pursued, for instance, addicts may have been more likely to prioritise tradition-led values and non-addicts may have been more likely to prioritise stimulation-led values. In light of this, when considering the cognitive distortions that addicts were significantly more likely to endorse, we can hypothesise that 'externalisation of self-worth' and 'perfectionism' in particular may be relevant; both of these thinking styles rely on external feedback and may reflect the pursuit of extrinsic goals.

Subjective impact of religious beliefs was found to predict negative effects of pornography on life in general, attitudes towards sex, sex life and negative effects overall. Furthermore, this impact was found to mediate the relationship between frequency of viewing and negative effects of pornography. In line with previous research, which suggests discrepancies between behaviours and values can cause distress and pathologising of behaviours (Musick et al., 2000), perhaps for some participants the strong religious beliefs they hold about pornography and sex more generally, are in conflict with their sexual behaviours. In order to make sense of this, and realign their values and behaviours, they may externalise their pornography use and attribute such behaviours to an addiction. Furthermore, when addiction is conceptualised as 'sickness', this might be a psychological mechanism to reduce distress (e.g., "It's not me, it's the illness"). Importantly, if an individual holds a belief that their pornography use is acceptable yet external beliefs that 'pornography use is unacceptable' are imposed on them, they may be more likely to experience distress (Bardi & Schwartz, 2003; Sagiv & Schwartz, 2000). In addition then, identifying as a pornography addict positions the individual within a new social context, one in which each member's commonality is the very thing that potentially separated them from other social groups. Furthermore, if an individual relates to other 'addicts', then their tendency to externalise their self-worth within this context may be less likely to lead to negative consequences.

This study also hypothesised that shame would be associated with how an individual perceived their pornography use, with addicts reporting higher levels of shame, however, this was not supported. To the authors' knowledge, this has not been found in previous research. One explanation for this might be that if individuals externalise their behaviours as being a result of an addiction, rather than internalise them, they are protected from experiencing shame (Lickel, Steele, & Schmader, 2011).

Limitations

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Cautions regarding causal inferences apply and there may be other contributing factors, which the current study fails to capture. For instance, research has demonstrated that anxiety and depression are related to cognitive distortions and inflexibility of thought (Moritz, Kloss, von

Eckstaedt, & Jelinek, 2009). Therefore, perhaps mental health factors influence frequency of cognitive distortions and/or whether individuals pathologise their pornography use. Furthermore, findings may be limited with the omission of data regarding meaningful activity; for example, participants who are employed full-time may have less opportunity or less motivation to access online pornography. Therefore, future research may benefit from acquiring such information. In addition, although perhaps reflective of real-world figures, the disparity between the numbers of participants across the three groups may have affected the results and subsequent conclusions. Future research with larger numbers of participants representing pornography addicts would enable this study's hypotheses to be further tested. It should also be noted that the mean age of participants was 28 years old. This peer group is likely to be at a different life stage than older or younger age groups, and as such their relationships with others may be qualitatively different, for example, they may be less likely to be in a committed relationship with a family compared to older adults. Given that research suggests the impact of pornography use on pornography users' relationships is indicative of a perceived addiction (Pyle & Bridges, 2012), this may have influenced the findings.

The current study also identified a population of individuals who are qualitatively different in their beliefs and attitudes from self-defined pornography addicts and non-addicts; 'somewhat addicts'. For these individuals, perhaps they experience less cognitive dissonance between their values and behaviours perhaps in part due to their reduced cognitive distortions and level of religious beliefs. However, over time if they continue to view their behaviours as discrepant from their attitudes, values, or beliefs, they may be at an increased risk of identifying as a pornography addict. By identifying such people in clinical contexts, and working with their thinking styles, we may be able to prevent them from experiencing increased distress. Future research may benefit from employing a qualitative design to draw out the nuanced thinking styles prevalent within pornography users, the values individuals may prioritise, and to gain a better understanding of users' needs, if any, relating to their negative evaluations of pornography use. Furthermore, a qualitative design may allow for similarities and differences in pornography behaviour profiles to be explored in more detail. For instance, collecting information about family and peer discourses around pornography may help elucidate differences (e.g. pornography is a taboo). Lastly, if research suggests how we make sense of our behaviours determines our intentions (Hungerman, 2014; Schwartz, 2013; Schwartz & Bardi, 2001), then it would be useful for future research to further explore how individuals, with different addiction status', value the significance of societal and cultural norms as well as gain an understanding of those individuals' beliefs about the causation of pornography addiction.

This study has shown thinking styles to be predictive of how pornography users perceive their pornography use as being problematic or not; specifically, frequency of cognitive distortions and level of impact that religious beliefs have on people's day-to-day lives. These findings have clinical implications as they can inform treatment[12] for individuals who perceive their pornography use as problematic. The dominant approaches to treating pornography addiction are abstinence-based, however, if underlying attitudes, values and thinking styles are not identified as treatment needs and appropriately addressed, individuals may still experience distress and pathologise other subversive, but normal, behaviours. Moreover, in applying abstinent-based interventions, we may be inadvertently perpetuating the belief that pornography use is 'wrong'. Instead, treatment could aim to increase cognitive flexibility, reduce cognitive distortions and help the individual to evaluate their

[12] When using the term 'treatment' the authors are not of the consensus that individuals who perceive their pornography use to be problematic are 'ill'. Instead, this term refers to the *support* that clinicians can offer individuals in helping them to understand that they are not ill, and to help them feel positive about themselves.

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Lastly, this research has identified a group of people who perceive their pornography use to be *somewhat* problematic. For these individuals, perhaps they experience less cognitive dissonance between their values and behaviours perhaps in part due to their reduced cognitive distortions and level of religious beliefs. However, over time if they continue to view their behaviours as discrepant from their attitudes, values, or beliefs, they may be at an increased risk of identifying as a pornography addict. By identifying such people in clinical contexts, and working with their thinking styles, we may be able to prevent them from experiencing increased distress.¶

behaviours without the potential biases cognitive distortions can lead to. Furthermore, as clinicians, working with individuals (particularly those vulnerable to stigma) to increase their individual agency and personal responsibility may communicate self-efficacy and confidence (Corrigan & Shapiro, 2010).

To conclude, current abstinence models of treatment are propagated with limited evidence of effectiveness or evaluation of harm. There is not much focus on cognitive dissonance, but other factors, such as therapists trying to find childhood abuse, are prioritised. Treatment should be based on evidence of what the psychological aetiological factors are. This research provides some evidence of cognitive dissonance being related to how people position themselves. Therefore, treatment may want to focus on this, and see whether this dissonance could be reduced, to improve quality of life for those worried about being addicted to pornography.

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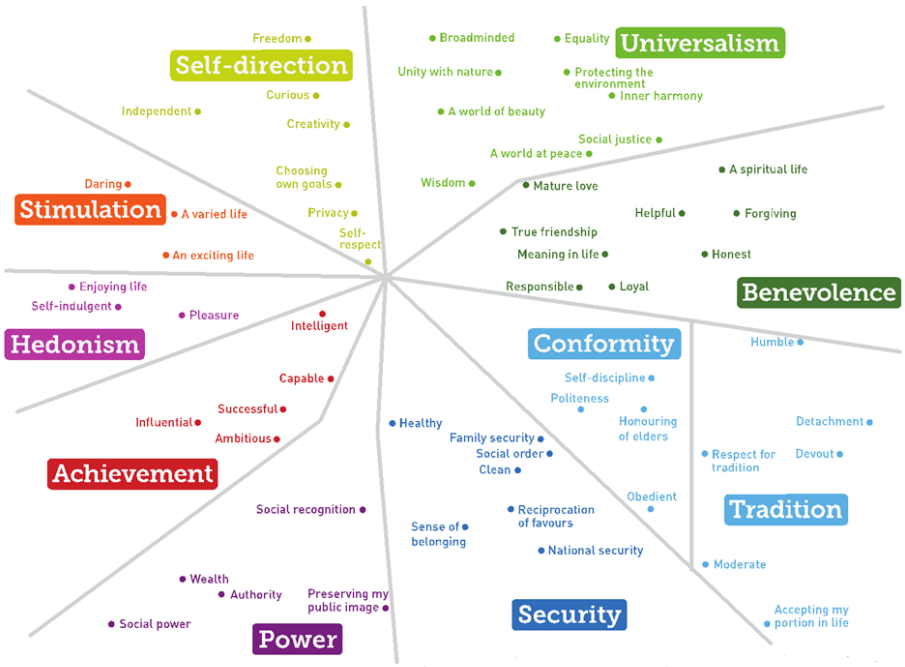
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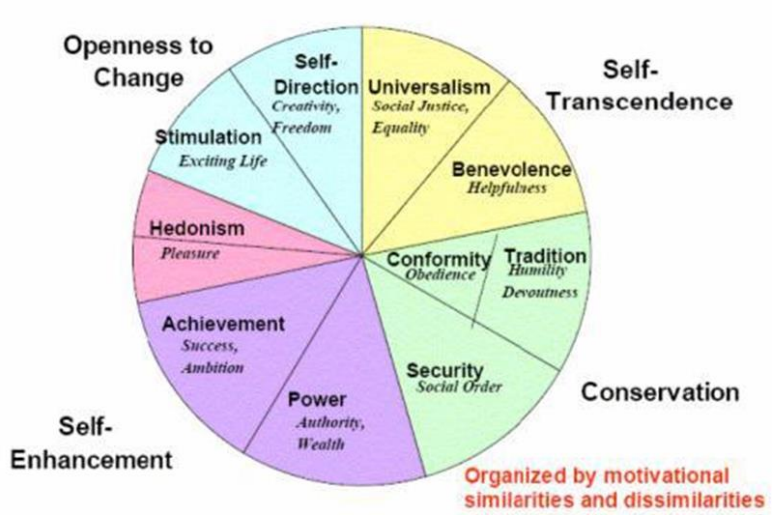
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APPENDICES

Appendix A: Schwartz's (2006) Motivational Values



Appendix B: Structural Relations among Motivations



FIGURES

Figure 1. Standardised regression coefficients for the relationship between frequency of pornography use and negative effects of pornography consumption as mediated by cognitive styles.

Figure 2. Standardised regression coefficients for the relationship between frequency of pornography use and negative effects of pornography consumption as mediated by impact of religious beliefs.

QUALITATIVE JOURNAL PAPER

"I sometimes question myself and go 'are you normal?'":

Do thinking styles play a role in whether people pathologise their pornography use?[1]

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Abstract

How pornography addiction is conceptualised remains inconsistent and subjective. As such, no diagnostic criteria exist and related discourses differ in the aetiology of and treatment for self-reported problematic pornography use. Current treatment generally focusses on the behaviour, pornography use, yet people's relationship with pornography is complex, and there may be other factors involved. Drawing on values theory and thinking styles, this study aimed to explore the similarities and differences between self-reported (n=11) pornography addicts, somewhat-pornography addicts, and non-addicts in their descriptions of pornography and pornography addiction. Thematic analysis revealed thinking styles influenced the discourses participants had regarding pornography. Primary themes identified were participants' relationship with pornography and perceived causation of pornography addiction, significance of social norms, and impact of expert opinion. These findings thus support the notion that a conflict in values, paired with a relatively inflexible cognitive style, may lead individuals to pathologise their pornography use. In light of this study's findings, thinking styles should be a focus in future research and treatment as it may help to reduce cognitive dissonance and engender agency.

Keywords: Pornography; addiction; self-perceived problematic pornography; thinking styles; shame; values

Introduction

The Oxford English Dictionary (2011) defines pornography as "printed or visual material containing the explicit description or display of sexual organs or activity, intended to stimulate sexual excitement", yet it is notoriously difficult to achieve an agreed definition. Following the dawn of the internet and move towards online pornography distribution, users have had unprecedented access to pornography (Poulsen, Busby & Galovan, 2012). With this increased exposure, some researchers believe, comes increased risks of harm for the people involved in making pornography (Evans-DeCicco & Cowan, 2001; Kendall & Funk, 2008), as well increased risks of sexual aggression, and harmful effects on sexual and relationship satisfaction for pornography viewers and actors (Malamuth, Addison & Koss, 2000; Poulsen et al., 2012). Conversely, others view this increased access as an opportunity for sexual exploration and for positive effects on sexual and relationship satisfaction (Attwood, 2005; 2010). However, there is insufficient empirical evidence to support either claim (Weinberg, Williams, Kleiner & Irizarry, 2010), and the existing literature base is renowned, and criticised, for its reliance on quantitative and experimental methods (Barker, 2014). Such methods are limited in their capacity to make conclusions about sexually-related behaviours (Barker, 2014; Fisher & Barak, 1991; Malamuth & Donnerstein, 2000). Without the use of methods to position findings within their context and explore the complex relationship individuals have with pornography, we risk perpetuating the polarised positioning of pornography use, becoming lost in its politics, and not responding appropriately rather than assuming distress or otherwise.

Controversies

Research investigating sexual behaviours has long been regarded as susceptible to the biases of definitions and the researcher's agenda (Pope, Voges, Kuhn & Bloxsome, 2007). Indeed, some critics have proposed that research is entrenched in morality and religious values (Ley, Prause & Finn, 2014) so that the sexual behaviour is condemned as being problematic, rather than considering that the personal meaning in how an individual evaluates their sexual behaviour, and the context in which it occurs, might be problematic. Such concerns reveal the difficulties current researchers encounter in conceptualising complex sexual behaviours without reducing them into simplistic and inadequate definitions (Duffy, Dawson, das Nair, 2016.). Given there is no agreed diagnostic category for 'pornography addiction', there is disagreement amongst researchers regarding its definition, and as such, a plethora of terms are used[2] in this area, such as compulsive viewing (Alvin Cooper, Delmonico, Griffin-Shelley, & Mathy, 2004; Young, 2005), impulsive viewing (Shapira et al., 2003), excessive viewing (Pyle & Bridges, 2012), and hypersexual disorder (Kafka, 2010; Kaplan & Krueger, 2010; Reid et al., 2011). Such disparity means that the aetiological position a researcher takes greatly influences the conclusions made about the impact of pornography (Duffy et al., 2016).

The clear conceptualisation necessary for quantitative research allows for little flexibility, and fundamental assumptions can be exacerbated and perpetuated in findings. For example, such methods often assume a causal and linear relationship between pornography use and people's attitudes and behaviours (Barker, 2014). Furthermore, these approaches often suppose that people have fixed characteristics which are independent, and therefore independently studied, from their social context (Barker, 2014).

[2] As the authors aim to explore differences in how people perceive their own behaviours, for the purpose of this study, terms relating to 'self-perceived problematic/addictive pornography use' will be used.

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Deleted: Scientific interest in sexuality and associated problems (such as 'sex addiction') has been ongoing for over 100 years (Kafka, 2010). However, controversies remain regarding the

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Deleted: Indeed, an addictive narrative has been suggested as serving to impose societal parameters of what is considered 'normal' and 'abnormal', and provide a platform from which 'experts' can impose sanctions 'for our own good' and discipline those who transgress these (Clarkson & Kopaczewski, 2013). Pioneering research (Kinsey, Pomeroy, & Martin, 1949) suggested our individual desires and behaviours are likely to differ from those deemed acceptable as a society, yet we continue to judge them as one and the same. When we view individual behaviours through a societal lens, and place global sanctions on them we may run the risk of pathologising subversive, but normal, behaviours. Furthermore, screening innate desires and behaviours against a backdrop of moral and religious standards can be disempowering and shaming for some individuals (Ley et al., 2014). The dominant research ethos into pornography research appears to advocate a sex-negative stance and leaves little room for researching the benefits of sexual behaviours. However, a recent review of the evidence suggests there may be many benefits of sexual behaviours (Ley et al., 2014), thus it is important for research to continue to address this imbalance. ¶

Pornography Addiction¶

Two diagnostic-classification systems are used within the UK, the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) (American Psychiatric Association, 2013) and the International Classification of Diseases, tent ...

Deleted: How pornography addiction is operationalised therefore, often varies between studies, which influences the conclusions made about the impact of pornography addiction and indeed whether it exits at all. A recent systematic literature review revealed stark disparities between the operational definitions of pornography addiction (Duffy, Dawson, & das Nair, in press.), with definitions predominantly referring to 'excessive' use and ...

The limitations of a dominant quantitative approach to the study of sexual behaviours highlight the importance of conducting research with those who engage with pornography, "in ways which attend to their embodied lived experience and the social world in which they are embedded" (Barker, 2014, p124). Therefore, this study aimed to extend the findings from the authors' quantitative research, which examined the role of thinking styles in how people pathologised their pornography use (Duffy, Dawson, Moghaddam, & das Nair, in prep.), and consider the pornography addiction discourses, and their potential influence, within the same theoretical paradigm (i.e. Value Theory).

Theoretical Framework: Value Theory[3]

Perceived norms and values are central to various behaviours (Schwartz & Bardi, 2001). Research has shown that we hold a comprehensive, integrated and stable set of motivational values (see Appendix A) which represent goals that apply across contexts and time and relate to fundamental, universal needs (Bardi & Schwartz, 2003); biological needs, requisites of coordinated social interaction, and demands of group survival and functioning (Schwartz, 2013). These values are expressed and/or pursued through behaviours, transcend cultures, and vary in their importance.

The motivation and pursuit of each value has psychological, practical, and social consequences that may conflict or be congruent with the pursuit of other values (Bardi & Schwartz, 2003). In addition, values inform the evaluations we make about the self, others, behaviours and events (Schwartz, 2012), and are facilitated by our thinking styles, such as cognitive flexibility. Categorical thinking is a mental process that allows people to streamline and simplify stimuli and incoming information in order to render the world meaningful, predictable, and easier to navigate (Macrae & Bodenhausen, 2001). However, in order to respond effectively to unexpected situations and behaviours, people must also be able to think and act responsively and flexibly (Baars, 1997; McClelland, McNaughton, & O'Reilly, 1995). Categorical thinking can often give rise to stereo-based judgmental outcomes (Brewer, 1988; Neuberg & Fiske, 1990), and has been shown to be negatively associated with success in work, love, social relationships and emotional well-being (Epstein & Meier, 1989). If an individual uses categorical thinking to consider their pornography use, they may be restricted in their ability to evaluate whether it is acceptable. Moreover, categorical thinking has been shown to occur when the situation, person, or event holds social meaning for the perceiver (Macrae, Bodenhausen, Milne, Thorn, & Castelli, 1997). Given that values are understood within a social context, we could hypothesise that an individual is likely to perceive particular values as having more or less social meaning, and therefore, in some instances, categorical thinking is more likely to occur.

As demonstrated in Duffy et al. (in prep.), quantitative methods are able to identify and measure these constructs; however, they rely on pre-defined concepts. Qualitative methods are able to extend such findings and facilitate a nuanced approach through which the pornography users' thinking styles and values are captured and studied within a context of personal meaning. Therefore, as well as identifying the *presence* of cognitive differences, we can delve deeper into *why* those differences might exist.

Feelings of shame[4][5] have been shown to occur when reflecting on and evaluating oneself in reference to held psychological, practical, and social standards and values (Tangney, Stuewig, & Mashek, 2007). As a function, shame can serve to act as an emotional moral barometer and provide feedback on social and moral acceptability. However, shame-prone individuals are more likely to

Deleted: Regardless of the status of sexual addictions, treatment is still sought for a variety of 'sexual behaviour addictions' (Reid, Gilliland, & Fong, 2011; Reid, Harper, & Anderson, 2009), yet reasons for this remain unclear (e.g. compulsions, negative consequences, shame). Therefore, it is essential that attention is paid to this under-researched and little-understood population in order to develop appropriate treatment and disentangle misconceptions (Ley et al., 2014). ¶

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Deleted: The values and associated behaviours can be organised to reflect two overarching and conflicting dimensions (see Appendix B): 'openness to change' vs 'conservation', and 'self-transcendence' vs 'self-enhancement'. Pursued values situated within the same dimension are less likely to conflict with each other, than values pursued from the opposing dimension. For example, the pursuit of values relating to personal interests, situated within the 'self-enhancement' dimension, may be in conflict with the needs and interests of the social group the individual belongs to, values situated within the 'self-transcendence' dimension.¶
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[3] See Duffy, Dawson, Moghaddam, & das Nair (in prep.) for more information.
[4] See section 1.6 in extended paper for further details on shame.
[5] See Duffy et al. (2016) for a more detailed description on the role of shame in evaluating sexual behaviours.

blame themselves and others for negative events and respond to shame with anger or withdrawal, leading to an increase in vulnerability to psychological distress (Tangney & Dearing, 2003). Moral standards are said to be dictated by universal laws and cultural proscriptions and informed by three types of ethics (Shweder, Much, Mahapatra, & Park, 1997); autonomy (e.g. individual rights), community (e.g. shared social conventions), and divinity (e.g. physical purity). Rightly or wrongly, pornography is intrinsically linked with morality and social acceptability; in 2014, the UK Communications Act (2003) was amended to dictate what pornographic material could be legally produced and sold, and related academic and layman discourses have been identified as entrenching pornography within religious and moral values (Attwood, 2007; Ley et al., 2014). When working with individuals who perceive their pornography use as problematic, it is important to consider that if an individual is participating in behaviours which they deem as violating their norms, values and standards, they are more likely to experience shame.

Indeed, Reid et al. (2009) found 'sex addicts' reported increased shame responses compared to 'non-addicts', and were more likely to defend against such feelings with withdrawal and higher tendencies to attack themselves and others. Feelings of internal shame (how we view ourselves) and external shame (how we perceive ourselves to be viewed by others) tend to be elicited when we feel devalued or inferior to others and can lead to self-criticism (Gilbert, 2010). Considering the role of shame in how we evaluate pornography use, we can hypothesise that, for particular social groups, using pornography is a breach of moral conduct, or incongruent with the specific individual's group values, which leads to feelings of shame. Indeed, such disparity is evident in the dominant Western culture, in which sexual stimuli are widely available yet moral and religious parameters are imposed on sexual behaviours with the view to protect the institution of marriage (Levine, 2010). Moreover, the strength of an individual's identification with the group determines the extent to which they accept or reject particular social norms, with increased identification more likely to elicit higher levels of shame when normative standards are violated (Bierbrauer, 1992). In support of this, Twohig, Crosby, and Cox (2009) found that, for self-reported problematic pornography users, incongruence between pornography viewing and the user's associated values or morals was the main reason for pornography use being seen as problematic.

In the authors' related study (Duffy et al., in prep), results indicated that levels of dysfunctional thinking styles, such as *externalisation of self-worth* and *perfectionism*, as well as reported impact of religious beliefs, were associated with whether individuals perceived their pornography use as being problematic or not. However, evidence has been mixed as to the role of shame (Gilbert, 2010), with researchers failing to find significant differences between self-identified problematic and non-problematic pornography users' levels of shame (Duffy et al., in prep). Importantly, only one quantitative measure was used to measure shame (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000), and so nuances in the participants' experience of shame may have been missed. Moreover, researchers have criticised the TOSCA in its ability to differentiate between guilt and shame, and warn that it fails to account for interaction effects and context (Sánchez, 2014). Given individuals' complex relationship with and diverse experience of pornography (Attwood, 2005; Hardy, 1998) and shame, qualitative research may be suitable to investigate the narratives pornography users have about their pornography viewing in more depth than quantitative measures alone allow (Attwood, 2005).

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Clinical Implications

People present to clinical services with 'pornography addiction' and/or excessive viewing; we need to explore users' perceptions of their behaviours in order to identify the target variables for change, whether that be their cognitions/attributions, the behaviour itself, or both. This is important

from a research and treatment perspective, as it may not be the behaviour itself (pornography use) that is problematic and the target for intervention, but the cognitive framework individuals use in relation to the behaviour, particularly given that current clinical practices that address pornography use are not based on research evidence or theory[6] (Cash, Rae, Steel, & Winkler, 2012; Ley et al., 2014).

Cognitive theories of change have received extensive empirical support in the treatment of psychological distress (Dobson & Dobson, 2009). Moreover, there exists a vast evidence-base pertaining to the effects of attributions on how people make sense of their own and others' behaviours and apply meaning (Bamberg & Möser, 2007; Devos-Comby & Devos, 2001; Weiner, 2001). Individuals with strict, rule-governed and moralistic attitudes may be more susceptible to shame and guilt. Furthermore, if rigidity, inflexibility, and shame are linked with pathologising pornography use, evidence-based treatment recommendations to address cognitive styles and shame can be made, for instance, the role of compassion in Compassion-Focussed Therapy (Gilbert, 2010), challenging of assumptions in Cognitive Therapy (Beck et al., 1979), and undermining problematic rule governance, diffusion, value clarification, and acceptance as utilised in Acceptance and Commitment Therapy (Hayes et al., 2004).

Given the complexities and nuances related to an individual's sexual behaviours and their relationship to them, a qualitative approach allows a broader platform from which to explore these than a quantitative approach alone would (Attwood, 2005). Existing quantitative research often focussed on the negative impact of pornography use (Duffy et al., 2016; Ley et al., 2014), and critics suggest that sex-addiction discourses are biased and flawed (Joannides, 2012). Rather than offer a problematic polarised position of either 'pro' or 'anti' pornography, qualitative research can avoid making causal claims and instead offer a 'lived experience' (Barker, 2013). In order to widen the focus and contribute to a balanced perspective, this study aimed to explore a variety of people's perceptions of their pornography use, and whether broader attitudes impact on the meaning individuals give to their pornography use. The addition of qualitative research in line with this study's pragmatic epistemological position is in fitting with the application of clinically-led research, and complements working in applied areas.

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Method

Participants recruited to a related quantitative study (Duffy et al., in prep.) were invited to take part in a semi-structured interview about their perceptions of pornography use. This study relates to these interviews. Participants were recruited from both UK National Health Service (NHS) and non-NHS sites. NHS recruitment occurred at a specialist sexual health clinic and was advertised using posters displayed in relevant clinical areas and toilets. For non-NHS participants, the primary technique for recruitment was advertisement through social media. A maximum-variation sampling technique was employed. This is a purposive sampling technique used for this research to ensure that an eclectic sample of diverse demographics was captured (Patton, 2005).

Participants

Participants (n=11) were considered eligible to take part in the study if they were capable of providing informed consent, were above 18 years old, and used pornography that is considered legal in the participant's country. Although this research is only interested in the use of legal pornography, the researchers acknowledge that some individuals may not restrict their viewing to only legal or

[6] Please see section 1.8.1 for further detail regarding current treatment.

illegal material. There was no upper age limit. Participants of all sexual orientations and genders were invited to participate. Participants were required to read, speak and write English.

Participants were divided into three groups[7]: Group 1 - people who self-defined as having problematic pornography use (addicts), Group 2 - people who identified themselves as having 'somewhat' problematic pornography use (somewhat-addicts), and Group 3 - people who did not identify themselves as having problematic pornography use (non-addicts).

Procedure

Interviews were conducted over Skype or the telephone and were audio-recorded using a digital dictation device for transcription. The interview protocol included open-ended questions (see Appendix B) and incorporated questions which allowed for descriptive, contrasting and evaluative responses in relation to participants' pornography use to ensure a richer pool of data (Spradley, 1979).

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It is worthy to note the authors' position in relation to pornography addiction. As discussed, this concept remains controversial, however, we consider that individuals who perceive their pornography use to be problematic are evaluating their behaviours negatively due to particular thinking styles and biases. Therefore, it is not the pornography use itself which causes an 'addiction'. Although efforts were made to ensure neutrality, participants may have related to the interviewer in a particular way. For instance, participants may have felt unable to relate to the interviewer if their believed causal explanations differed.

Data Analysis

An inductive-deductive approach to thematic analysis (TA[8]) was used to analyse the qualitative data. This approach identifies, analyses, and describes prevalent and salient themes within the data (Braun & Clarke, 2006). To get a deeper understanding of the data, analysis was conducted at the latent level whereby underlying conceptualisations were identified in relation to participants' narratives about their own and other people's pornography use. This required a degree of interpretation of the data by the primary researcher (AD). However, to ensure that this interpretation was firmly linked to the data, various checks were embedded within the analysis and reporting of the data. Researchers attempted to hypothesise the significance of themes and their implications in relation to the cognitive theories described above.

TA was employed due to its theoretical freedom and flexibility, which are in keeping with this study's pragmatic[9] epistemological position (Braun & Clarke, 2006). Some researchers argue that TA can be utilised inadequately and produce poor data, possibly because there is no clear agreement on how to conduct it (Braun & Clarke, 2006), however, to ensure best practice this research referred to Braun and Clarke's (2013) guidelines regarding the quality criteria and phases of conducting TA.

The interviews were transcribed verbatim and emerging ideas were recorded. Initial codes were then generated before being collated into general themes. Thematic maps of the analysis were drawn (see Appendix C for an example) and developed themes were then reviewed and refined at two

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[7] For ease of reference, participants may be referred to as addicts, somewhat-addicts, and non-addicts in the body of text. This is not to suggest that the authors subscribe to the notion of an addiction model and refers to the participant's self-identified addiction status.
[8] See section 2.8.1 in extended paper for further details on TA.
[9] See section 2.3 in extended paper for further details regarding the epistemology.

levels: the coded data level and in relation to the entire data set. Ongoing analysis occurred before the final themes were defined.

Table 1. **Participant data**

Pseudonym	Self-Reported Addiction Status	Gender	Relationship Status
Stevie	Addict	Male	Single
Idris	Addict	Male	Single
Rob	Addict	Male	Partner
Dimi	Addict	Male	Single
Michail	Addict	Male	Partner
Arthur	Somewhat-addict	Male	Single
Nicky	Somewhat-addict	Female	Partner
Raj	Somewhat-addict	Male	Single
Evan	Non-addict	Male	Single
Sarah	Non-addict	Female	Partner
Stan	Non-addict	Male	Single

Results[10]

Analysis

Three major themes were identified in the data: 1) concept of pornography addiction, 2) significance of social norms, and 3) impact of expert opinion. The first theme contained two subthemes: i) relationship with pornography, which explored issues of excessive pornography viewing, content of pornography, its impact and appetitive pornography viewing, and ii) causation of pornography addiction, which focussed predominantly on biological and social-psychological explanations. The second major theme explored the significance of social norms on how individuals evaluated their pornography use with reference to the hierarchy of social norms over individualistic needs. The third major theme explored differences in individuals' narratives about the impact expert opinions had on how they evaluated their pornography use. Addicts and non-addicts, at times utilised similar discourses in relation to pornography use and pornography addiction, however there were perceptible nuances illustrating key differences between the two. Their experiences of pornography use and how this may or may not have developed into problematic use were described with significant connections made to the impact of social norms and experts. These were then explored within the theoretical framework of values and thinking styles.

The concept of pornography addiction

This theme encompasses two subthemes relating to participants' relationship with pornography and the explanations they gave as to how pornography use can become problematic. All participants suggested that once addicted, pornography was all-consuming and increased social isolation, however groups generally differed in the value they placed on particular pornography behaviours and explanations for the cause of pornography addictions.

Relationship with pornography[11]**.** Participants described their pornography viewing as mostly occurring online and referred to viewing a variety of pornography content ranging from conventional

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[10] See section 3 for further details of the findings.
[11] See section 3.2.1 in extended paper for further details regarding this subtheme.

to niche, and for similar periods of time. However, the interpretations users had about viewing such material differed.

Some interviewees framed their pornography-use behaviours within the context of 'losing control', denoting an externalised locus of control and attributing this behaviour as part of an addiction. For many, extreme content was deemed as abnormal and pointed towards an 'unhealthy' use; users indicated that 'healthy' pornography use should occur within the 'agreed conditions of morality', whereby pornography use which extends beyond those conditions, in content and frequency, is on a 'slippery slope' towards addiction.

> Normal pornography is not exciting anymore so you escalate to more extreme stuff …when the urge is so powerful that I can't resist, if you want to resist and you can't, I think that's not natural… you can get to pornography that's to-to rape, to … erm, to-to gay stuff, transsexual pornography and some nasty shit that will get you off no matter what. (Michail)

> You just go into weirder and weirder things, things that you wouldn't even be into in real life**,** just to get aroused. (Stevie)

> I think it's knowing that what you've seen is not kind of the right thing to look at sometimes. (Arthur)

Where some individuals used loss of control to disconnect themselves from their hard-core pornography viewing, others, who still questioned whether such behaviours were acceptable or not, instead found a way to normalise their sexual desires and activities. To facilitate this, interviewees framed their interest as 'curiosity' and drew on discourses about desires being natural and intimated that fantasies, and pornography, were distinct from reality and thus ostensibly safe. This appeared to position users as being in control and protected them from feelings of shame about their pornography use (Stardust, 2014):

> Well I guess one thing that's going through my mind is curiosity. Err … I'll click on some things looking for something that's similar to what I've liked in the past but different, rather than looking at the same old things, and there's some … err … there's a lot of random activity – seemingly random activity – err … where I just look for a few seconds and say "No, that's not going to interest me" and look around or, you know, so yeah curiosity... (Evan)

> Sometimes – depending on the material subject – I sometimes question myself and go "are you normal?" but then I'll recognise that its … you know, merely fantasy; I don't have any desire to act out in real life whatever it is that I just read or … you know, whatever the story was, and then continue on my day. Again I feel it's a really natural urge; it's just a basic human function, so there's no need to feel guilty about it… (Sarah)

> There is a place for niches as people have them [they are] important in my opinion that we have accessible outlet for needs and desired, without it getting all bottled up and becoming dysfunctional. (Raj)

The construction of 'loss of control' served to mitigate some interviewees from being responsible for their perceived 'abnormal' pornography behaviour. Indeed, this loss of control extended to other sexual behaviours, for example, Michail, a self-reported heterosexual PA, also attributed his wider sexual behaviours to his pornography addiction, such as performance anxiety and engaging in homosexual relations:

> You might fool yourself that you like transsexuals or you might fool yourself that you like gay stuff when you're straight and that can be very, very confusing. (Michail)

A number of narratives reflected broader addiction discourses, where loss of control in relation to thoughts and actions is a key feature (Carvalho, Štulhofer, Vieira, & Jurin, 2015; Weinberg et al., 2010). Furthermore, the content of pornography is aligned with progressive pornography viewing and reflects the 'tolerance effect' of drug addiction discourses, whereby an increased concentration of substance, or increased drive to engage in pornography viewing, is required in order to achieve the desired effect (Berridge, 2009; Siegel, 1979). However, how participants defined 'too much porn' varied from "hours and hours and hours…in a day" (Stevie) to one hour a day:

> Well for me personally I watched it a lot … I guess an hour a day on average, something like that…I definitely think an hour's too much. I have talked to a lot of guys and most of them have watched less, but some of them have watched more, but I think the average could be maybe thirty minutes every other day or something. It's like an average. (Dimi)

Within this sample, participants spent varying time viewing pornography. With the exception of Rob, users did not differ greatly according to their viewing time, suggesting that there may be other factors involved in how some people evaluate the time they spend watching pornography. For some, their negative perceptions could be indicative of a conflict in values, which according to Schwartz's values theory could contribute towards one's negative evaluation of behaviour (Schwartz, 2013). An individual determines if their behaviours are good or bad by the potential consequences of those behaviours (Schwartz, 2012). Spending time viewing pornography, for some, may compromise the time spent investing in relationships and consequently may threaten the attainment of an incompatible valued goal, i.e. achieving and maintaining social relationships. In addition, behaviours which are deemed as idiosyncratic and are more representative of the 'stimulation' value, conflict with the 'benevolence' and 'conformity' values. If an individual places importance on these latter values and "normative behaviour[s] which promote close relationships" (Schwartz, 2012, p9), then their pornography use may conflict with them and thus cause psychological distress (Schwartz, 2012).

When discussing the impact of pornography use, contrasting narratives about experiences became evident. A number of interviewees emphasised the social and educational effects of their pornography use:

> It kind of kills your desire to go out and do other things, you know, I don't just mean meeting girls but just do anything sometimes…. I felt it was a major reason why I considered myself an under-achiever and even though I was in the top classes, and I was actually one of the smartest and I could have done a lot better, but I think this … this was the major reason why I didn't have the motivation to do the things that I wanted to do and that continued for a long time. I felt like it kind of stunted my growth – true. (Stevie)

> I think when they see that it's just starting to take them from their lives and … err … and from their relationships with everyone, so their friends … like for example they're preferring to stay at home rather than to go with their friends to watch something then I think this is an indicator, or if they're preferring this over relationships. (Idris)

Whilst others identified significant physical effects from their pornography use:

> Of course I had erectile dysfunction throughout all my teenage years and then … and then when I tried to stop [watching pornography] for the first time that's when I realised that, you know, it's actually an addiction. (Michail)

Indeed, for one participant in particular, the impact of his pornography use was unsurprising; the more time spent viewing pornography, the less time available for alternative activities:

> I left work at 5 o'clock…logged online about 6.30 on Friday evening and staggered out at 7 a.m. on Sunday morning, not having had any contact with my home address and my family and my wife and my children and my friends. And that was not unusual. (Rob)

However, the negative impact of his pornography use was pervasive to a number of values:

> I was doing stuff that I knew to be morally reprehensible according to the societal understandings and religious understandings that I had, that I had developed, I'd had grown up with, that had been very precious to me…. I felt that God should condemn me more than I felt he did. I condemned myself for feeling so profoundly sexual. (Rob)

Yet, for some, the impact of their pornography use was arguably normative in certain contexts. For instance, whilst at University, Michail attributed difficulties with studying and increased pornography viewing to his addiction, however, these behaviours are not unusual for students (Toprakci, 2007):

> I was at university … it went … it [pornography addiction] got much worse because then I got the internet and I was living on my own. Erm … I had problems with discipline, to study, and stuff; I didn't have … I didn't have the psychological calmness to study and to do things, you know. (Michail)

It may be that for Michail, he interpreted these behaviours from a particular cognitive disposition, whereby his educational failings were externally attributed to his pornography use, thus ameliorating personal responsibility. Perhaps other pornography users too attributed negative events to their pornography use, however, when questioned, contradictions occurred in some interviewee's dialogue, revealing uncertainty or unstable ideas. For instance, Dimi appeared confused as to whether pornography use led to withdrawing from women or whether a lack of successful intimacy led to his pornography addiction:

> Well I have noticed that the … that the less successful I was with girls in periods of time when I viewed pornography and then to a certain point it just came to be where I just didn't pursue girls at all anymore because I just had pornography to go back to all the time and that was so much more stimulating, so … like lack of intimacy with women in general was probably one of the main causes for me. (Dimi)

In comparison, other users compartmentalised their pornography use and clearly felt that their pornography use was distinct from other areas of their lives:

> I've forgotten all about it, I'm just interested in checking my e-mails one more time then moving onto the next task, you know, I'm thinking a nap, snack, sweep floors, err … the session with the computer is pretty much over, you know. So yeah basically I've forgotten all about it. (Evan)

> The job is done, continue on with your day. (Sarah)

Compartmentalising pornography behaviours from other aspects of their lives may have allowed those individuals to unconsciously avoid cognitive dissonance caused by their conflicting values and cognitions about their pornography use. Indeed, even the language used offered the interviewees distance from the act; "session with computer", "job"; compartmentalising enables their conflicting behaviours and values to co-exist (Leary & Tangney, 2011).

***Causation of pornography addiction*[12].** Participants discussed their understanding of what might cause someone to consider themselves addicted to pornography, drawing on biomedical and social explanations, highlighting parallels with other addiction and shame-based discourses. Some interviewees appeared more confident and fixed in their ideas whereas others were more reflective in their accounts. Some individuals reiterated discourses related to 'pornography and dopamine' found on the Internet, which positioned pornography itself as the mechanism that caused biological changes leading to an addiction:

> [porn] jacks up your dopamine when you watch it and if you watch it enough you basically numb your dopamine receptors in your brain and it desensitizes you to other things in life, such as food, going outside, socialising etcetera and it just … I don't know it just isolates you into that … into just pornography and erm, yeah, it just comes to the point where you just desensitize yourself as well, where pornography is extremely stimulating and nothing else is stimulating. (Dimi)

> …with addiction, pornography addiction, it has less to do with like your fantasies of what you want to do in life – just keeping your – *what's it called* – erm, what it is your dopamine levels are high, you just want to stay like shot. (Stevie)

This narrative also paralleled wider addiction discourses which derive from a biological approach (Stein, 2008), with interviewees citing direct comparisons with other addictions, "[pornography is] like a drug, [it] makes you feel better for a little bit, but then after that it makes you feel worse than before" (Michail); abstinence as the only treatment, "I think I was in such an advanced state of addiction that I just had to cut the internet off from my house – completely you know. That's the only way." (Stevie); and drawing on a recovery framework, "during my recovery, you know, so during the first stages when I tried to quit" (Michail), with clear references to relapses, "like there's no way I'm ever going to go back into that the spiral. It's possible to have a few relapses here and there." (Dimi).

These individuals also identified a number of psychosocial risk factors, commonly found in discourses relating to compulsive and impulsive sexual behaviours (Giugliano, 2009), which they believed increased the potential to become addicted to pornography, such as watching pornography at a young age, not having a 'healthy' sexual relationship, lacking relationship guidance from others, and wanting to escape from events in their lives.

In comparison, other pornography users suggested that an inability to "reconcile the dissonance between how they (addicts) see themselves and how they want to be seen" (Evan), can lead to feelings of guilt and shame about using pornography. This disparity was proposed as leading users to question their "natural urges…Oh my God, is this bad; am I wrong? ... this turns me on but I think it's terrible.'" (Sarah). They acknowledged that pornography use can be viewed as a social taboo but were more accepting of the dissonance between that and their behaviours:

[12] See section 3.2.2 in extended paper for further details regarding this subtheme.

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> I do think there is a large element of social stigma around it and I do think that is a very big thing. To a certain degree I understand it because it is something that most people view privately, but I do think as well it is something that more people are involved in and do than perhaps it's given credit for. (Stan)

These participants viewed pornography use as idiosyncratic and did not base their evaluations on a construct of a social 'normality'. Instead they defined their own flexible barometers from which they evaluated their pornography use, "as long as it doesn't harm anybody else" (Stan), an approach that appeared to extend to other situations and behaviours beyond pornography use:

> I'm really comfortable in my own skin; I'm really comfortable with myself, so I think it influences me to some degree, … I don't set my own beauty standards against other people. I try not to in any ways … you know I'm not … I'll happily leave the house without makeup on. If I wash my face I'm happy [laughter] so by … yeah, just by not allowing those outside influences to really affect how I live my life. (Sarah)

Evident within this dialogue is a cognitive flexibility that allows these individuals to negotiate their behaviours within the constraints of social parameters. Furthermore, values theory suggests, differences in how individuals evaluate their behaviours are due to the different values they prioritise (Schwartz, 2013). The shared motivations between adjacent values, such as 'achievement', 'hedonism', and 'stimulation', relate to egocentric satisfaction and a desire for pleasant arousal. Therefore, it may be that for some, pornography use does not conflict with these value-led actions and is subsequently not viewed negatively. Alternatively, it may also be that they do not view pornography use as a solely individualistic behaviour, compared to other pornography users. Indeed, some participants suggested pornography use can be used as part of their sex life, "I think it can be used to … to experimentation between sexual partners" (Stan), and indeed conducive for a successful marriage:

> …taking care of the need to have an orgasm once in a while made it so that I could concentrate on the other parts of the marriage… I really think that it eliminated a possible stress in the marriage and was beneficial. (Evan)

Whereas other interviewees tended to differ in how they associated pornography with sex and relationships, with addicts perceiving pornography as distinct from and even deleterious to a relationship:

> I mean 'cos one [sex] is natural and real-life and the other's [porn] like, you know, artificial and sometimes you don't really participate in; it's not like a two-way thing. (Stevie)

> …whatever the case may be online and you say "Oh that must be interesting" so instead of kind of being in the moment and trying to please your partner you just want to please yourself as much as possible. (Dimi)

Conversely, others seemingly oscillated between both causal explanations:

> I definitely think it impacts on people's like guilt and like how bad they feel, I feel like there's also a lot of people possibly surrounding them that may also be like "Oh you're watching pornography, that's really bad you shouldn't be doing that" … that just like internally gets inside them that it's a terrible thing and then maybe when they want to watch pornography it's like "Oh no, I know I can't, I shouldn't do it but now I have to do it" and then also if people are telling you not to do something then that makes you want to do it 'cos then I guess it

seems in your head more like it's becoming an addiction rather than it's just you wanting to have a release. (Nicky)

Clear differences can be seen between how participants construct pornography addiction. How individuals make sense of situations is determined, in part, by their thinking styles (Hamtiaux & Houssemand, 2012). Addicts often made declarative statements about the conceptualisation and causation of pornography addiction, and conveyed the notion that addicts believed their views to be global truths rather than opinions. In terms of thinking styles, this could be illustrative of *dichotomous thinking*, *magnification*, and/or *labelling* in that firstly, the interviewees have assumed that there is such a thing as 'good' and 'bad', 'right' and 'wrong', 'normal' and 'abnormal' behaviours; and secondly, that the importance of particular behaviours are magnified and in turn denote a label of 'addict'. Of course, context must be considered in that these individuals have experienced what they perceive as an addiction to pornography; eliciting a sense of being an 'expert by experience', however, what is important is that the viewpoint is given as an absolute; without an acknowledgment of an alternative view. In comparison, non-addicts used more considered and reflective language which portrayed a more flexible style of thinking. In relation to values, this cognitive style may have protected individuals from negatively evaluating any potential value-conflicting behaviours, facilitating a more reasoned and balanced evaluation.

Significance of social norms[13]

All participants identified social norms as having some significance in how users related to their pornography use. However, addicts and non-addicts appeared to differ on the level of importance they placed on social norms in helping them to make sense of their own behaviours and whether they believed that society's definition of normal was accurate or fair. Self-reported problematic pornography users indicated such definitions and norms were important as they provided a reference from which to know if their individual behaviours were right or wrong, whereas non-addicts suggested that comparing behaviours to social norms risked stigmatising behaviours which violated them and could create feelings of guilt or shame. As an extension of this, non-addicts described how they devised their own definitions of normality and the process they went through in learning that, for them, social norms were not 'correct'.

Non-addicts acknowledged that the social judgements of pornography use created "a lot of the negative feelings arising" (Stan), and that behaviours that deviated from social norms were vulnerable to stigma. However, interviewees described how, rather than feel devalued or ashamed, certain experiences, which challenged their own assumptions, led to a change in their perceptions and acceptance of behaviours that violated social norms:

> So generally society expects kind of the 'normal' standard and in reality, and I've come to realise this lots, there is no such thing as 'normal' – everybody is different; there is no normal standard, so when you think "Oh, my God, am I the same as my neighbour next door", well you have no idea what your neighbour next door is like, so it's that … those norms that you're instilled with growing up, not necessarily intentionally instilled with by that culture just sort of imprints on you and then as I've grown up I've really come to recognise that there is no such thing as normal and you grow past that, but even still for that five or ten seconds going "What the fuck did I just watch or read" … you know, that is still there, and then the rational brain kicks in going "Yeah, you're okay, Sarah, just keep going with life". (Sarah)

[13] See section 3.2.3 and 3.2.4 in extended paper for further details regarding this theme.

In this extract, we can see how Sarah demonstrates cognitive flexibility in her appreciation and acceptance of shifts and changes to perceived norms from those instilled as a child, to her own experiences as an adult. Even in times of doubt, or when pervasive 'rules of convention' are triggered, she has internal resources from which to draw upon to her help alleviate her anxieties.

In addition, Stan described how his more recent experiences with women were inconsistent with his previous social stereotypes. Rather than view these new experiences as unusual, or wrong, they provided him with an opportunity to consider alternative, balanced perspectives and instead adjusts his own perceptions about women to accommodate them:

> I think society as a whole assumes that only men have pleasure from sex… it's only slutty women who do and that again through my experiences in life that very much isn't the case… I think it's more of a universal human instinct that people share regardless of gender. (Stan)

In contrast, others spoke of social norms as essentialist, unquestioned truths using them as barometers from which to reference their own behaviours:

> When guys get together and talk about their escapades and their conquests, you know, and you can't join in, it's like … "Man, I'm really … I can't measure up" you know… so of course that's going to make you kind of weird, you know. (Stevie)

Or choosing pornography over "other things that are like supposed to be more … social… ought to be social … like going out, doing things especially if you have a chance of meeting friends, meeting family and other things" (Idris) would be deemed abnormal. Here narratives positioned behaviours relating to social values as more important than individualistic desires and needs. Indeed, there appears to exist a set of perceived essentials for normality; the primacy of the other (friends/family) over the self, and that self-interest at the expense of others is always a bad thing.

Other participants conveyed a more conflicted view of the importance they placed on social norms. There was a sense of relying on pornography content to reflect and inform users of the norms set by society, whilst also not fully trusting pornography as a reliable informant and were troubled as a result:

> I guess in a sense it makes you think that maybe everything's normal, like everything that in pornography might be normal and everyone does it, but then I don't think that is actually the case. But I can see why someone might think err, erm … like you see it in pornography therefore it's normal… pornography just opens up like so many different things it's like you can't know what's normal and what's not normal anymore. (Nicky)

> I think good pornography should be about the actual people having fun at it and not having anything they don't want to happen – kind of thing. Even if it's … you know … briefly faked, it should be about people having fun. (Arthur)

Within the theoretical framework of values, perhaps both addicts and non-addicts reconciled this conflict to some extent in that they prioritised particular values relating to pornography use more affirmatively; valuing more social or egocentric behaviours. Therefore, they are more confident in whether they agree or disagree with particular behaviours depending on how they acquiesce or conflict with their held values. Perhaps other individuals are not motivated to achieve self-direction and universalism value-led goals, such as relying on their own judgements about behaviours that are

perceived as diverse. Therefore, they look to others to set the standards of acceptable behaviours. Conflict may occur when the messages about acceptable behaviours are mixed:

> I think it's just … I think it's like personal views and then it's just also what other people … like the media's always quite against pornography anyway and it's … or maybe not, well I don't know, I think the media seems to say that porn's natural but then it's also like "Oh, but think of these people … like what's it doing to all these people. It's horrible, they have to have sex for money" so it's like … but then it's also a thing "Oh, it's a really normal thing for people to do, for people to watch" so I think there's like a struggle in the wider world already. (Nicky)

Given that the strength of an individual's particular values determines the extent to which they accept or reject particular social norms (Gilbert, 2010), it is reasonable to suggest that individuals who perceive social norms to be truths might hold strong 'conformity' and 'traditional' values. Furthermore, individuals who have a tendency to *externalise their self-worth*, may rely on feedback from others to develop and maintain their self-worth. Therefore, behaviours that threaten the attainment of related goals, are likely to cause distress and conflict and lead individuals to evaluate such behaviours negatively (Schwartz, 2012). Conversely, people who prioritise 'self-direction' and 'universalism' values are motivated to rely on their own judgements and are comfortable with diversity or grey areas where there are no universals. Such values and motivations are expressed in non-addicts' narratives about rejecting social norms to evaluate their own behaviours, and using their experiential knowledge instead. Therefore, their pornography use is unlikely to be in opposition with these value-led behaviours and thus less likely to cause psychological distress.

Impact of expert opinion[14]

This theme centres on what constitutes as an expert opinion and the impact an expert's opinions had on interviewees' own views about their pornography use. Here, 'expert' is subjective and refers to who the participant perceives as an authority on the issue of pornography use and addiction. Non-addicts advocated that individuals act as their own expert given the complexity of people's relationship with porn:

> I think it very much has to be up to the individual to decide what those standards are and if they believe it is a problem then they are addicted, then that is something they need to take forward … but I do feel that it is something that the individual needs to decide to do, not be told, because it's such a grey area. (Stan)

Furthermore, some suggested that a lack of discussion about sexual behaviours, from an expert or otherwise, contributed to its taboo and potential feelings of shame and that an open dialogue about pornography use might lead to a reduction in stigmatisation and negative evaluations:

> If sex were regularly discussed, openly discussed, non-judgmentally … you know, a non-judgmental topic, I think pornography use and problems with pornography and sex in general wouldn't be so closeted, it wouldn't be so hidden, so I think a lot of the negative feelings arising from the use of pornography can come from cultural judgments. (Sarah)

Conversely, addicts warned that the cultural narrative already inaccurately condones pornography as being harmless, and encouraged users to seek out experts on pornography addiction for education on the risks of pornography. Indeed, addicts appeared to welcome an expert opinion in

[14] See section 3.2.5 in extended paper for further details regarding this theme.

helping them gain insight into their problematic pornography use, which without, they would not have known they had a problem:

> I went on the internet and I tried to inform myself and that's when I found out that it was an addiction … that it can be an addiction. And then I read the symptoms, I read about the whole … err the whole thing and I recognised everything that I read I recognised in myself and I was pretty unpleasantly surprised, it was a very bad surprise, you know. It really, really affected me and I was like "Fuck, what is this; I didn't know this" you know. And … so this is how I discovered that it's an addiction by educating yourself, you just … you need knowledge. (Michail)

The expert was generally found online and purported pornography to be biologically harmful and addictive. Knowledge offered by proponents of pornography appeared to be regarded with disdain:

> …in school they don't really talk about it [pornography], you know, as something that could be harmful. In fact, even around that time I think one of the Surgeon Generals of the United States… Yes, she came out and said that it was perfectly fine, so nobody ever thought anything about it, you know… The only problem is that people didn't know it could be a problem, you know, 'cos it's so new, and I don't like it when there's some … there's people out there mostly like … mostly graduate students and doctors with like dubious degrees (laughter) and sexanology and something stupid like that, you know, and they say that it's not a problem. (Stevie)

Furthermore, addicts suspected that people who did not identify as a pornography addict but who used pornography in the same way they did, had not been privy to the right facts about their use, from an expert, and were likely to be in denial about their use:

> Everyone who masturbates three times a day has a problem … erm … they just don't want to admit it to themselves, I guess. Everyone who masturbates three times a day … erm … is depleted of energy; is tired all the time and he probably also has premature ejaculation and probably, but not always, erectile dysfunction… Maybe they simply don't know it; maybe they don't have the knowledge. Maybe … because me, too, before I didn't know this was harmful. (Michail)

A difficulty with this is that if only one viewpoint is acknowledged as being 'right', then any individual who believes otherwise is automatically 'wrong', thus perpetuating a restricted and biased approach to what is a complex and idiosyncratic behaviour (Attwood, 2005). However, there may be a number of reasons why some individuals might rely on an expert opinion, at the expense of alternative views. Relying on an authoritative figure for guidance may already be an action the individual is familiar and comfortable with, particularly if, as previously discussed, they hold related values. If an individual's behaviour is deemed unacceptable according to one set of standards, they risk being rejected or outcast from that social group. If that social group hold attributions of personal responsibility and controllability, that risk may be increased. By assigning a label to those behaviours, particularly as a symptom of pornography addiction, they become externalized and re-positioned within the context of a medicalized addiction framework. Within this framework, pornography use elicits new connotations, such as being 'out of the user's control' and the individual is perceived to have a reduced personal responsibility. Consequently, the individual may be less likely to be rejected from a social group and therefore feelings of internal and external shame may be alleviated.

Alternatively, they may become a part of a new social group ('pornography addicts'), in which pornography use is not an unexpected behaviour.

Discussion

This study explored the differences between participants' experiences of pornography use. These were then investigated within the theoretical framework of values and thinking styles with reference to the influence they may have had on whether people pathologised their pornography use or not[15]. Primary themes identified were participants' relationship with pornography and perceived causation of pornography addiction, significance of social norms, and impact of expert opinion.

With the exception of one participant, who spent significantly more time viewing pornography than other interviewees, there were various pornography-related behaviours that were similar across participants. These similarities occurred despite differences in participants reported addiction status, for instance, the diverse content of pornography viewed and time spent viewing pornography was similar between addicts and non-addicts. This supports previous findings that pornography users are a heterogeneous population (Poulsen et al., 2013) and those who perceive their pornography use to be problematic are not easily differentiated from other users by their pornography-behaviour profiles (Twohig et al., 2009).

Clear differences can be seen between how participants conceptualised their own pornography use. For some, pornography use was viewed within an addictive framework and seen solely as harmful and dangerous, indicative of a relapse (Ley et al., 2014; Stein, 2008), whilst others made efforts to normalise their perceived natural needs and desires. All participants described an internal dialogue in which they questioned their desire to watch certain pornographic acts and situations (e.g. violent pornography), but many differed in how they made sense of their motivations. Some concluded that their pornography behaviours were harmless and were fantasies distinct from their reality, whilst others attributed 'perverse' sexual behaviours as a symptom of their illness. Methods such as compartmentalisation and externalisation present in some interviewees' narratives may have helped participants to avoid cognitive dissonance about their pornography use behaviours.

Participants also differed in their hypotheses about the cause of pornography addiction, with mostly non-addicts suggesting social, shame-based explanations compared to addicts suggesting biological and individualistic explanations. How participants expressed their views on the possible causal mechanisms of pornography addiction also differed. Addicts often demonstrated categorical thinking, whereas non-addicts tended to be more reflective. We acknowledge that addicts may feel more confident in their notions of pornography addiction given their experiences compared to non-addicts who may have limited insight into pornography addiction.

Research has shown that the explanations given for mental health disorders influence how people assign causality, personal responsibility (Lincoln, Arens, Berger, & Rief, 2008; J. Read, 2007), dangerousness (Kvaale, Haslam, & Gottdiener, 2013; Lincoln et al., 2008; J. Read, 2007), and feel fear towards people with mental disorders (Corrigan, 2000; Corrigan & Shapiro, 2010). This study found that addicts assigned causality to both internal and external factors, whereas non-addicts and somewhat-addicts tended to assign causality to external factors. External factors such as upbringing and stressful circumstances tend to diminish personal responsibility, whereas internal factors

[15] We acknowledge that one line of argument is that non-addicts may have limited insight into or may be in denial about their pornography addiction which is why they do not self-identify as being addicted, but it was beyond the scope of this study to question the motivations of people's self-identification, so self-identity was taken at face value.

emphasise personal responsibility and controllability. Perceiving internal factors as causal can increase stigmatisation by eliciting attributions of dangerousness, therefore findings that the majority of interviewees assigned causality to external factors is indicative of a more helpful and positive response towards pornography addicts. This is an area for further consideration in providing support for those who consider themselves as having an addiction.

How interviewees conveyed the negative and positive impact pornography had on their lives varied according to their group identification. Addicts reported pornography impacting on social, physiological and psychological domains. In contrast, non-addicts reported psychological effects, in that they experienced, questioned, and justified feelings of discomfort when positioning their pornography use against social barometers, however they overcame such obstacles using methods such as compartmentalisation and normalisation. For some participants, the negative impact pornography had on their lives was due to a very real and severe discordance pornography had with other areas of well-being. For others, negative effects may be due to a conflict between their behaviours and held values, broadly influenced by their thinking styles.

Social norms appeared to hold more significance for addicts than non-addicts, whilst somewhat-addicts portrayed a sense of conflict between the importance they placed on social expectations and their own sense of normality. This was seemingly made more difficult given the contradictions reflected in the cultural narrative; 'pornography is natural' vs 'pornography is degenerate' (Calderone, 1972; Levine, 2010). References made to the importance of an expert and the impact of their opinion was chiefly provided by interviewees on the extreme ends of perceived pornography use; addicts and non-addicts. Indeed, addicts tended to assign great importance to an expert in helping them to realise their addiction and seek help, whereas non-addicts emphasised autonomy and acting as your own expert.

Values Theory

According to values theory, any behaviour has implications for more than one value, and some behaviours may express values at the expense of others. This expense, or trade-off among competing values, guides the individual's attitudes (Schwartz, 1992; Schwartz & Huismans, 1995). If a behaviour expresses a prioritised value then that behaviour is likely to be evaluated positively, even if it occurs at the expense of another value; however, if a behaviour expresses a value at the expense of a more important value, then the behaviour is likely to be evaluated negatively. In this study, participants indicated differences in the values they held as important, depending on whether they pathologised their pornography use or not. Non-addicts were more likely to prioritise values positioned on the 'openness to change' end of the continuum compared to addicts who were more likely to prioritise values positioned on the 'conservatism' end of the continuum.

Given that research has shown value-led therapies to be effective in reducing distress (Powers, Zum Vörde Sive Vörding, & Emmelkamp, 2009), drawing on values theory to understand the differences in how individuals evaluate their pornography use, allows practitioners to devise treatment[16] which is coherent with those values. As values influence motivated behaviour, values theory provides a framework for investigating, predicting and explaining value-behaviour relations (Schwartz, 2006), such as negatively evaluating pornography use.

[16] When using the term 'treatment' the authors are not of the consensus that individuals who perceive their pornography use to be problematic are 'ill'. Instead, this term refers to the *support* that clinicians can offer individuals in helping them to understand that they are not ill, and to help them feel positive about themselves.

Thinking Styles

According to cognitive theory, cognitive distortions serve to delete and/or distort internal and external stimuli as a way to process information in a way that supports held core beliefs about the self, others and the world (Beck, Rush, Shaw, & Emery, 1979). They are seen as faulty ways of thinking and are purported to help the development and maintenance of emotional disorders (Yurica, 2002). There are a number of identified cognitive distortions documented in the literature, clusters of which are reported to be found with particular disorders (Yurica, 2002). If addicts have a tendency to distort their thinking, and are different to non-addicts, this might support the notion that it is how people perceive their behaviour which is unhelpful, rather than the behaviour itself. For example, if an individual has a propensity for 'selective abstraction', they may focus and magnify the importance of their sexual behaviour. If that individual holds a high level of shame, they may evaluate their behaviour negatively. In addition, theorists have hypothesised that the way we reason is greatly influenced by our social context (Gilbert, 1997). Individuals within social contexts that have strong expectations to conform to social values and attitudes are more likely to adopt stereotypical ways of reasoning to manage the increased threat their pornography use may pose.

Clear differences were identified in the thinking styles between groups of interviewees, with addicts portraying an increased use of *externalisation of self-worth,* and *comparison to others.* This supports the results found in a quantitative study that utilised the same sample (Duffy et al., in prep.). Given that research has demonstrated that more adaptive thinking styles can protect against mental health problems and emotional ill-being (Uhl, 2007), it may that the thinking styles held by interviewees played a role in whether they pathologised their pornography use or not. In other words, the more a person engages with distorted thinking, the more likely they are to evaluate their pornography use negatively. If clinicians are able to help individuals identify distorted thinking and then help them to modify those distortions, those individuals may evaluate their pornography use differently. Furthermore, identifying specific distorted thinking can allow clients and therapist to track them across therapy as a way to evaluate progress.

Clinical Implications

The importance of gaining insight into how individuals make sense of their perceived pornography addiction has implications for therapists. Research has shown that addicts who sought therapy found that therapists who understood the complex relationship users have with pornography were the most helpful in their recovery (Schneider, 2000). Having access to the perceptions of these individuals can facilitate therapists' understanding and reduce the potential for professional stigmatising.

In terms of intervention, understanding the cognitive framework individuals utilise and the attributions and additional variables that influence how people pathologise their pornography use, allows treatment to go beyond addressing only the behaviour (pornography-use). If beliefs and attitudes impact on the way we view and adapt to our environment, then they may impact on the meaning we give to behaviours. Individuals with strict, rule-governed and moralistic attitudes may be more susceptible to shame and guilt. Using the values theory as an integrative framework, practitioners can develop and implement therapy based on evidence and theory.

Limitations

Inevitably, this study does have its limitations. Firstly, in order to ensure anonymity, descriptive information regarding participants age, location, social class, education, and variables

could not be reliably ascertained from interviewees. This information may have allowed the researchers to situate responses within a broader context and further inform the interpretations. Secondly, although lengths were taken to reduce potential effects, the primary researcher's own assumptions, biases and reflections may have affected participants' responses and the interpretations of those responses[17] (Willig, 2013). Future research that uses a methodology that thoroughly focusses on the minutiae of language may help to address this.

Conclusion

In summary, this study explored the differences between pornography users' views and experiences of pornography and pornography addiction, and investigated whether thinking styles played a role in how people pathologise their pornography use. Differences and similarities were found in participants' relationship with pornography, their understanding of the cause of pornography addiction, significance of social norms, and impact of expert opinion. Furthermore, participants used a variety of thinking styles and revealed a number of prioritised values. The findings also go some way to elucidate the characteristics pertaining to somewhat-addicts. Overall, by identifying differences and similarities with other pornography users, clinicians may be able to identify the needs and risk factors of individuals who present to services with perceived problematic pornography use, and tailor support to effectively manage them. By addressing rigid thinking styles that cause individuals to have difficulty in reconciling behaviours that conflict with particular values, therapy can help reduce dissonance and engender agency.

[17]See section 4.4 in extended paper for further details on the position of the researcher.

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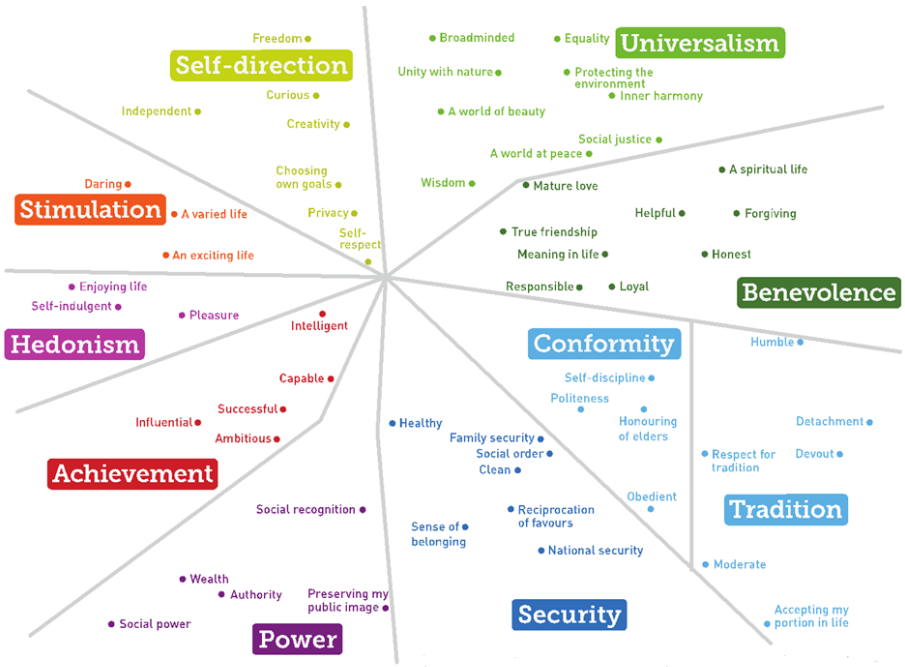
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APPENDICES

Appendix A: Schwartz's (2006) Motivational Values



Appendix B; Semi-structured Interview Schedule

We have a few regulations we need to go through – standard procedures and most research which relates to sex. I need to let you know if you disclose anything that suggest a child has been or is being put in danger then I will have to terminate the interview and we will have to inform the police. All other things considered not illegal in the UK will remain confidential.

Interview Schedule: Areas for discussion

Initial Orientation to the Interview

Individuals tend to hold various views on pornography, some that you may agree with and others that you might not. As a researcher, I'm interested in examining this area further from a scientific perspective, in order to explore how and why individuals' views about pornography may differ.

On that basis, I'd like to discuss your general thoughts about sex and pornography, why you think other people may hold alternative perspectives in this area, and the role and impact – if any – pornography may have in a person's life. During the discussion, I may at times take a 'devil's advocate' approach: the purpose of this is to facilitate discussions around alternative perspectives, and is not intended to suggest that any particular view is right or wrong.

As you will know, pornography is often discussed and debated in the broader media. However, it is important to emphasise that I am interested in YOUR personal views and experiences of pornography.

Potential Topic Areas and Prompts

What does sex mean to you?

How are / are porn and sex related?

How does watching porn fit with your broader world-view?

Has porn affected your life in any way?

Do you think porn has affected your views, relationships of same/opposite genders? If so, in what ways?

Some individuals describe themselves as porn addicts/non-addicts, or feel they do/don't have problems with pornography use, despite watching the same amount of porn. Why do you think that is?

- ➔ Probe why, what is it, emotional state.
- ➔ Potential prompt: "Some people say they feel elated or relieved, others ashamed"
- ➔ Some people like having pornography in their lives, others seem to not want it, why do you think that is?

What are your views of the people who star in pornography?

Prompt: Other people often feel that porn creeps into their life, have you found that?

How do you generally feel before after watching porn? Why do you think you feel like that?

- ➔ What do you do when you feel like that?
- ➔ Where do you feel like that?

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How do you generally feel during after watching porn?

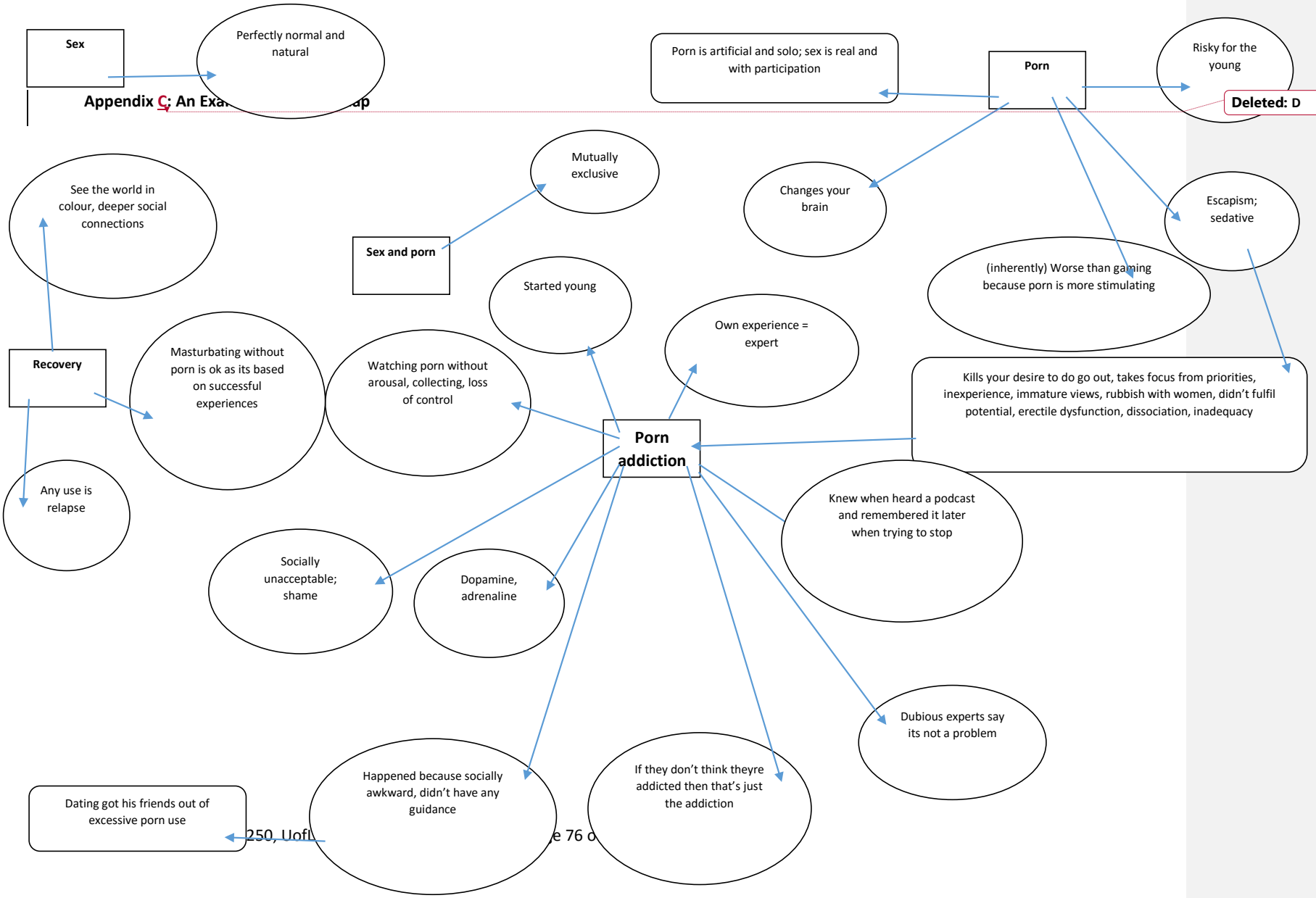
- ➔ Why do you think you feel like that?
- ➔ What do you do when you feel like that?
- ➔ Where do you feel like that?

How do you generally feel after watching porn?

- ➔ Why do you think you feel like that?
- ➔ What do you do when you feel like that?
- ➔ Where do you feel like that?

How would you know if your use of porn became a problem?

Is there anything else you think is important for us to discuss today?


Sex
Perfectly normal and natural
Porn is artificial and solo; sex is real and with participation
Porn
Risky for the young
Mutually exclusive
See the world in colour, deeper social connections
Changes your brain
Escapism; sedative
Sex and porn
Started young
(inherently) Worse than gaming because porn is more stimulating
Own experience = expert
Recovery
Masturbating without porn is ok as its based on successful experiences
Watching porn without arousal, collecting, loss of control
Kills your desire to do go out, takes focus from priorities, inexperience, immature views, rubbish with women, didn't fulfil potential, erectile dysfunction, dissociation, inadequacy
Porn addiction
Any use is relapse
Knew when heard a podcast and remembered it later when trying to stop
Socially unacceptable; shame
Dopamine, adrenaline
Dubious experts say its not a problem
Happened because socially awkward, didn't have any guidance
If they don't think theyre addicted then that's just the addiction
Dating got his friends out of excessive porn use

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EXTENDED PAPER

1 Extended Intro

1.1 Section introduction

This section outlines in more detail the background theoretical and empirical literature related to this study. Therefore, research regarding the definitions, terminology, aetiology and effects of pornography are described. Amplification of the research relating to the theoretical frameworks, i.e. values theory and thinking styles is provided. Lastly, clinical implications are discussed, which includes different treatment approaches for individuals who perceive their pornography use to be problematic. This supplementary information serves to amplify the rationale for the study.

1.1.1 Effects of pornography

The issue of whether pornography causes harmful effects on viewers has been and remains controversial (Zillmann, Bryant, & Huston, 2013). In the same way that any received information has an effect on people, pornography is likely to cause a response in viewers (Zillmann et al., 2013), however, research investigating whether that effect is negative or not is inconsistent (Ley et al., 2014). Furthermore, in research which does assert that pornography viewing leads to negative effects for pornography users, the mechanism which causes those negative effects remains unclear, for example if it is the content of the pornography, a person's level of impulsivity, or the way in which pornography is evaluated by the viewer which leads to problems.

As with many sexual discourses, and unlike other contentious issues such as animal welfare, pornography is often discussed concurrently with moral and sometimes religious concerns (religious people are not necessarily anti-pornography) (Kipnis, 1996). Pornography as a sin or demonstrably sexist are two popular arguments used in the debate about pornography censorship (Smith, 1999; Weinberg et al., 2010). Indeed some argue that pornography regulation is driven by fundamentalist group values and norms about pornography and imposed on society as a whole in order to preserve those values and norms (Daynes, 1988; Smith, 1999). Since the 17th Century, Western society has predicated its laws and morality on conservative Christianity. During that time, puritive beliefs asserted that sex (outside of marriage) and masturbation were sinful and a threat to the body (Smith, 1999). Whilst a number of opposing and/or less extreme religions have developed since that time, and both anti and pro arguments span various cultures and religions, the connotation of 'sin' and 'shame', 'good' and 'bad', 'normal' and 'abnormal', have been pervasive and are rife within the sex literature, media and attitudes of sections of today's society (Smith & Attwood, 2014; Weinberg et al., 2010).

Conversely there has been little research investigating the positive effects of pornography, such as its potential educational value, empowerment of women's sexual exploration (Palac, 1995; Tanenbaum,

2004) and safe expression (Barbour, 1995; Duncan, Donnelly, & Nicholson, 1992; Duncan & Nicholson, 1991). Indeed, research which has been unable to find a link between pornography and detrimental effects has been reportedly ignored by those with an anti-pornography world-view (Rubin, 1984; Smith & Attwood, 2014), illustrating that beliefs and sanctions about pornography are not always derived from empirical evidence.

1.2 Pornography Addiction

Researchers claim that self-reported problematic sexual behaviours have reached epidemic proportions (Cooper, 1998b; Freeman-Longo, 1998). Furthermore, the advent of the internet has been accused of complicating this further through its accessibility and anonymity (Cooper, Putnam, Planchon, & Boies, 1999).

1.2.1 Terminology

The appropriate terminology used to describe 'pornography addiction' continues to be debated within the academic literature. Categories such as compulsive viewing (Al Cooper et al., 2004; Young, 2008), impulsive viewing (Shapira et al., 2003), excessive viewing (Pyle & Bridges, 2012), and hypersexual disorder (Kafka, 2010; Kaplan & Krueger, 2010; Reid et al., 2011), are all used, often interchangeably (Duffy, Dawson & das Nair, 2016). The terminology used is politically relevant within research and clinical domains, as each conveys a particular theoretical positioning of 'pornography addiction'.

In order to avoid aligning with any one position, this thesis has mostly utilised the terms 'self-perceived problematic pornography use'. However, although aware of the connotations associated with different labels, this thesis has also utilised the term 'pornography addiction' for ease of reference given its popular and familiar use in wider discourses.

1.2.2 Definitions

Clinically and within research, confusion exists regarding the labels compulsion and addiction, indeed more so in relation to sexual behaviours. A recent literature review (Duffy et al., 2016.) found that pornography addiction is generally poorly defined, relying on descriptions of arbitrary measurements of 'excessive pornography use' and the impact of pornography use on the user's social networks.

Pornography addiction as a standalone empirical concept is still relatively new, and or refuted (Ley et al., 2014). As such, it is often couched within the broader concept of sex addiction or sexually addictive behaviours (McNair, 2014), and online sex addiction (Cavaglion, 2009). Therefore, theories used to explain sex addiction are regularly applied to pornography addiction, and will be drawn upon here.

Up until the 1990's addiction was predominantly conceptualised as the ingestion of a *substance* (Rachlin, 1990) and as such authoritative definitions reflected this, for example;

> "Addiction is a state of periodic or chronic intoxication produced by repeated consumption of a drug, natural or synthetic" (World Health Organisation, 1957, p9).

However, since that time there has been a growing movement towards the proposal, evidence and treatment for *behavioural* addictions such as computer game playing (Griffiths, 1993), exercise (Glasser, 1976), gambling (Griffiths, 1995), and sex (Carnes, 1983), which have stimulated the development of new definitions relating to addictive behaviours:

> ...a repetitive habit pattern that increases the risk of disease and/or associated personal and social problems. Addictive behaviours are often experienced subjectively as "loss of control" –the behaviour contrives to occur despite volitional attempts to abstain or moderate use. These habit patterns are typically characterized by immediate gratification (short-term reward), often coupled with delayed deleterious effects (long-term costs). Attempts to change an addictive behaviour (via treatment or self-initiation) are typically marked with high relapse rates (Marlatt, Baer, Donovan, & Kivlahan, 1988).

Despite this change in how certain addictions are viewed and a separate group of behaviours (behavioural addictions) being identified as different to substance ingested addictions, many theorists assert that in order for them to be clinically identifiable, they should be compared against the clinical criteria for existing substance addictions (Griffiths, 1996; Griffiths, 1991). Thus, in order for an alternative set of addictions to be established as distinct from drug-ingested addictions, they need to be aligned with the criteria for the drug-ingested addictions that they want to be distinct from. This reasoning therefore inevitably means that behavioural addictions are conceptualised similarly to chemical ingested addictions.

Theorists have further proposed that addictions have a number of commonalities which when operationally defined and present can be indicative of a behavioural addiction, including sexually-related behaviours (Table 1).

Table 1. Various commonalities proposed for sexual behaviour addictions

Carnes 1991	Brown 1993	Cooper 1998	Griffiths 2000	DSM-5 Substance use diagnostic criteria.	DSM-5 Gambling addiction diagnostic criteria	Kafka (2010) proposed Hyper-sexuality diagnostic criteria
- A pattern of out-of-control behaviour - Severe consequences due to behaviour - Inability to stop behaviour despite adverse consequences - Persistent pursuit of self-destructive or high risk behaviour - Ongoing desire or effort to limit behaviour - Uses behaviour as a coping strategy	- Salience - Euphoria - Tolerance - Withdrawal - Conflict - Relapse	- Denial - Unsuccessful repeated efforts to discontinue the activity - Excessive amounts of time dedicated to the activity - Negative impact of the behaviour on social, occupational and recreational functioning	- Salience - Mood Modification - Tolerance - Withdrawal - Conflict - Relapse	- Two or more of the following: - Taking the substance in larger amounts or for longer than the you meant to - Wanting to cut down or stop using the substance but not managing to - Spending a lot of time getting,	- Persistent and recurrent problematic gambling behaviour leading to clinically significant impairment or distress, as indicated by the individual exhibiting four (or more) of the following in a 12-month period:	- A. Over a period of at least 6 months, recurrent and intense sexual fantasies, sexual urges, or sexual behaviours in association with 3 or more of the following 5 criteria: - A1. Time consumed by sexual fantasies, urges or

- Increased amounts of behaviour because the current level of activity is no longer sufficient; - Severe mood changes around behaviour; - Inordinate amounts of time spent trying to engage in behaviour and recovering from it; - Important social, occupational and recreational activities are sacrificed or reduced because of behaviour.		- Repetition of the behaviour despite adverse consequences - Relapse		using, or recovering from use of the substance - Cravings and urges to use the substance - Not managing to do what you should at work, home or school, because of substance use - Continuing to use, even when it causes problems in relationships - Giving up important social, occupational or recreational	- Needs to gamble with increasing amounts of money in order to achieve the desired excitement. - Is restless or irritable when attempting to cut down or stop gambling. - Has made repeated unsuccessful efforts to control, cut back, or stop gambling. - Is often preoccupied with gambling (e.g., having persistent	behaviours repetitively interferes with other important (non-sexual) goals, activities and obligations. - A2. Repetitively engaging in sexual fantasies, urges or behaviours in response to dysphoric mood states (e.g., anxiety, depression, boredom, irritability). A3. Repetitively engaging in sexual fantasies,

				activities because of substance use - Using substances again and again, even when it puts the you in danger - Continuing to use, even when the you know you have a physical or psychological problem that could have been caused or made worse by the substance - Needing more of the substance to get the effect	thoughts of reliving past gambling experiences, handicapping or planning the next venture, thinking of ways to get money with which to gamble). - Often gambles when feeling distressed (e.g., helpless, guilty, anxious, depressed). - After losing money gambling, often returns another day to get even	urges or behaviours in response to stressful life events. A4. Repetitive but unsuccessful efforts to control or significantly reduce these sexual fantasies, urges or behaviours. A5. Repetitively engaging in sexual behaviours while disregarding the risk for physical or emotional

				you want (tolerance) - Development of withdrawal symptoms, which can be relieved by taking more of the substance.	("chasing" one's losses). - Lies to conceal the extent of involvement with gambling. - Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling. - Relies on others to provide money to relieve desperate financial situations caused by gambling.	harm to self or others. B. There is clinically significant personal distress or impairment in social, occupational or other important areas of functioning associated with the frequency and intensity of these sexual fantasies, urges or behaviours. C. These sexual fantasies, urges or behaviours are not due to the direct

					- The gambling behavior is not better explained by a manic episode.	physiological effect of an exogenous substance (e.g., a drug of abuse or a medication)

1.2.3 Theories of Addiction

As discussed, there is a lack of agreement as to the existence, nosology and nonclementure of pornography addiction, however, even for those who are in support of the concept of sexual-behaviour disorders, there is a lack of consensus regarding their aetiology (Kafka, 2010). As such, the research landscape is shaped by differing theoretical perspectives such as the addiction model (American Psychological Association; APA, 2013), behavioural addictions (Carnes, 1983), impulsivity disorders (Mick & Hollander, 2006), obsessive-compulsive spectrum disorders (Black, 1998), 'out-of-control' excessive sexual behaviours (Bancroft & Vukadinovic, 2004), and sexually-motivated disorders (Kafka & Hennen, 2003). This section will review a number of popular approaches as relating to pornography addiction where possible, and sex addiction where not.

1.2.3.1 Disease Model of Addiction

Within the dominant model of addiction, addiction is viewed as a chronic and relapsing brain disease (Leshner, 1997), in which the 'victim' has no responsibility for their condition (Satel & Lilienfeld, 2013). The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association [APA], 2013) does not officially use the term 'addiction' although acknowledges that the term is still referenced in clinical and layman language. The manual aligns itself with the theory that an excess of ingested drugs activates the brain's reward system and reward pathways associated with the reinforcement of behaviours (Koob, 2006). Broadly, the medical theory of addiction asserts the activated system produces pleasurable feelings ('a high') and reinforces related behaviours, to such an extent that normal activities may be neglected. Furthermore, some individuals are proposed as having a vulnerable predisposition to developing addictive disorders; a reduced ability for self-control may be indicative of brain inhibitory impairments.

Although primarily related to chemical addictions, this model does encompass behavioural addictions and are referred to, and included within, the 'non-substance-related disorders section' of the DSM-5 (APA, 2013; Grant, Potenza, Weinstein, & Gorelick, 2010).

Evidence which supports problematic pornography use as an addiction is growing (Ley et al., 2014), however, such research often uses definitions and measures which map on to the DSM criteria for addictive disorders (Duffy et al., 2016; Ley et al., 2014), thus relying on circular reasoning that when compared, problematic pornography use is similar to other addictive disorders (Clarkson & Kopaczewski, 2013). Moreover, difficulties with applying an addiction model to problematic pornography use is that it disguises an individual's related choice, responsiveness and decisions (Satel & Lilienfeld, 2013).

1.2.3.2 Impulsivity Disorders

There is great overlap in the literature between impulsivity and compulsivity disorders relating to sexual behaviours, including pornography use (Kafka, 2010), which can confuse the conceptualisation of problematic sexual behaviours. Originally, Barth and Kinder (1987) put forward the concept of impulse control disorder which was aligned with the DSM-III criteria for addiction. However, critics have argued that beyond a label, little explanation was provided other than individuals lacked self-control (Bancroft & Vukadinovic, 2004).

1.2.3.3 Obsessive-Compulsive Spectrum Disorders

Sexual compulsivity is characterised by sexual thoughts, desires and fantasies that are recurrent, intense and distressing and as such interfere with daily functioning (Coleman, 1991, 2003). Coleman (1987, 1990), originally hypothesised compulsive sexual behaviours to be symptomatic of an underlying obsessive compulsive disorder, mediated by the individuals' attempts to reduce anxiety as well as other negative effects such as shame and depression. Obsessions relating to sexual behaviours referred to the all-encompassing sexual fantasy associated with the compulsive behaviours.

Evidence for this framework is also expanding (Winters, Christoff, & Gorzalka, 2010), however, pornography use is often seen as one of many behavioural symptoms of sex addiction, alongside other behaviours such as promiscuity (Kalichman & Cain, 2004) and 'risk-taking' (Kalichman & Rompa, 1995), rather than as a distinct disorder.

1.2.3.4 Sexual Desire Dysregulation

Sexual desire dysregulation can be described as when an individual experiences their sexual thoughts, feelings, and behaviours as distressingly out of control (Winters et al., 2010). Critics have asserted that the evidence base for theories of sexual behaviour disorders have failed to distinguish between healthy individuals and those thought to be disordered (Gold & Heffner, 1998). Furthermore, sexual dysregulation has not been clearly delineated from an elevated sexual desire in the research and it may be that sexual desire is on a spectrum of which one end sits the disorder (Dodge, Reece, Cole, & Sandfort, 2004).

1.2.4 Summary

Different theoretical positions to explain sexual behaviour disorders have been found to overlap, despite assertions each conceptual framework is distinct and independent (Coleman, 1987; Kafka, 2010). As such, it is difficult to discern whether one is superior to another. Moreover, there are a number of methodological limitations within sexually addictive research which can influence how

findings are interpreted (Duffy et al., 2016; Griffiths, 1996). However, given the heterogeneous population of people who perceive their sexual behaviours, including pornography use, to be problematic, it is likely such disorders have multiple underlying aetiologies and each theory may offer some explanatory value (Bancroft & Vukadinovic, 2004; Winters et al., 2010).

1.3 Value Theory

1.3.1 Nature of values

Values are the things that are important to us in life. Each individual may prioritise values differently from one another, and each value is distinguished by the type of goal or motivation that it expresses, therefore values make up a continuum of related motivations illustrated as a circular structure. Competing values are positioned in opposite directions from the centre; complementary values are positioned in close proximity around the circle shown in Figure 2 of each journal paper. The value theory (Schwartz, 1992, 2006) conceptualises values based on six key features generally supported in broader values literature (Schwartz, 2012, p3).

> (1) Values are beliefs linked inextricably to affect. When values are activated, they become infused with feeling. People for whom independence is an important value become aroused if their independence is threatened, despair when they are helpless to protect it, and are happy when they can enjoy it.
>
> (2) Values refer to desirable goals that motivate action. People for whom social order, justice, and helpfulness are important values are motivated to pursue these goals.
>
> (3) Values transcend specific actions and situations. Obedience and honesty values, for example, may be relevant in the workplace or school, in business or politics, with friends or strangers. This feature distinguishes values from norms and attitudes that usually refer to specific actions, objects, or situations.
>
> (4) Values serve as standards or criteria. Values guide the selection or evaluation of actions, policies, people, and events. People decide what is good or bad, justified or illegitimate, worth doing or avoiding, based on possible consequences for their cherished values. But the impact of values in everyday decisions is rarely conscious. Values enter awareness when the actions or judgments one is considering have conflicting implications for different values one cherishes.
>
> (5) Values are ordered by importance relative to one another. People's values form an ordered system of priorities that characterize them as individuals. Do they attribute more importance

to achievement or justice, to novelty or tradition? This hierarchical feature also distinguishes values from norms and attitudes.

(6) The relative importance of multiple values guides action. Any attitude or behaviour typically has implications for more than one value. For example, attending church might express and promote tradition and conformity values at the expense of hedonism and stimulation values. The trade-off among relevant, competing values guides attitudes and behaviours (Schwartz, 1992, 1996). Values influence action when they are relevant in the context (hence likely to be activated) and important to the actor.

1.3.2 Trans-cultural values

Each value is proposed as being universal given that they are grounded in basic universal needs for human existence and survival. This relates to the individual within a social context; an individual must articulate, communicate, and gain cooperation with others in order to pursue their goals. Values operate as the socially approved mental concept and vocabulary used to represent and express goals.

In support of this, research has demonstrated that these values remain stable across cultures, with at least 90% of samples evidencing all 10 basic values. Using either the Schwartz Value Survey or the Portrait Values Questionnaire, research has evidenced the values theory and its structure as being stable within 71 national samples from 32 countries (Bilsky, Janik, & Schwartz, 2010; Davidov, Schmidt, & Schwartz, 2008; Schwartz, 2007). These findings strongly support the notion that values and broader orientations are distinct and can be conceptualised along a motivational continuum universally.

1.3.3 Consequences of values

Actions in pursuit of values have practical, psychological, and social consequences. In practical terms, one action which promotes a particular value may simultaneously contravene/violate a competing value. The individual choosing an action may recognise that alternative actions are psychologically dissonant. A particular action may evoke others to impose social sanctions on that individual by highlighting inconsistences between that individual's actions and other values they profess. Nevertheless, people do pursue competing values without conflict, however, this is done "through different acts, at different times, and in different settings" (Schwartz, 2012, p 12), rather than in one single act.

1.3.4 Dimensions

Schwartz (2012) illustrates each opposing value as being organised along one of two bipolar dimensions. As depicted in both journal articles, these contrasting dimensions are 'openness to

change' and 'conservation' and 'self-enhancement' and 'self-transcendence'. Hedonism shares elements of both dimensions. The former dimension encapsulates the conflict between values that represent independence, mastery, and readiness for change (self-direction, stimulation), and values that represent order, self-restriction, and resistance to change (security, conformity, tradition). The latter dimension encapsulates the conflict between values that represent an interest in the well-being of others (universalism, benevolence) and values that reflect interest in one's own needs and successes (power, achievement).

1.3.5 Values and sexual behaviours

Little attention has been paid to the role of values on sexual behaviours, however, one study conducted in Central and Eastern Europe has found small but consistent correlations between values and sexual behaviours, such as multiple partners, frequency of condom use, and sexual disease history, with particular values predicting risky sexual behaviours (self-direction, stimulation, hedonism, achievement and power), and other values predicting safer sexual practices (universalism, benevolence, conformity, tradition and security) (Goodwin et al., 2002).

Although this particular study was conducted within the context of a rising HIV infection in Central and Eastern Europe, the findings are important for this study as it demonstrates that values are associated with various sexual behaviours. Therefore, these findings support the notion that values may influence how individuals perceive and evaluate their pornography use. In relation to pornography addiction, conflict may occur when there is incongruence between hedonistic[30] value behaviours and traditional value behaviours.

1.3.6 Values and well-being

One way that values are hypothesised to relate to subjective well-being is based on the assumption that the congruence between the person's value priorities and the values prevailing in the environment is essential to well-being (Sagiv & Schwartz, 2000). Researchers have found that individuals may experience difficulties if the values prevailing their social environment are incongruent with their individual values (Feather, 1975; Furnham & Bochner, 1986; Triandis, 1990). When people are able to express and fulfil their values and attain their goals, they are more likely to experience positive well-being. Conversely, people are more likely to experience negative well-being when their

[30] Schwartz defines the hedonism value as "pleasure or sensuous gratification for oneself" which "derive[s] from organismic needs and the pleasure associated with satisfying them" (2012, p5). Other theorists discuss behaviours which Schwartz might class as hedonistic as basic human needs.

situational context restricts or prevents the realization of values. Three mechanisms through which value congruence between an individual and their environment may occur are as follows:

Environmental affordances. An individual's environment offers a set of affordances (Gibson, 1977), of "functional utilities or action possibilities" (Savig & Schwartz, 2000, p187), which may or may not be congruent with their individual values and goals (Pervin, 1992). Congruent environments allow people to express and pursue their values and attain their goals, and are thus more likely to promote positive well-being, whereas incongruent environments block value pursuit and goal attainment, and are thus more likely to promote negative well-being.

Social sanctions. Environments can also be viewed as a set of expectations supported by communicated implicit/explicit sanctions (Getzels, 1969). When the majority share a set of values, the beliefs, values and behaviours associated with them are communicated clearly as normative (Holland, 1997; B. Schneider, 1987; Walsh & Holland, 1992). Individuals who share these prevailing norms are more likely to experience positive well-being through their receipt of social support and reinforcement of their values and beliefs. Individuals who reject the prevailing norms because they are incongruent with their own values, may be "ignored, ostracized, sanctioned, or punished" (Savig & Schwartz, 2000, p187). This would undermine their sense of well-being.

Internal conflict. Conflict may occur when the values an individual acquires in one environment are incompatible with the values endorsed in another. For example, if students internalized conformity values at home, internalizing the self-direction values given priority at University would be problematic. This internal value conflict is likely to compromise an individual's subjective well-being (Oleś, 1991; Schwartz, 1992; Tetlock, 1986).

1.4 Religiosity

Sociocultural factors, including religion, have had a longstanding relationship with sexual behaviours, attitudes and beliefs (Davenport, 1977). Indeed, DeLamater (1981) suggested that the two institutions of family and religion in particular are responsible for the social control of sexuality. Theorists propose that the institution provides a specific set of norms which are endorsed by members of the institution and if violated, sanctions are activated. Sexual behaviours are endorsed as being for reproductive purposes only and so pornography viewing is seen as a violation of these norms, with potential sanctions (DeLamater, 1981; DeLamater & Plante, 2015).

Although the secularisation thesis suggests that as societies progress and modernise, religion is losing its power over social life and governance (Wilke, 2015), religion remains an influential factor in Western society (Grubbs, Exline, Pargament, Hook, & Carlisle, 2015). Whilst religiosity, the level of

importance religion has for an individual, has been shown to be a protective factor against behaviours such as crime and substance misuse, some researchers have asserted that religiosity can influence how individuals express themselves sexually (Short, Kasper, & Wetterneck, 2015). Indeed, some research has shown religiosity to be negatively associated with pornography use, or at least how much religious participants will admit to using pornography (Nelson, Padilla-Walker, & Carroll, 2010), and masturbation in women (Baćak a & Štulhofer, 2011). Of interest to this study, is how religiosity may or may not play a role in how individuals evaluate their pornography use. Grubbs, et al. (2015) found in their study with undergraduate students and a web-based sample of adults, that religiosity was robustly and positively associated with perceived addiction to pornography, and that this relationship was mediated by moral disapproval of pornography use. This relationship still existed when actual use of pornography was controlled for. Moreover, level of religiosity was not found to be related to frequency of pornography use. Carvalho et al. (2015) also found that moralistic attitudes and perceived loss of control was indicative of perceived problematic sexual behaviours.

Religiosity is purported to be inherently linked to the values held by individuals (Schwartz & Huismans, 1995). Theorists suggest that religiosity is positively associated with values that increase social order, transcendence and is negatively associated with values that endorse self-indulgence and intellectual/emotional openness to change (Schwartz & Huismans, 1995). The more a person subscribes to a religious body, the more their norms, attitudes and values are likely to be informed by it. However, according to the value theory (Schwartz, 2012), when our behaviour is incongruent with our values, psychological distress is likely to occur. Recent research has found that religious commitment was negatively associated with sexual congruence, in other words, religious individuals who were more likely to adopt strict morals and values regarding sexual behaviours, than non-religious individuals, were not necessarily more conservative in their sexual practices (Rosenbaum, 2009). Furthermore, low sexual congruence was positively associated with participants' perceptions of problematic hypersexual behaviour and with lower levels of forgiveness (Hook et al., 2015).

1.5 Thinking Styles

As conveyed in the journal articles, self-reported problematic pornography users were significantly more likely to demonstrate rigid and categorical thinking generally and in relation to their pornography use. This appears to be an important characteristic of people who pathologise their sexual behaviours (Keane, 2002).

1.5.1 Personal Construct Theory (PCT)

Originally devised by George Alexander Kelly (1955), PCT proposes "personal constructs" as the unique filters through which people perceive and evaluate events. The individual is positioned as a scientist, formulating constructs, or interpretations of events/situations, which are continuously reviewed and revised in response to new confirmatory or dis-confirmatory information. PCT suggests that meaning is found in relation to 'contrasts' and that individuals make sense of things by evaluating personally significant similarities and differences. The actions people take are in accordance with and reflect the constructs people hold.

PCT consisted of one fundamental postulate and 11 corollary assumptions.

The fundamental postulate states: A person's processes are psychologically channelized by the ways in which he (or she) anticipates events.

The 11 corollary assumptions state:

1. Construction Corollary—A person anticipates events by construing their recurrent themes, or recapitulations.

2. Individuality Corollary—Persons differ from one another in their construction of events.

3. Organization Corollary—Some constructs may subsume other constructs for the convenience of anticipating events.

4. Dichotomy Corollary—Constructs are finite and are dichotomous in nature.

5. Choice Corollary—An individual will choose the behavioural alternatives that appear to present the greatest possibility for enhancing his ability to predict future events.

6. Range Corollary—One construct can't generalize to all events

7. Experience Corollary—All our interpretations of the universe are subject to revision—we only achieve successive approximation to the truth (constructs are working hypotheses which can be revised).

8. Modulation Corollary—The variation in a person's construct system is limited by the permeability of its superordinate constructs.

9. Fragmentation Corollary—A person may successively employ a variety of construction systems which are inferentially incompatible with each other.

10.Commonality Corollary—To the extent that one person employs a construction of experience which is similar to that employed by another, his psychological processes are similar to those of the other person—how two people with different experiences can have similar constructions of events, like kindred spirits.

11. Sociality Corollary—To the extent that one person construes the construction processes of another, he may play a role in a social process involving the other person—empathy and social relationships.

Psychological well-being relies on the individual's capacity for flexibility and ability to revise their personal constructs based on evidence (Walker & Winter, 2007). If an individual is unable to revise their personal constructs, and/or they are relatively impermeable, then they may experience conflict and negative psychological well-being when confronted with information that is incongruent (Horley, 2008; Winter, 2013). In relation to pornography use, if a person is unable to flexibly revaluate their pornography use as being acceptable then they may pathologise their behaviour.

1.5.2 Attributions

Attribution theory posits that the process we go through to explain and give meaning to other people's behaviours, and our own, is subject to cognitive errors and attribution biases (Brehm et al., 2002). Therefore, the meaning we give to our pornography use (viewing it as problematic or not) may be subject to cognitive errors and/or attribution biases.

Research has also found that the attributions individuals hold about certain behaviours can be influenced by the explanations they are provided about the behaviour. For example, whether a behaviour is explained as biologically or socially driven can influence the level of responsibility we place on individuals who exhibit the behaviour, which in turn impacts on our intentions towards others who have that behaviour (Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003). Therefore, explanations given in relation to pornography-use behaviour may influence our attitudes and intentions towards those people who use pornography. In relation to treatment, differences between social and individual perceptions of pornography-related behaviours would be important to identify and highlight, given that clinicians would aim to increase an individual's own agency. For instance, in the context of an individualistic explanation for pornography addiction, an individual's sense of agency may be increased following beliefs that such behaviour is in their control, compared to a social explanation for their pornography use. A qualitative methodology makes capturing these attributions possible.

1.6 Shame

Research investigating the effects of shame on mental well-being (Gilbert, 2010) has evidenced that those high in shame are more prone to self-critical thinking, mental-health disorders, reduced self-compassion and sexually-problematic behaviours (Gilbert, 2010; Harman & Lee, 2010). Therefore, treatment which does not address these constructs is unlikely to be effective and may possibly be harmful.

Theorists suggest we take two actions in response to shame (Gilbert, 2010). We can detoxify the threat and/or increase support and compassion. With pornography use, we might feel compelled to stop the behaviour (detoxify) and seek support from others who experience the same (identification with other 'pornography addicts'). When group shame occurs, the group becomes motivated to distance itself from the threat and thus restore its self-image (detoxify) (Lickel, Schmader, Curtis, Scarnier, & Ames, 2005; Lickel et al., 2011). For example, a conservative social group might distance itself from a pornography user by supporting the label of 'pornography addict', thus identifying that individual as belonging to another group. By examining the concept of problematic pornography use within the framework of shame, we can appreciate how the way we evaluate our behaviour (as being shameful or not) may be the problem rather than the pornography use itself (Schwartz, Galperin, & Masters, 2008).

1.7 Measures

The quantitative journal paper briefly describes each of the measures used to assess the independent variables. Here they will be critically explored in more detail. A sample of each measure is provided in the appendices due to copyright reasons (see Appendix A, B, C, D).

1.7.1 Thinking Styles: Inventory of Cognitive Distortions (ICD) (Yurica & DiTomasso, 2002)

This measure was used to capture the extent to which participants used different cognitive distortions. This measure has been used in a range of studies, using both clinical and non-clinical samples, to measure the relationship between cognitive distortions and psychological and behavioural factors (Uhl, 2007), parental stress and child psychopathy (Kennedy, 2012), anger (Latella-Zakhireh, 2009) and burnout (Diefenbeck, 2005), as well as with a variety of representative samples including the community (Roberts, 2015), and healthcare staff (Diefenbeck, 2005).

The original measure was based on 11 factors which represented 11 cognitive distortions: Externalization of Self-Worth, Fortune Telling, Magnification, Labelling, Perfectionism, Comparison

with Others, Emotional Reasoning, Arbitrary Inference/Jumping to Conclusions, Minimization, Mind Reading, and Emotional Reasoning and Decision-Making.

Other measures of cognitive distortions do exist however there are few which comprehensively measure the cognitive distortions typically cited in the literature (Covin, Dozois, Ogniewicz, & Seeds, 2011). One measure which does do this is the Cognitive Distortions Scale (CDS; Covin et al., 2011). This assesses the tendency to utilise 10 cognitive distortions within interpersonal and achievement domains. However, at the time of this study, this measure had only been validated using a student population, and factor analysis had only supported the use of a one-factor model. Moreover, the measure assessed cognitive distortions occurring in only two domains (Covin et al., 2011), whereas this study was interested in the influence of thinking styles more broadly, i.e. occurring in various aspects of an individual's life. For this latter reason, alternative measures of cognitive distortions were also deemed unsuitable for this study as they focussed on specific areas of an individual's functioning such as bulimia (Schulman, Kinder, Powers, Prange, & Gleghorn, 1986), and video lottery terminal users (Jefferson & Nicki, 2003).

Other measures of thinking styles available and considered included The Relationship of Decision-Making Styles and Attributional Styles in Addicted and Non-addicted Men (Shaghaghy, Saffarinia, Iranpoor, & Soltanynejad, 2011a) and The Relationship of Early Maladaptive Schemas, Attributional Styles and Learned Helplessness among Addicted and Non-Addicted Men (Shaghaghy, Saffarinia, Iranpoor, & Soltanynejad, 2011b). These measures were validated in studies which demonstrated that addicts of substances were less rational in their decision making and that addicts who had developed learned helplessness were less rational, without an optimistic attribution style, and were more likely to be less successful in treatment. Although these measures were relevant to our study, in that they assessed different types of thinking styles, they were only devised for male participants. Given that this study wanted to add to the female sexually-related evidence-base, these measures were deemed unsuitable. Moreover, both measures were derived from the perspective that addictions were the result of a biological aetiology, which may have been incongruent with the perspective of our study.

Despite the strengths of the ICD, previous literature has shown that the measure is not particularly stable and so for this study we conducted a PCA to see how the ICD best fit this study's sample (see section 3.1.2.3 for more detail).

1.7.2 Shame: Test of Self Conscious Affect-3 (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000).

Since the increase in the clinical interest of shame, there have been a wealth of measures developed to assess shame (Robins, Noftle, & Tracy, 2007). Earlier measures tended to assess guilt and shame as components of the same construct (Buss & Durkee, 1957; O'Connor, Berry, Weiss, Bush, & Sampson, 1997), however the two have since been shown to be distinct from one another. As a result, those measures confounded shame and guilt and made it difficult to assess their individual influences on psychological functioning, whilst also potentially providing misleading results (Tangney & Dearing, 2003). Another important discrimination is between shame and self-esteem, and shame and embarrassment. A number of researchers attempted to theoretically differentiate between these constructs in their measures (Cook, 1994; Izard, Libero, Putnam, & Haynes, 1993), however this differentiation has been criticised for being too vague and not reflected in the items (Tangney & Dearing, 2003). For instance, the Internalized Shame Scale (Cook, 1994) asks participants to rate items which are closely associated with self-esteem issues (e.g. 'I feel like I am never quite good enough'), and consequently the measure is highly correlated with high measures of self-esteem (-.52--.88).

An assumption underlying a number of measures distinguishing between shame and guilt, such as the Beall Shame-Guilt Test (Beal, 1972) and the Forced-Choice Guilt Inventory (Mosher, 1998), is that it is the situation an individual is in, which elicits either shame or guilt. However, there has been a growing body of literature which disputes this notion, instead supporting the idea that shame and guilt can be delineated by differences in the focus on the self vs the behaviour; the experience of shame is related to an evaluation about the self, whereas the experience of guilt is related to the evaluation of the behaviour (Lewis, 1971).

Measures can also be differentiated by the methods they use. Alternative measures, such as the Revised Shame-Guilt Scale (Hoblitzelle, 1982), Other as Shame Scale (Allan, Gilbert, & Goss, 1994), and Personal Feelings Questionnaire-2 (Harder & Zalma, 1990), use global adjective checklists to ask participants to rate how well each adjective describes their self. Whilst these approaches have face validity, in that they appear to be measuring shame, often their language is complex (Hoblitzelle, 1982), and participants are expected to differentiate between abstract conceptualisations of shame and guilt (Harder & Zalma, 1990). Finally, these methods also fail to create a situational context of shame or guilt which then limits the assessment of participants' dispositional tendency to experience shame and guilt (Tangney, 1995, 1996; Tangney & Fischer, 1995).

In light of the above, a scenario-based measure was chosen for this study. The TOSCA-3 has evidence to support its discriminant validity, and has been demonstrated to effectively measure an individual's dispositional position to experience unconscious emotions. (Luyten, Fontaine, & Corveleyn, 2002; Tangney, Dearing, Wagner, & Gramzow, 2000a, 2000b). The original TOSCA was found to correlate highly with measures of self-esteem, however, the revised TOSCA version 3 has since been found to have adequate discriminant validity (Luyten et al., 2002).

1.7.3 Social Desirability Responding: The Balanced Inventory of Desirable Responding (BIDR-6; Paulhus, 1994)

It was important for this research to measure participants' social desirability responding and impression management given the sensitive nature of the research topic. In addition, research has shown that social desirability responding is more likely to occur on computer administration of attitude questionnaires than a paper and pencil version (Lautenschlager & Flaherty, 1990). Therefore, a measure of social desirability responding ensures that responses on the other measures are not confounded by a bias in participants portraying themselves positively.

There exists an increasing wealth of measures designed to assess impression management in participants' responses (Blasberg, Rogers, & Paulhus, 2014; Randall & Fernandes, 2013). However, the measure that is perhaps the most frequently used in research is the BIDR-6 (Paulhus, 1994). In part, its prevalent use is likely to be influenced by Paulhus giving users free access to information on validity, reliability, and norms, as well as distributing a free reference manual for using the BIDR-6, however, various studies have proven the measure to be a valid and reliable assessment of social desirability and impression management (Paulhus, 1994; Stöber, Dette, & Musch, 2002).

A critique of this measure is regarding its scoring methods. Paulhus recommends that researchers use dichotomous scoring methods, with the assumption that this guarantees that high scores are obtained from only exaggerated responses. However, many researchers choose the continuous method with the assumption that social desirability and impression management are not all-or-nothing processes. In addition, extreme answers may miss participants who tend to respond desirably but avoid extreme scoring. Furthermore, dichotomous scoring may add error to measurement scores and reduce the reliability and validity of results (Cohen, 1983; Gulliksen, 2013; Lord, Novick, & Birnbaum, 1968; Stöber et al., 2002). Although there is a dearth of research investigating the best scoring methods for the BIDR-6, Stöber et al. (2002) in their research found that continuous scoring was superior to dichotomous scoring. Therefore, in our study we used continuous scoring.

1.7.4 Pornography Consumption Effects Scale (PCES; Hald & Malamuth, 2008)

The authors of this measure described each subscale as creating the basis for the overall Positive Effect Dimension (PED) and an overall Negative Effect Dimension (NED):

> 1. Sex Life (SL) (5 items for PED; 8 items for NED). The SL construct was used to explore effects of consumption on one's sex life and sexual behaviours (e.g., effects on the frequency of sexual activity, sexual experimentation, and sexual performance).
>
> 2. Life in General (LG) (4 items for PED; 4 items for NED). The LG construct was created to investigate effects of consumption on life in general (e.g., on the quality of life, satisfaction with life, and problems in life).
>
> 3. Perception of and Attitudes Toward the Opposite Gender (PATOG) (4 items for PED; 3 items for NED). The PATOG construct was used to tap into effects of consumption on the perception of and attitudes towards the opposite gender (e.g., stereotypical perceptions of gender, friendliness toward and respect for the opposite gender).
>
> 4. Attitudes Toward Sex (ATS) (5 items for PED; 5 items for NED). The ATS construct was created to investigate effects of consumption on Attitudes Toward Sex (e.g., opinions, views, and outlook on sex).
>
> 5. Sexual Knowledge (SK) (9 items, PED only). The SK construct was used to examine effects of consumption on knowledge of sex and sexual desire (e.g., masturbation, sexual foreplay, oral, vaginal, and anal sex, sexual fantasies, and sexual desires).

For the purpose of this study, the measures were adapted to include questions regarding 'Perception of and Attitudes Toward the Same Gender (PATSG)' (4 items for PED; 3 items for NED). This was to minimise sexual preference bias and ensure that participants from any sexual orientation were able to respond.

This measure was chosen for the study for a number of reasons. Firstly, it considers potential positive effects of pornography. Given that the literature base pertaining to sex and pornography operates predominantly from a negative stance (Ley et al., 2014), measures of pornography consumption often only focus on the negative effects (Duffy et al., 2016). Therefore, the PCES offered a more balanced approach to investigate the potential effects of pornography consumption. Secondly, the measure is based on self-perceived effects which was felt to be more appropriate than using an objective measure from which the authors would determine whether pornography viewing yielded negative effects. The literature review found that a number of authors would use arbitrary cut-offs to indicate whether an

individual was addicted to pornography, or suffered negative effects, which ran the risk of leading to unreliable and inconsistent findings. Additionally, the authors of the measure have demonstrated high reliability and validity scores as offered in the journal paper. Lastly, recent research using the scale has shown the measure to be consistent across cultural and geographical boundaries (Wijaya Mulya & Hald, 2014), and with people of varied sexual orientations (Bishop, 2015; Hald, Smolenski, & Rosser, 2013); this is important given that our research is conducted online and participants across the globe can take part.

1.7.5 Level of Religiosity

Given that a review of the literature suggested level of religiosity is associated with seeking treatment for pornography use and its conflict with religious values (Grubbs, Exline, et al., 2015; Twohig et al., 2009; Winters et al., 2010), it was therefore deemed important for this study that participants' level of religiosity was obtained.

Existing studies generally gather this data in different ways, for example some authors will ask participants how much religion played a role in their upbringing (Koenig, 2012; Storm, 2012), whilst others might ask how often participants practice their religion (e.g. pray) (Iannaccone, 1990). However, for this study the salience and intensity of religion to a participant was of particular importance. Therefore, this study asked participants to rate how much their religious beliefs impacted on their day-to-day life using a 4-point Likert-scale (1=not at all, 4=very much). There are limitations to using a single-item measure to assess level of religiosity, for instance, it may be unclear as to how the individual is determining the *level* of religiosity; how many times they pray or how much religious values influence their decision-making. However, given the subjective influence of religion was of primary importance, this single-item measure was deemed appropriate for this study.

1.8 Clinical Implications

1.8.1 Treatment

As discussed, pornography addiction has been conceptualised in a variety of ways that reflect the perspectives of the authors. However, this process can risk omitting important cultural influences, comorbidities, and the presentation and course of the individual, and ideally treatment would be responsive and tailored each individual (Stewart & Fedoroff, 2014).

1.8.1.1 Dominant treatment approaches

Existing treatment approaches for pornography addiction and online sex addictions predominantly derive form a 'brain disease' model of addiction and therefore focus on the removal of pornography

and facilitators (i.e. computer) from the 'addict' and symptom reduction (Young, 2008). Abstinence is proposed as the first line of treatment, although it is acknowledged that this is harder than other addictions given the universal usage for the internet, for instance, for work, study, etc. therefore software which prevents access to adult explicit sites are recommended (Carnes, 2001)

If we adopt the dominant approach to problematic sexual behaviours, that is, individuals need to stop doing the specific behaviours and adhere to relapse-prevention plans for long term management; we are led to abstinence-based treatments such as the self-help 12-step programmes (Goodman, 1998). 12-step programmes were originally proposed for treatment for alcoholics, the first being known as Alcoholics Anonymous (AA), but have since diversified to cover any number of addictions and share 12 principles and traditions which embody a spiritual ethos to recovery; Narcotics Anonymous (NA), Cocaine Anonymous (CA), Overeaters Anonymous (OA) and Sex Addicts Anonymous (SAA).

However, much controversy surrounds 12-step programmes (Stewart & Fedoroff, 2014). The original 12-step programme was written in 1935 by two ex-alcoholics, one of whom attributed his sobriety to a spiritual awakening (Alexander & Rollins, 1984). Both men had received treatment (unsuccessfully) from a Christian fellowship group and were influenced as such so that the AA principles were grounded in Christianity. Due to the development of AA not being grounded in theory, some critics have questioned its utility and that of other 12-step programmes (Read, Kahler, & Stevenson, 2001). Whilst research has been mixed, some findings have shown AA to be effective when used alongside Cognitive Behavioural Therapy and medical interventions (Bristow-Braitman, 1995; Fiorentine & Hillhouse, 2000). In comparison, research has found 12-step programmes not to be an effective treatment for addictions and that the central components are misguided, in that the treatment needs do not match the treatment aims (Wright, 2010). If this is the case, treatment employing the same model to address other 'addictive behaviours', i.e. sex or pornography addiction, is not likely to be any more effective.

A further point of contention in addiction treatment literature is that 12-step programmes expect participants to admit powerlessness over their addiction (Bristow-Braitman, 1995), something which Marlatt and Gordon (1985) propose is likely to contribute to a relapse. Researchers have identified a difference between people who lapse in their addiction (a slip up) and return to being abstinent, compared to others who experience a lapse which in turn leads to a relapse (a full blown return to their addiction). This is termed the Abstinence Violation Effect (Marlatt & Gordon, 1985) which posits that those who attribute any lapse to stable, global and internal factors which are beyond their power

to change, are more likely to experience a relapse than those who believe they can cope with a lapse or high risk situation.

Aside from treatment outcomes, there are concerns that 12-step programmes resemble a cult methodology and warn of iatrogenic effects (Alexander & Rollins, 1984). Part of the treatment's philosophy is to confess one's sins to the group and to a Higher being (i.e. God) and researchers argue this can foster moral dichotomy and create feelings of shame and guilt (Alexander & Rollins, 1984). Lifton (1961) describes characteristic cult mechanisms which researchers assert can be identified within 12-step programmes, such as the demand for purity with the notion that "good is defined as those thoughts, feelings, and actions which are consistent with the ideology of the group" and is blasphemous to question (Alexander & Rollins, 1984, p 35). In light of this, a number of concerns are raised; there is a plethora of research which stresses the detrimental effects of guilt and shame on one's mental health and recovery (Gosling, 2000; Webb, Heisler, Call, Chickering, & Colburn, 2007). Webb et al. (2007) defined shame as a "negative evaluation and affect directed toward the entirety of the self, often following a breach of social or moral conduct." and guilt as "the individual (being unable) to make a cognitive distinction between the self and behaviour, and negative evaluation (being) restricted to the act of wrongdoing itself." (p1144) If individuals are led to believe that their behaviour is not in line with the ideology of the 12-step programme, which is 'good', then by default they are led to believe they are 'bad'.

In relation to this, research has attempted to ascertain what actually constitutes as 'bad' or abnormal pornography use using normative data, however findings suggest that although pornography use is variable it is in fact normal (Carroll et al., 2008). These findings may go some way in helping to us to understand why studies which examine existing treatment models have found that simply stopping 'forbidden' behaviours is not working suggesting wider issues may be contributing to subjective distress to pornography use, such as values and thinking styles.

1.8.1.2 Alternative treatment approaches

Clinical experience supports the notion that other variables may be involved when people pathologise their pornography use, particularly rigidity of thinking (das Nair, personal communication, February 10, 2014; Reid et al., 2009), indicating that treatment needs may differ to those identified in the dominant treatment approach for addictions (Ley et al., 2014; Twohig & Crosby, 2010).

1.8.1.2.1 Acceptance and Commitment Therapy (ACT)

ACT aims to address six inner processes with the view to reduce their influence on overt behaviours and increase the influence of other inner experiences on overt behaviours. In the case of pornography viewing, ACT might aim to reduce the urge to view and increase values related to meaningful activities.

> Specifically, inner experiences are targeted through addressing acceptance (willingness to experience inner experiences and not work to regulate them when useful), defusion (experiencing inner experiences as they are without additional verbal functions), self as context (experiencing oneself as the context in which inner experiences occur and not being defined by inner experiences), being present (noticing inner and outer experiences as they occur, nonjudgmentally), values (defining areas of life that are important that one is willing to work toward), and committed action (moving in the valued direction). Ultimately, this work will foster psychological flexibility, which is the ability to move in a meaningful direction without particular regard for any inner experience (Twohig & Crosby, 2010, p287).

A review of the literature investigating the effectiveness of ACT as a treatment for biological and behavioural addictions does show support for this method of treatment (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes et al., 2004). Specifically related to problematic pornography viewing ACT has shown to increase psychological flexibility and reduce unhelpful thinking styles such as thought-action fusion (Twohig & Crosby, 2010). A randomised clinical trial of ACT for the treatment of compulsive pornography use, showed a 93% decrease in hours of pornography viewed per week (Crosby, 2011). Although frequency of viewing has been shown to be unrelated to perceived pornography use, the study did also find increases in participants reported quality of life and improved behavioural self-report results.

This type of therapy is relevant to the thesis in that it offers an alternative theoretically-driven and evidence-based approach to working with values and thinking styles which are hypothesised to influence how pornography viewers pathologise their viewing behaviours. Furthermore, ACT emphasises the role of cognitions in developing and maintaining psychological distress, as distinct from the actual behaviour itself.

1.8.1.2.2 PCT

PCT is an alternative approach to treating individuals who pathologise their pornography use without focusing on just their sexual behaviours which may serve to shame the individual and validate their anxieties. The goal of PCT in therapy is to: 1) help the person increase their flexibility of thought and constructs and 2) help the person to make better predictions of their environment. In relation to

problematic pornography viewing, PCT therapists would aim to view the world as the client sees it, for instance, view the client's pornography use and perceived internal and external consequences, in order to help increase the individual's psychological flexibility in how they perceive and evaluate their behaviours and thus modify their construct of 'pornography' and 'pornography viewing'.

1.9 Aims

The primary aim of this study was to compare participants who perceived their pornography use to be problematic (porn-addict) with individuals who did not (non-addict) on the following dependent variables: thinking styles, shame, desirability responding, levels of religiosity, and perceived effects of pornography use. As this was an exploratory approach a two-tailed hypothesis was employed.

The secondary aim of the study was to capture in-depth qualitative experiences participants had with pornography.

The objective of these aims were to help answer the following research questions:

- Do thinking styles play a role in whether people pathologise their pornography use?
- Are there any similarities and differences on the measures of thinking styles, shame, desirability responding, religiosity, and perceived effects of pornography use between the three groups?
- What are the similarities and differences in the three groups' views of pornography?
- What are the similarities and differences in the three groups' explanations of problematic pornography use?

In light of the findings, the study then explored the clinical implications.

2 Extended Methods

2.1 Overview

This section provides a critical account of the empirical research reported in both journal papers. Specifically, reasons for why a mixed-method approach was adopted, the epistemological position, and ethical issues will be offered. Following this, details of the procedure and quality criteria used to direct and evaluate the data will be given. Outlined in this extended paper are also details of supplementary analyses conducted, relevant to the research aims.

2.2 Study Design

This study used a mixed-method sequential explanatory design (MMSE) based on the premise that using both qualitative and quantitative analysis provides a more thorough insight into research questions (Creswell, 2013). Segal (1993) argued that using only quantitative data ignores the meaning of context and, given our complex relationship with and diverse experience of pornography (Attwood, 2005; Hardy, 1998), it is more suitable to apply a broader focus (Attwood, 2005) that mixed-methods designs allow.

When using a MMSE design, the priority, implementation and integration of the two phases must be considered (Ivankova, Creswell, & Stick, 2006). Whether priority is given to the qualitative or quantitative phase, or both, can be decided before or during the research process (Ivankova et al., 2006). Initially, researchers prioritised the quantitative phase as the questionnaire was the recruitment route for the qualitative phase. However, once the qualitative phase began, priority was placed on both phases. In a sequential explanatory design, data is collected in two consecutive phases the first, quantitative phase of the study focused on identifying thinking styles, shame, desirability responding, levels of religiosity, and perceived effects of pornography use in those who self-identified as having a problem with their pornography use and those who did not. The second, qualitative phase used semi-structured interviews to focus on exploring participants' views and experiences of pornography and pornography addictions.

As discussed, due to the way in which the study was written for publication, i.e. the separate methodological components were divided into two papers, integration of the two phases takes place in the discussion and reflective sections.

2.3 Philosophical Assumptions

Both qualitative and quantitative research approaches are underpinned by different philosophical assumptions about what constitutes a reality (ontology), and how we learn about this reality (epistemology), therefore determining the methodology (Harrits, 2011). Broadly, quantitative

research derives from a positivist philosophical position and seeks to 'operationalise' and test underlying constructs as 'observable behaviours'. There is only one 'truth' and subjective researcher preconceptions should be set aside in way of objective facts. Conversely, qualitative research stems from constructionism and seeks to explore persons' 'perceptions' and 'experiences' as well as the researcher's impact on the research process (Barker, Pistrang, & Elliott, 2002). Where quantitative approaches seek to find generalizable findings, qualitative approaches believe them to be undesirable (Johnson & Onwuegbuzie, 2004). Due to these fundamental differences, the two approaches are often viewed as incompatible and even mutually exclusive (Howe, 1988).

However, others argue that a mixed-methods approach can be employed and that researchers can shift between different perspectives depending on the methodology used (Harrits, 2011). Furthermore, pragmatists reject the dichotomy between positivism and constructionism and assert that they exist on a continuum. Instead, the research question and findings are key, rather than the epistemological position. Research sitting in-between seeks to synthesise the information that different philosophical positions and their associated research methods endorse (Teddlie & Tashakkori, 2009). Mixed-methods researchers propose pragmatism as the philosophical position which reflects this orientation (Denscombe, 2009; Teddlie & Tashakkori, 2009), where the notion of 'what works' applies well to selecting the methods that 'work' best to address a study's problem and questions (Creswell, 2013; Creswell, Klassen, Plano Clark, & Smith, 2011; Creswell, Shope, Plano Clark, & Green, 2006). Given that the research question is grounded in cultural and shared values, and the knowledge derived from participants is based on their experiences, this research was conducted from a pragmatic position. Furthermore, a MMSE design was deemed as well suited due to its clear structure and shift between a quantitative phase which investigated underlying theoretical processes, and a qualitative phase which explored participants lived experiences. Here, pragmatism accepts that positivist measures such as psychometric assessments can be used to identify group traits but that constructionism methods are needed to further access underlying constructs.

This approach allows researchers to avoid philosophical debates about the best approach to conduct research. Instead, pragmatism affords the freedom to draw on a number of methods, techniques and procedures the researchers deem as useful to the study (Cresswell, 2013). Researchers adopting a pragmatic position acknowledge that each method has its limitations whilst also being complementary to alternative approaches. In addition, being able to utilise various appropriate methods enables triangulation; using multiple data sources enables data triangulation and multiple methods enables methodological triangulation (Cresswell, 2013).

Similarly, pragmatism is appropriate for an inductive-deductive thematic analysis approach employed in this research, in that themes can emerge and existing theories can be tested in the data (see Section 2.8.1).

2.4 Ethical Issues

2.4.1 Ethical Approval

Ethical approval to conduct the study, and to use a recruitment poster (see Appendix E) in the waiting room of a National Health Service (NHS) sexual health clinic, was obtained from the University of Nottingham, The National Institute for Social Care and Health Research Academic Health Science, and the NHS Research and Development department (see Appendix F). The study was conducted in accordance with the Department of Health (DoH, 2005) 'Research Governance Framework for Health and Social Care' and the BPS' recommendations for ethical practice in psychological research online (Hewson & Buchanan, 2013).

During the course of the project, ethical approval was sought to modify the recruitment process. This involved devising and advertising a direct recruitment route to the qualitative component of the study, instead of only through having completed the quantitative component (see Appendix G).

2.4.2 Consent

Before consent was sought, participants were provided with an information page detailing the nature and purpose of the study (Appendix H). Agreement to these statements was regarded as consent and written informed consent was not sought (Hewson & Buchanan, 2013). The information page detailed both the quantitative and qualitative components. If participants chose to provide their contact details for interview; that was regarded as consent for the qualitative component. Participants were made aware of this before being asked to provide their details. Verbal consent was again obtained for the qualitative component at the time of the interview and recorded.

Participants recruited from the National Health Service (NHS) sexual health clinic were informed that participation in and/or withdrawal from the study would not in any way affect the care they received.

2.4.3 Confidentiality

Confidentiality was very important given the sensitive nature of this study. To encourage honest answers and an open dialogue, all participants were assured of confidentiality. The quantitative component of the study was anonymous. Each participant who took part in the qualitative component was assigned a pseudonym for use on study forms, other study documents and the electronic

database. Qualitative data was not explicitly linked to quantitative data to maintain confidentiality. To further ensure confidentiality, participants from the qualitative component were not asked demographic data, however they were asked if they perceived their pornography use to be problematic or not.

2.4.4 Pornography

It was anticipated that some participants may experience discomfort in lieu of the questions involved in the research. Therefore, lengths were taken to ensure participants were informed that they could withdraw from the study at any time. Moreover, qualitative participants were informed of the broad interview questions. As a further provision the research poster was advertised in appropriate places whereby participants could copy or scan the QR code in private (i.e. behind toilet doors).

2.4.5 Risk of harm

Given the sensitive nature of the study and the online recruitment methods (e.g. advertising on both pro and anti-pornography websites), there was consideration about the risks for the researchers in this study. Therefore, it was agreed that interviews would be terminated immediately if participants acted in a way that was deemed inappropriate. This was made clear in the information sheet and at the beginning of the interviews. If participants disclosed any information that was indicative of risk to themselves or others (or illegal) then the interview would be terminated immediately. If sufficient information for a risk assessment/legal intervention was provided, this would be passed on to the appropriate agencies. Participants were made aware of this before consenting to take part.

During the study, there was one potential risk-related incident which required discussion within supervision. One participant emailed myself a link to an online blog (in the public domain) which detailed his relationship with pornography and his incestuous relationship with his younger brother. The blog described how this relationship started when the interviewee was nine years old for at least seven years. Following consultation with Dr Roshan das Nair and Dr Dave Dawson about the potential legal issues and a review of the confidentiality and risk contract in the study proposal, we agreed that the police need not be informed as the information already existed in the public domain, and so was not deemed a 'disclosure'. Anecdotally, the particular participant did not make reference to this during the interview.

Information was also provided to participants about support services as well as the contact details of the researchers and information regarding the NHS complaints procedure in the event that they needed support in relation to any issues which may have arisen as a result of the study.

2.4.6 Data Collection

All questionnaire data was collected via an online survey and all interviews were conducted either through the audio function on Skype© or over the telephone. These methods were primarily used to enable participants who were not based in Nottingham to take part in the study, as well as to ensure confidentiality. Researchers have argued that key information is missed from interviews which are not conducted face-to-face, however these features are generally more relevant for methods of analysis other than TA (Irvine, Drew, & Sainsbury, 2013). Furthermore, whilst researchers have highlighted the advantages of using the internet to research sexually related topics, such as anonymity and accessibility, ethical issues have also been raised. Issues relating to the recruitment, consent, and data collection have been highlighted, therefore this study was devised with these cautions in mind (Binik, Mah, & Kiesler, 1999).

Interviews lasted approximately 1 hour, and were audio recorded using a Dictaphone (Olympus DS-30). The interviews were transcribed by a professional transcriber who had signed a confidentiality agreement (see Appendix I). In line with qualitative research recommendations, the quality of the transcripts were assessed against the audio recordings, and subsequent amendments were made (Braun & Clarke, 2006; Creswell et al., 2011).

An interview schedule was devised (see Appendix A in the quantitative journal paper) which follows relevant guidance to include descriptive, structural, contrast, and evaluative questions (Spradley, 1979). This was to maintain integrity to the research question, however participants were invited to discuss their views of and relationship with pornography and pornography addictions freely. Using the questions advised by Spradley (1979) and allowing participants to freely discuss their ideas allowed for more rich and detailed data (Willig, 2013). I was also mindful during the interview to position myself as neutral to the research topic in order to reduce any bias which an 'anti-pornist' or 'pro-pornist' stance may have created. However, adopting a neutral positon would have inevitably influenced our interactions in some way.

2.5 Participants

2.5.1 Inclusion and Exclusion Criteria

This study targeted both male and female adults who used pornography and who either perceived their pornography-use to be a problem or not. Research is variable as to whether gender differences exist in relation to sexual behaviours (Hald & Malamuth, 2008), however researchers agree that females are under-represented in the sexually-related literature, therefore this study sought to contribute to the debate (Attwood, 2007; Odlaug & Grant, 2010; Raymond, Coleman, & Miner, 2003).

Given that pornography is illegal for people under the age of 18, participants had to be 18 years old and above and were required to confirm this before taking part in the study. Participants were also informed that this study was only interested in legal activities shown in pornography and were asked to confirm that they viewed only legal pornography. This was to avoid legal issues which may arise when discussing illegal practices such as paedophilia, as well as the cognitive complexities which may be involved in illegal sexual practices.

For the qualitative component, 11 participants volunteered to take part. Overall, the sample was representative of individuals who differed in their perceptions about their own pornography use.

2.5.2 Sample Size

The data was tested by a Multivariate Analysis of Variance (MANOVA). The information described below was used to find (in an a priori power analysis) that the current study needed to recruit at least 63 participants to have sufficient power (.80) to detect any significant differences.

G*Power 3.0 software (Faul, Erdfelder, Lang, & Buchner, 2007) was used to calculate sample size based on: alpha = 0.05 f (effect size) = .24 [based on previously found effect size of the various measures used] power = 0.8 number of groups = 3 response variables = 4 [ICD, PCES, BIDR-6, TOSCA-3]. An estimated sample size of 63 was considered realistically obtainable. It was anticipated that this sample size would be obtained for the non-perceived problematic pornography group before the perceived problematic pornography group. Despite a protracted recruitment period and efforts to target self-perceived pornography addicts, recruitment for this group only reached 34 participants.

For qualitative analysis, large sample sizes are not deemed necessary for analytic outcomes as extensive variations in themes can emerge from small sample sizes (Guest, Bunce, & Johnson, 2006; Potter & Wetherell, 1987). Guest, Bunce and Johnson (2006) posited that sample size is of less importance in qualitative research and that theme saturation can be realised after 12 interviews. However, Dey (1999) suggested 'theoretical sufficiency' was more appropriate for qualitative research

than 'theme saturation'. This is when the depth of data allows for an adequate analysis. Giugliano (2006) interviewed 14 men for a qualitative study exploring out of control sexual behaviours, whilst Lofgren-Martenson and Mansson (2010) conducted 22 individual interviews in their qualitative study examining adolescents' perceptions and experiences of pornography use. In the context of this previous research, we aimed to interview up to 20 participants, with an equal split between self-defined addicts and non-addicts. However, within our recruitment period, a total of 11 participants were interviewed. Five interviewees self-defined their pornography use as problematic, three self-defined their pornography use as somewhat problematic, and three individuals self-defined their pornography use as non-problematic[31].

2.6 Recruitment

A purposive maximum-variation sampling strategy was used to recruit participants (Pickard, 2012) in areas deemed appropriate for adult pornography users, including those who identified as a pornography addict. This included online pro-pornography and anti-pornography websites, forums, and social media. Social media accounts (Facebook and Twitter) were set up specifically to advertise and recruit for the study. Unfortunately, it is unknown as to how many individuals dropped out of the quantitative component of the research after starting, as the platform did not gather this information.

After a couple of months of recruitment, it became apparent the sample size for the qualitative component was relatively small (n=8) and so we sought ethical approval to also advertise the qualitative component as distinct from the larger project. Access to the qualitative component only was made available within the same websites, forums, and social media that were used previously. Following this, three more participants were recruited for the qualitative component. As participants had to provide their contact details for interview, it was possible to calculate that three individuals expressed an interest in taking part in the qualitative interview but then dropped out.

2.7 Phase One: Quantitative Methods

2.7.1 Demographics

A qualitative review found that research is inconsistent with regards to the characteristics of pornography consumers, specifically how and what type of content they consume (Attwood, 2005). Research is mixed as to whether the amount of time spent viewing pornography (Grubbs, Stauner, Exline, Pargament, & Lindberg, 2015; Hald & Malamuth, 2008) is significantly different between those

[31] For ease of reference, self-defined porn addicts may be referred to as addicts, self-defined somewhat porn addicts may be referred to as somewhat-addicts, and self-defined non-addicts may be referred to as non-addicts in the body of text.

who identify themselves as having problematic pornography use and those who do not, as well as between genders (Green, Carnes, Carnes, & Weinman, 2012; Hald & Malamuth, 2008). Reid et al. (2011) identified the environment in which people viewed pornography as a defining characteristic of those who were deemed addicted to pornography, i.e. risky environments such as the workplace. Furthermore, evidence is mixed in regards to the association between sexual orientation and sexual behaviours (Skegg, Nada-Raja, Dickson, & Paul, 2010), although there is some evidence to suggest that sexual orientation can have an impact on self-esteem and shame (Giugliano, 2006) and therefore sexual orientation was measured to capture any relationship within other variables in this study. Relationship status details were also of interest to this study. Some researchers posit that promiscuity is associated with delinquency and drug use (Elliott & Morse, 1989) and the number of past partners predicts individual differences in pornography use (Malamuth et al., 2000). Reid et al. (2011) identified loneliness as associated with increased levels of hypersexual behaviours and that, for heterosexual couples, male pornography use could lead to lower sexual relationship quality. Poulsen et al. (2013) suggested that being in a relationship is protective against problematic sexual behaviours for some, whereas for others it may cause them to perceive their pornography use as abnormal or problematic.

Demographics and pornography-use characteristics were therefore identified through an analysis of the related literature. This primarily took the form of tick-boxes for ease of completion. Each item also had a text box in case participants wished to provide additional qualitative data (See Appendix J). Completion took 5-10 minutes.

In order to run statistical analyses, participants' responses to how often they viewed pornography was standardised to average number of minutes per month.

2.7.2 Statistical Analyses

2.7.2.1 SPSS

IBM SPSS v22 was used to analyse quantitative data. MANOVA was used given that two groups were measured across more than two dependent variables. When running multiple analyses, a multivariate analysis of variance (MANOVA) is more appropriate as the chance of Type I error is minimised and potential correlations across measures can be accounted for. Previous research has found small-to-moderate effect sizes (Guerra, Gouveia, Sousa, Lima, & Freires, 2012; Tangney, Wagner, Fletcher, & Gramzow, 1992). Therefore, the anticipated effect size to be detected was small/medium (f2(V)=.1).

The independent variable for MANOVA analysis was self-defined problematic pornography use. The dependent variables were the ICD, TOSCA, BIDR-6, PCES and pornography-use variables (including religiosity and demographics). Discriminant analyses were also completed to determine the relative

contribution of each variable to group membership (Field, 2013). Sensitivity analysis was used to measure the effect of the BIDR-6.

Post-hoc analyses were run to assess where the significant differences were, specifically ANOVA analysis. Results were further explored within a theoretical framework using Hayes' (2012) mediation model (PROCESS; see Hayes, 2012 for further information). Using this model, we were able to test the predictive relationship between thinking styles, shame, and pornography addiction.

2.7.2.2 Parametric Tests Assumptions

Data analysed in the study was tested to see if it met the assumptions for parametric testing. If the data violated these assumptions, non-parametric tests were performed. This section details the assumptions that were tested and how.

2.7.2.2.1 Assumption of Normality

The data was tested for normality using a combination of formal normality tests (Shapiro-Wilk test and Kolmogorov-Smirnov test), visual inspection, and assessment using skewness and kurtosis. Given that these formal normality tests are sensitive to larger sample sizes, interpreting them in conjunction with skew and kurtosis tests is advised (Field, 2013; Kim, 2013).

Normal distribution was assessed using an 'eyeball test' of the data's Q-Q plots. These plot the observed data values against the expected data values'; closely aligned plots of the two data sets would indicate normal distribution (Field, 2013).

In order to perform skew and kurtosis tests, a z-test was calculated. A z-score was obtained in SPSS by dividing the skew values or excess kurtosis by their standard errors. It is common practice to evaluate the z-scores according to a critical value of 1.96, however, as the standard errors reduce when the sample size increases, critical values for rejecting the null hypothesis need to adapt according to the sample size; for medium-sized samples ($50<n<300$), a critical value of over 3.29 is recommended (Kim, 2013). Given our sample size was 265, a critical value of 3.69 was applied.

2.7.2.2.2 Outliers

Given that the majority of descriptive items and measures used for this study utilised scaled variables, there was little opportunity for outliers. However, data relating to the variable, '*How long do you spend watching pornography?*' was examined for outliers via boxplots. To determine data validity, when an outlier was identified, the participants' data were examined for erroneous responses, and if found their responses were deleted.

There is much debate regarding how to manage outliers, and whether the removal of them is warranted, except when outliers are illegitimately included in the data (Barnett & Lewis, 1994; Osborne & Overbay, 2004). Outliers can lead to inflated error rates and distortions of statistical estimates and so are important to identify. A number of methods have been proposed, for example transformation and truncation. Using transformations allows extreme scores to remain in the data whilst reducing the skew and error variance (Hamilton & Press, 1992). However, these scores can lose their meaning and become difficult to interpret. Truncation methods recode extreme scores to become more 'reasonable' however they risk altering the relationship between the original variables in the model (Osborne & Overbay, 2004).

Conceptually and empirically, the removal of outliers has been shown to enhance the accuracy of estimates and reduce errors of inference in statistical analyses (e.g. t-tests, ANOVA and multiple regression statistics) (Osborne & Overbay, 2004). Therefore, this was the method used for this study.

2.7.2.2.3 Homogeneity of Variance

Levene's test for equality of variances was referred to, to check that the populations tested had equal variances. Levene's test statistic is presented in the SPSS output for parametric tests (i.e. ANOVAs). Equal variances between groups is demonstrated with a *p*-value exceeding .05 (Tabachnick & Fidell, 2007). If this assumption is violated, alternative, robust statistics are offered in SPSS, however this was not necessary for the analyses conducted in this study.

2.7.2.3 Assumption Testing for Multivariate Analyses of Variance (MANOVA) and Regression Analyses

Additional statistical assumptions are required to be met when conducting MANOVAs and regression analyses to those described above:

- Observations are randomly and independently sampled from the population
- Each DV has an interval measurement (i.e. Likert data)
- DVs are multivariate normally distributed within each group of the independent variables (which are categorical)
- The population covariance matrices of each group are equal

2.7.2.3.1 Multivariate Normality

MANOVA tests are not sensitive to violations of this assumption if there are few outliers; as we had removed any outliers this assumption was likely to have been met. However, to further ensure multivariate normality, the mahalanobis distance squared value was used. As advised by Tabachnick

and Fidell (2007) the critical value for five IVs (PCES, ICD, BIDR-6, TOSCA-3, level of religiosity) should not exceed 20.52. Any multivariate outliers identified were dealt with in the same way as described above.

2.7.2.3.2 Homogeneity of Covariance Matrices

This is an extension of homogeneity of variances required for univariate ANOVA, whereby the variances in each DV should be approximately equal, and correlations are assumed to be the same between any two DVs. Formally SPSS uses Box's *M* however this is too sensitive with larger sample sizes usually necessary for MANOVAs, therefore, as advised by Tabachnick and Fidell (2007), Bartlett's test was used as it bases the discriminate analysis on "separate variance-covariance matrices" and "permits a stringent α level" (p.86).

2.7.2.3.3 Absence of Multicollinearity

This assumption asserts that data should only be moderately correlated. This assumption was tested by running correlations among the DVs. No correlation above .80 was found and so this assumption was met.

2.7.2.3.4 Linearity

This assumes that there is a linear relationship between two variables. This was tested by generating and assessing scatterplots to identify whether a linear relationship existed; if data points were clustered within a linear direction then this assumption was met.

2.7.2.4 Assumption Testing for Multinomial Logistic Regression (MLR) Analyses

MLR does not assume normality, linearity, or homogeneity and does not require examining for outliers or consideration for sample size (Starkweather & Moske, 2011). However, MLR does have other assumptions which are required to be met, detailed in the sections below.

The minimum number of cases per IV is 10, however we used preferred 20 to 1 case-to-variables ratios as advised by Hosmer Jr, Lemeshow, and Sturdivant (2013).

2.7.2.4.1 Existence

This assumption assumes that there exists a relationship between the DV and IV. This is tested using a goodness of fit test as described in the journal paper.

2.7.2.4.2 Independence of Irrelevant Alternatives

This assumption states that membership in one group is unrelated to the membership of another group. This was tested using the Hausman-McFadden test.

2.7.2.4.3 Non-perfect Separation

MLR assumes that effect sizes and coefficients will be exaggerated if the groups of the DV are perfectly separated by the IV.

2.7.2.5 Inferential Statistics

Parametric tests such as t-tests, MANOVAs, mediation, and MLR were conducted when the data met the assumptions detailed above.

2.8 Phase Two: Qualitative Methods

This section will provide a rationale for why thematic analysis was chosen as the analytical method, and provide detail regarding the qualitative procedure that was followed.

2.8.1 Thematic Analysis (TA)

As advised by Willig (2013) the research design was chosen at the same time as the research question. Various qualitative approaches were considered in the design of this study, with particular weight given to approaches appropriate for mixed methods. Mixed method designs enable researchers to develop a more comprehensive picture of human behaviour (Morse, 2003), necessary for investigating individuals relationship with their pornography use.

TA, grounded theory, and Interpretive Phenomenological Analysis (IPA), are methodologically similar analytic frameworks but differ in how the data are epistemologically managed (Spencer, Ritchie, & O'Connor, 2003). Each approach attempts to communicate a particular reality through organising text into themes using means of decontextualisation and recontextualisation (Willig, 2013).

Grounded theory aims to generate theory that is grounded in the data (McLeod, 2011), however this analysis has been criticised as lacking in its ability to fully develop a 'full-fat' theory (Braun & Clarke, 2006). Nevertheless, the aim of this study was not to produce new theory but to understand participants' perspectives within an existing theory. Therefore, this approach was not chosen as a method. IPA has been described as 'going beyond thematic analysis' to study a phenomena from a subjective perspective of someone who experiences that phenomena (Brocki & Wearden, 2006). IPA takes an idiographic focus compared to TA's nomothetic focus, and as such necessitates a more in-

depth examination of data from a smaller sample size (Braun & Clarke, 2013). Therefore, given that this study aimed to compare the perspectives of two or more groups on their pornography use and pornography addiction, using both quantitative and qualitative means, IPA was not chosen.

In contrast TA differs dramatically from other qualitative methods borne from linguistically-based analytical frameworks, such as discourse analysis (DA), and conversational analysis (CA). TA treats language at face-value and identifies meaning within the vocabulary used, whereas DA and CA instead aim to deconstruct data to identify interactive performances, linguistic styles, or rhetorical strategies (Spencer et al., 2003). There are a number of different traditions which sit within discourse analysis, each with their own advantages and disadvantages, for example conversational analysis may be deemed too narrow and Foucauldian discourse too broad (Morgan, 2010). Furthermore, meaning is never fixed and data is continuously open to interpretation, given the quantitative component of this study, the ontological assumptions underlying these approaches is incompatible with a pragmatic mixed-methods design. TA is a widely used method which has been criticised for being poorly documented and thus open to interpretation (Braun & Clarke, 2006). However, its ability to adapt to various epistemological positions and underlying theoretical frameworks used within research outweighs its limitations (Creswell et al., 2006).

TA can be used inductively whereby themes are data-driven and coded 'bottom-up', or deductively, whereby an a priori template of codes are applied to the data and coded 'top-down' (Crabtree & Miller, 1999). A hybrid of the two approaches was chosen for this study as it allowed an exploratory process to discover participants' conceptualisations of pornography addiction, whilst also acknowledging that the researchers would have brought their own understandings of the literature pertaining to pornography addiction. MMSE designs that employ TA permit and encourage researchers to be aware of and incorporate reflexivity in their discussions of limitations (Harrits, 2011), and so the potential influence of priori knowledge and attitudes can be discussed transparently.

2.8.2 Semi-structured Interview Schedule

The interview schedule was developed with input from all of the researchers involved in the study and informed by the literature relating to pornography addiction. Areas of interest included the participants' perspectives on pornography's relationship with other areas of their lives, its emotional and behavioural effects, if any, and their views of the differences between users of pornography who do and do not perceive it to be a problem. Open-ended questions were used to encourage the participant to provide their own representations of pornography addiction and allow a level of freedom and flexibility to discuss their experiences with pornography.

2.8.3 Recording and Transcription

All interviews were recorded using an Olympus DS-30 digital voice recorder and uploaded to a personal computer. The interviews were transcribed using a transcription service associated with the University of Nottingham. In accordance with our research agreement and ethical approval, the transcriber was required to sign a confidentiality agreement before working with the data.

2.8.4 Analysis Procedure

This study drew on the procedural guidance offered by Braun and Clark (2006, p.35) as shown in table 1. Although the table presents the analysis as occurring in a linear fashion, analysis was a reflexive and an iterative process.

***Table 1*. Phases of Thematic Analysis**

Phase	**Description of the process**
1. Familiarising yourself with your data:	Transcribing data (if necessary), reading and rereading the data, noting down initial ideas
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic „map" of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

2.8.5 Ensuring Quality and Trustworthiness

There has been increased interest in assessing qualitative research, however, there exists a debate as to whether qualitative research can be legitimately judged or should be assessed according to the same quality criteria used for quantitative research (Mays & Pope, 2000). As yet, there is no one agreed method for assessing qualitative methodology, nor should there be given the heterogeneity of qualitative research. Instead, the literature generally asserts that a 'checklist' of criteria would be inappropriate and that a broad, multi-modal approach to establishing quality would be more suitable (Smith, 2015), or that criteria which can be offered is irrespective of the theoretical orientation of the research (Elliott, Fischer, & Rennie, 1999; Yardley, 2000). Therefore, the authors of this study have drawn on the model for quality used in the systematic literature review (Tracy, 2010), as well as other widely-used and relevant recommendations (Braun & Clarke, 2013; Elliott et al., 1999; Smith, 1999; Willig, 2013; Yardley, 2000), in order to provide a comprehensive assessment of quality.

2.8.6 Rich Rigour

This relates to the richness and validity of data (Tracy, 2010). Evidence of this can be found in the generous amount of quotes, from a mix of samples, supplied to support each theme. The sample is appropriate to the aim of the study, as the recruitment method ensured that people with varying perceptions of their pornography use were recruited. Care and practice of data collection and analysis helped to evidence rich rigour; transcripts were reviewed no less than twice for accuracy and level of transcription detail. After the first interview, the transcript was reviewed with the second and third author to review my interview style and the types of questions asked. Furthermore, my initial analysis was also reviewed and discussed in detail with my research supervisors who were experienced in TA. This process illuminated the extent to which my interpretations and analyses were aligned with the actual data, and provided transparency. Throughout the project, the developed themes and rationale were discussed in supervision. Within the journal paper, direct quotes are provided to substantiate claims made.

2.8.7 Credibility

This refers to the trustworthiness of the findings. Efforts were made in the journal paper to provide a thick description of themes and meaning. Adopting a latent level of thematic analysis allowed the researchers to explore implicit issues in the data and unpack the nuances specific to pornography use which occurred. Furthermore, the research question and the diverse sample, ensured space for a variety of viewpoints that may diverge with the research authors. Attending to these, whilst maintaining transparency and reflexivity, helped to enhance credibility.

Triangulation can also support the occurrence of credibility. Using a MMSE to explore the relationship between thinking styles and perceptions of pornography use allowed the researchers to compare relationships identified in the quantitative component to those which may have occurred in the qualitative component. Due to how this thesis has separated the two components for publication, a unified discussion, and crystallisation (Ellingson, 2009), of the findings takes place in Section 4.

2.8.8 Sincerity

Sincerity relates to the authenticity of research. Identifying limitations in the research can demonstrate sincerity, in that it offers a level of transparency to readers. Self-reflexivity also plays an important role in this, and Section 4.4 aims to provide an insight into my own reflections about the research, for example, how my own assumptions and inevitable biases may have influenced my interpretations of the project. To this end, by acknowledging these biases even before beginning the study, the authors were able to take steps to guard against them, for instance, sharing my initial interpretations with my research supervisors created an opportunity to explore any potential biases.

2.8.9 Resonance

This criterion addresses the impact of the study on the readers. Efforts were made to create a narrative throughout the project and provide aesthetic merit. Indeed, I have found the topic of interest itself to evoke interest and affect in others, although I understand that alone cannot be relied upon to incite resonance.

The online, global, recruitment of participants may have supported the study's resonance, in that the findings can be culturally situated and extrapolated across samples, although not everyone who reads the study may use pornography of course. Furthermore, the use of broader theoretical frameworks used to understand the participants' behaviours, allows the research findings to be interpreted beyond the parameters of pornography use, i.e. the impact of certain thinking styles is likely to influence how people interpret a variety of behaviours.

2.8.10 Significant Contribution

A significant aim of the study was to provide significant contributions to the literature base conceptually, practically, theoretically, and clinically. To the authors' knowledge, this study is the first to consider the role of thinking styles and values in how people perceive their pornography use, both quantitatively and qualitatively, thus adding to current knowledge of this area. By providing a transparent methodology, readers are able to consider the strengths and limitations of conducting further research in this area using a similar approach. Lastly, the clinical implications of the findings

are fundamental to the project, as without it, the study can lack meaning and applicability. The benefits of clinical research include informing clinical practices and providing recommendations for clinicians and researchers, are imperative.

2.8.11 Ethical Clarity

References to ethical considerations were made in the journal paper and extrapolated in Section 2.4.

2.8.12 Meaningful Coherence

Meaningful coherence relates to the study achieving its stated purpose through appropriate methods and interpretations. The authors took care in considering the appropriateness of a MMSE design and a thematic analysis approach, as discussed in Section 2.2 and 2.8.1 respectively.

3 Extended Results

This section details any supplementary analyses that were conducted that were not included in either journal paper.

3.1 Phase One: Quantitative Results

3.1.1 Demographics

A one-way ANOVA was performed to see whether groups differed on any additional demographic data. Results showed that groups did not significantly differ on types of pornography viewed, number of partners over the last year, or age.

3.1.2 Group Differences

3.1.2.1 Sensitivity Analysis: propensity score matching (PSM) for time spent viewing pornography

In order to strengthen confidence in the assumption that thinking styles differed between individuals, thinking styles were compared between participants who viewed pornography for a similar duration.

In order to do this, PSM was performed to match addicts and non-addicts on time spent viewing pornography, thus allowing for the confounding influences of this factor to be controlled. Using the 1:1 nearest neighbour method, participants from the addict and non-addict groups were matched. The standard deviation of the logit of the propensity score was set at a caliper of .20 to avoid bad matches.

Paired samples *t*-tests were then performed between the matched pairs on each of the variables of interest. Analyses largely replicated the findings from the main analyses, as shown in Table 3 below.

***Table 3*. Paired Samples Test with Matched Participants.**

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			

Impact of religious beliefs (addict group) - (non-addict group)	.95	1.29	.21	.52	1.372	**4.52	37	.001
Life in general - negative (addict group) - (non-addict group)	3.45	2.04	.33	2.78	4.117	**10.44	37	.001
Perception of opposite sex - negative (non-addict group) - (non-addict group)	1.45	2.19	.36	.73	2.167	**4.08	37	.001
Attitudes towards sex - negative (non-addict group) - (non-addict group)	2.00	1.71	.28	1.44	2.56	**7.22	37	.001
Sex life - positive (non-addict group) - (non-addict group)	-1.00	2.38	.39	-1.78	-.22	*-2.59	37	.014
Sex life - negative (non-addict group) - (non-addict group)	2.34	1.40	.23	1.88	2.80	**10.31	37	.001
PCES Total Negative Score (non-addict group) - (non-addict group)	2.53	1.57	.26	2.01	3.04	**9.90	37	.001
ICD TOTAL (non-addict group) - (non-addict group)	47.11	72.67	11.79	23.22	70.99	**4.00	37	.001
ICD Externalisation of self-worth (non-addict group) - (non-addict group)	26.95	42.68	6.92	12.92	40.98	**3.89	37	.001
Magnification and fortune telling (non-addict group) - (non-addict group)	6.50	14.58	2.37	1.71	11.29	*2.75	37	.009

Minimization and arbitrary inferences (non-addict group) - (non-addict group)	5.90	7.25	1.18	3.51	8.28	**5.01	37	.001
Perfectionism (non-addict group) - (non-addict group)	4.11	8.14	1.32	1.43	6.78	*3.11	37	.004
Perception of same sex - negative (non-addict group) - (non-addict group)	1.61	1.72	.28	1.04	2.17	**5.76	37	.001

Note. * Significant at the p<0.05 level

** Significant at the p<0.001 level

3.1.2.2 Sensitivity Analysis: MLR

Deleted: ¶

In the journal paper, participants who defined themselves as addicts or somewhat-addicts were contrasted with non-addicts, in terms of their thinking styles and effects of pornography use. However, an analysis was performed contrasting each group to check for differences in findings and to ensure the overall findings were robust. No differences were found between different contrasts.

3.1.2.3 Principal Component Analysis (PCA)

A principal components analysis of the ICD yielded statistically significant findings for the internal structure of the scale. A principal component, varimax rotated factor analysis using Kaiser's Criterion, was performed (Abdi & Williams, 2010; Jolliffe, 2002). **Monte Carlo PCA for Parallel Analysis** (Watkins, 2000) was used to compute the number of factors to retain for rotation in factor analysis (eigenvalues; see Appendix K). If commonalities are .8 or greater they are seen as high, however this is unlikely to occur in real data (Osborne & Costello, 2009). Tabachnick and Fidell (2007) cite .32 for the minimum loading of a factor, and generally magnitudes of .40-.70 are more common and deemed acceptable in social science data (Osborne & Costello, 2009), therefore, a factor loading criterion of .40 or greater was used. A forced solution of 5 factors was assigned. Five factors were ultimately retained (Externalisation of self-worth; magnification and fortune telling; minimization and jumping to conclusions; perfectionism; emotional reasoning; see Appendix L). Of the entire 69 original items, 67 loaded significantly on the 5 factors. Three items were eliminated from the factor analysis because they loaded significantly on more than one factor. The 5 retained factors accounted for 60.232% of the total scale variance.

3.1.2.4 MLR

Multinomial logistic regression (MLR) is well suited for testing the relationship between a categorical dependent variable and one or more categorical or continuous independent variables. Therefore, this approach was used to examine which measures (IV) predicted group membership (DV). MLR is an extension of logistic regression, which analyses dichotomous (binary) dependents, whereby multiple groups are compared. This was chosen as a statistical test as it provides an effective and reliable way to obtain the estimated probability of belonging to a specific population (e.g. pornography addict) when the DV has more than two categories of classification (Kayri & Çokluk, 2010; Peng & Nichols, 2003).

MLR does not make any assumptions of normality, linearity, and homogeneity of variance for the independent variables, however the minimum number of cases per IV is 10 (Hosmer Jr et al., 2013). The chi-square test reported in the journal paper demonstrates a relationship between the DV and the combination of IVs.

The strength of the relationship can be measured using pseudo R-square measures such as Nagelkerke's R^2, however, little is explained regarding the accuracy or errors in the model (Hosmer Jr et al., 2013). Instead predicted group membership can be measured against actual group membership to calculate the classification accuracy.

In order to evaluate the usefulness of the logistic model, a benchmark of 25% improvement over the 'by chance accuracy', computed by the proportional chance accuracy rate, will be used. The by chance accuracy is a measure of the group prediction even if no relationship between the IV and groups defined by the DVs existed.

The proportional by chance accuracy rate was computed by calculating the proportion of cases for each group based on the number of cases in each group in the 'Case Processing Summary', and then squaring and summing the proportion of cases in each group ($0.694^2 + 0.128^2 + 0.177^2 = 0.529$). The proportional by chance accuracy criteria is 66.2% (1.25 x 52.9% = 66.2%). The classification accuracy rate was 82.6% which was greater than or equal to the proportional by chance accuracy criteria of 66.2%. Therefore, the criteria for classification accuracy is satisfied in this example.

Occasionally, implausible results can be found whereby a change in an IV increases the odds by thousands/millions. This is often due to multicollinearity. Standard errors larger than 2.0 is indicative of this, however this did not occur in the analyses for this study. Therefore, these results show that the MLR model is useful in assessing whether thinking styles and impact of religious beliefs (IVs) predicted whether participants identified themselves as addicts, non-addicts, or somewhat addicts.

3.1.2.5 Mediation

A variable can be called a mediator "to the extent that it accounts for the relation between the predictor and the criterion" (Baron & Kenny, 1986, p. 1176). Hayes' (2012; 2013) PROCESS macro for SPSS was used to conduct mediation analyses to test each significant variable, as identified in the MANOVA, for mediation (*M*), between frequency of viewing pornography (*X*) and negative effects of pornography (*Y*).

3.1.2.5.1 The Indirect Effect

As described in the journal paper, significant mediation was found for two variables; ICD and impact of religious beliefs. There are various ways to determine the significance of the indirect effect (i.e. mediation). These include the 'test of joint significance' (Baron & Kenny, 1986), 'Sobel test' (Sobel, 1982), and bootstrapped confidence intervals (Bollen & Stine, 1990; Shrout & Bolger, 2002).

The Joint Significance Test asserts that if both the a-path and b-path are significant then researchers can conclude that a*b path is also significant. The appropriate findings for this analysis are provided in the PROCESS output and are shown below.

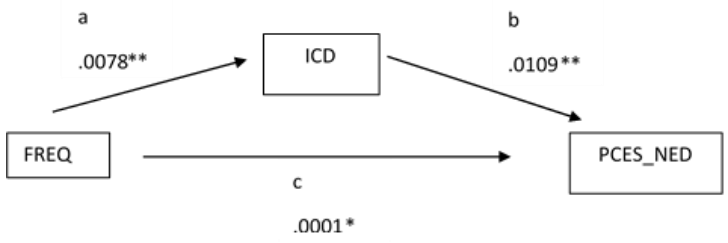


Figure 1. Standardised regression coefficients for the relationship between frequency of pornography use and negative effects of pornography consumption as mediated by cognitive styles.

**P*<.05

***p*<.001

As Figure 1 illustrates, the regression of the overall negative effects of pornography (PCES_NED) on time spent watching pornography (FREQ), ignoring the mediator, was significant, *b*=.01, *t*(259)=4.01, *p*=<.001. Step 2 showed that the regression of the PCES_NED scores on the mediator, cognitive thinking styles (ICD), was also significant, *b*=.01, *t*(259)=4.31, *p*=<.001. Step 3 of the mediation process

showed that the mediator (ICD), controlling for the FREQ scores, was significant, *b*=.01, *t*(258)=6.84, *p*=<.001. Step 4 of the analyses revealed that, controlling for the mediator (ICD), FREQ scores were still a significant predictor of PCES_NED scores, *b*=.01, *t*(258)=2.43, *p*=.02.

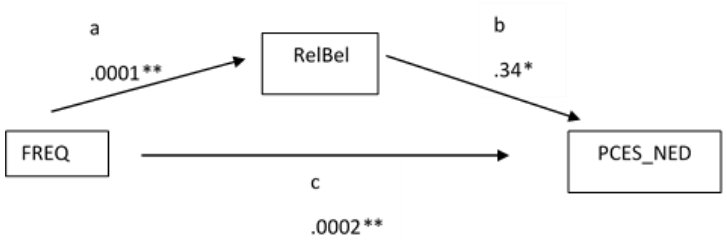


Figure 2. Standardised regression coefficients for the relationship between frequency of pornography use and negative effects of pornography consumption as mediated by impact of religious beliefs.

**P*<.05

As Figure 2 illustrates, the regression of the overall negative effects of pornography (PCES_NED) on time spent watching pornography (FREQ), ignoring the mediator, was significant, *b*=.01, *t*(259)= 4.01, *p*=.001. Step 2 showed that the regression of the PCES_NED scores on the mediator, impact of religious beliefs (RelBel), was also significant, *b*=.01, *t*(259)=2.39, *p*=<.05. Step 3 of the mediation process showed that the mediator (ICD), controlling for the FREQ scores, was significant, *b*=.34, *t*(258)= 4.04, *p*=<.001. Step 4 of the analyses revealed that, controlling for the mediator (RelBel), FREQ scores were still a significant predictor of PCES_NED scores, *b*=.01, *t*(258)=3.49, *p*=<.001.

However, this test is liberal and therefore susceptible to a high Type I error (Hayes, 2013), and was therefore not provided in the journal paper.

The Sobel test (Sobel, 1982) is an alternative estimate of the indirect effect and its significance, and used to be very commonly used. This test compares the strength of the indirect effect of *X* on *Y* to the point null hypothesis that it equals zero. However, this is a very conservative test due to its use of a highly skewed sampling distribution of *ab* and assumption that the sample is normally distributed, and is therefore susceptible to Type II error (MacKinnon, Warsi, & Dwyer, 1995). Although the PROCESS macro provides these calculations, they were not used in the journal paper:

Figure 1 = A Sobel test found partial mediation in the model (*z*=3.62, *p*=.001).

Figure 2 = A Sobel test found partial mediation in the model (*z*=2.01, *p*=<.05).

The Bootstrapping method is a robust technique that can be applied to non-normal data. This method 'resamples' the data to create 1000s of simulated datasets. Of those analyses, 95% (confidence interval) will fall between two numbers; if zero does not fall between that interval then the indirect effect is likely to be different from zero (i.e. significant mediation). Although this method has been available for some time, it is increasing in popularity and has been shown to be a valid and powerful method for testing mediation (MacKinnon, Lockwood, & Williams, 2004; Williams & MacKinnon, 2008). For the current study, the unstandardised effects confidence intervals were small and so the completely standardised effects were checked which showed mediation had occurred, as detailed in the journal paper.

3.1.2.5.2 Effect sizes

Despite universal agreement regarding the importance of communicating effect sizes in psychological research, there are inconsistencies in the literature about how this best achieved (Preacher & Kelley, 2011; Thompson, 2007). There are various ways to calculate the effect sizes for mediation analysis, however it is challenging to adapt existing tests of effects sizes such as verbal descriptors, ratio measures of relative magnitude, unstandardised/partially standardised/completely standardised indirect effects, or indices of explained variance (Preacher & Kelley, 2011). However, a review of these measures found that many have inherent problems which prevent them from fulfilling an offered definition of good effect size measures; effect size indices should be scaled appropriately, confidence intervals should be reported, and the point estimate should be independent of the sample size (Preacher & Kelley, 2011).

Instead these researchers propose 'maximum possible indirect effect and its standardised version' as the most appropriate test which is embedded within the PROCESS macro. This is the "magnitude of the indirect effect relative to the maximum possible indirect effect"; Kappa-squared, K^2 (Preacher & Kelley, 2011, p.104). Therefore, this method was used to report the effect sizes for mediation analysis. Preacher and Kelley (2011) recommended that K^2 can be interpreted using Cohen's guidelines defining small (0.01), medium (0.09), and large (0.25) effect sizes.

Fairchild, MacKinnon, Taborga, and Taylor (2009) suggest reporting the R^2_{med} for the measurement of mediating effect. Although the journal paper refers to K^2, Preacher and Kelley (2011) recommend reporting more than one effect size if available. Therefore, these measurements are reported here.

R-squared mediation effect sizes for the ICD mediation analysis was R^2=.04 CI[.0124-.0855]. R-squared mediation effect sizes for the impact of religious beliefs mediation analysis was R^2=.02 CI[.0039-.0385].

3.2 Phase Two: Qualitative Results

Given the limitations of the scope and word count I have had to be selective in what I am able to present in the qualitative journal paper, therefore I have omitted additional subthemes and responses from all participants; this section provides an extended review of the results. See Appendix M for a sample of a transcribed interview.

3.2.1 Relationship with pornography

The journal paper details the social, educational and physical effects of pornography for some participants, however, for one PA, the impact of his pornography use extended beyond a single value or area of life:

> It nearly cost me my marriage; cost me my ability to function in my churches. …and cost me six months in prison and six months on probation. I was doing stuff that I knew to be morally reprehensible according to the societal understandings and religious understandings that I had, that I had developed, I'd had grown up with, that had been very precious to me…. I felt that God should condemn me more than I felt he did. I condemned myself for feeling so profoundly sexual. (Rob)

Importantly, if an individual's social context is exerting situational pressures regarding their porn use, e.g. pressure to conform to conservative norms, then the individuals' conforming behaviours may be less likely to relate to their own values and create conflict in that way. If an individual is not in a position to confront or defend against external sanctions, they may internalise that conflict and look towards their own actions as culpable. Whilst Rob was the only participant who disclosed that his pornography use led to legal ramifications, the consequences of his pornography use clearly reflects a conflict with held values, as experienced by a number of other participants:

> You know, from my point of view I can't tell whether both the participants are freely partaking in it, so … err … my world … so far as my global world view is concerned it does raise some issues to trouble me … but not religious ones and not you know … it's ethical concerns not feelings that, you know, it's wrong in itself. (Evan)

For some participants, an ability to distance themselves from the behaviours and compartmentalise them from their sense of self, protected them from feelings of shame and a sense of culpability; externalising rather than internalising their actions protects them from viewing the self as 'bad' (Bierbrauer, 1992; Tangney & Fischer, 1995). This cognitive skill and relationship with pornography appeared to be associated with non-addicts more than any other pornography user:

> I'm a believer in civil liberties, erm I think people should be free to kind of follow their own desires as long as it doesn't harm anybody else and I think that fits quite squarely with the fact that I enjoy pornography. (Stan)

> I don't beat myself over the head with the problems with pornography because I believe I am able to act decently, ethically and maturely in my affairs outside of my home. (Evan)

According to surveys the average time for pornography consumption is around 10 minutes (PornHub, 2014), yet this is likely to vary according to different contexts and times of life; indeed, pornography users are a heterogeneous group (Poulsen et al., 2013).

3.2.2 Causation of pornography addiction

The journal paper describes how interviewees differ in the position they place pornography itself as being a dangerous and addictive commodity. For some, pornography was considered inherently more addictive than other behaviours with no one being immune to its hazardous properties:

> I would say that with video games it's just not as stimulating; not even close…at least with video games you're still talking to people like we're talking now, you still interact with them and it's still, you know, but it's not like that with internet pornography. (Stevie)

> Oh, it's unhealthy for everybody, yeah. It's definitely unhealthy for everybody because what it does is it's a hyper-stimulus, right… it's just unhealthy in general like … as fast food is unhealthy for everybody then pornography is probably unhealthy for everybody as well. (Dimi)

> For me it's like cigarettes, for example. If you take like two or three cigarettes a day and other people do the same thing, then when you exceed a tipping point then you go into addiction. (Idris)

A number of participants described psychosocial risk factors as increasing users' potential to become addicted to pornography. These included watching pornography at a young age:

> I think if you start as a kid and you're habitually using it, like I was maybe like five or six hours in a shot then yeah that would affect you, it affected me negatively for sure. (Stevie)

Not having a 'healthy' sexual relationship:

> To get addicted while you're in a [healthy] relationship … I don't think it's … err … I don't know, I don't think it's very common." (Idris)

> Lack of intimacy with women in general was probably one of the main causes for me. (Dimi)

Lacking relationship guidance from others:

> If I hadn't been as socially awkward and also maybe if I'd had like an older brother to give me advice or, you know, like a man in my household to give me advice on how, you know, relationships and stuff like that, then I probably wouldn't have had this problem. (Stevie)

and wanting to escape from events in their lives:

> It's just abusing a behaviour that makes you feel good and you prefer to escape a fantasy instead of facing your problems 'cos sometimes those problems are too big to face, especially when you're young. (Michail)

In an attempt to avoid the cultural bias and potential to pathologise and oppress diverse sexual behaviours, Coleman (1992) proposed that problematic sexual behaviours are 'compulsions', rather than 'addictions' which he believed had moralistic connotations and was too all-encompassing. He suggested that compulsions were motivated by a desire to avoid feelings of pain, loneliness, interpersonal difficulties, and to reduce anxiety. It could be hypothesised that some interviewees used pornography for these reasons.

3.2.3 Significance of social norms

If an individual has a tendency to *externalise their self-worth*, they may rely on feedback from others to develop and maintain their self-worth. Within an environment that is critical of certain sexual behaviours, messages about these behaviours are likely to be negative. For such individuals they may internalise that negativity and risk developing a negative evaluation of their self-worth. In addition, if an individual tends to abide by 'should (or must) statements', they may have unreasonable expectations of how they 'should' (or must) behave. Furthermore, if they are within an environment that indoctrinates particular sexual behaviours, they may be more likely to think that they should not behave in those ways. As discussed, feelings of being devalued can lead to shame. If this occurs, *emotional reasoning* may be active; I feel shame therefore I am shameful. These individuals are likely to find it harder to be confident in their own judgements and instead may be more likely to hold values relating to social contexts and 'conservation'. Furthermore, such individuals may also prioritise 'achievement' values whereby personal success is achieved by demonstrating competence in adhering to social standards, whereby pornography use may be an action that has negative implications.

3.2.4 Good Porn Vs Bad Porn

A subtheme of 'good porn vs bad porn' was also derived from the data relating to the significance of social norms. All groups identified aspects of porn which they found to be both positive (e.g.

pleasurable), and negative (e.g. derogative towards women). However, differences were apparent in how they negotiated this conflict. Non-problematic porn users demonstrated flexibility of thought in how they rationalised their beliefs, and behaviours which allowed them to continue using porn. Indeed, their pornography use facilitated a broadening of sexual horizons and normalised sexual behaviours (Tiefer, 2012):

> Erm it's the coupling and partnership as well as pleasure. Erm - yeah, that would be the main thing really. I think people focus on the pleasure but it's much about two people feeling together and – *what's the best way of putting it be* – erm, learning about each other, experimenting, playing, having fun. (Stan)

> Sex and porn are related. They can be integral part of a relationship to different degrees…Classic or conventional porn depicts and involves sex, and there are niches where it doesn't, but as far as I'm aware the mainstream stuff is widely available. (Raj)

Moreover, a sense of distancing and justification permitted users to reconcile the conflict they experienced:

> Both these people could be exhibitionists, err … on the other hand maybe you know … or they could be well-paid actors or err they could be people that are coerced by … err … the film-makers and there's no way I can sort that out. (Evan)

> As a concept [pornography] I think it perfectly fits in, I've no problem in principle, of course the way it's carried out can be less than perfect. Purely in principle, the erotic content is doable and accessible, and sex behaviours evolve to want/need. In a society, not like an animal kingdom, in order to have an outlet for needs, pornography is perfectly understandable and reasonable that we should have means to fulfil that. Principle sits perfectly fine. There is a caveat that there should be level of control and moderation. Principle is fine. (Raj)

Whereas addicts appeared more rigid in their thinking that ultimately porn is bad;

> Porn is used in gratification and it is short-term; but bad for your long-term, whereas something like exercising and working out and running is going to be good for you long-term. (Dimi)

Furthermore, a number of interviewees appeared to suggest that despite being abnormal, there existed a cultural narrative that 'porn use is normal', which they ultimately rejected, warning that such a message was misleading and potentially dangerous for vulnerable porn users. Implicitly linked here

is the impact of an expert; there is a 'right' and a 'wrong' expert; there is a 'right' and 'wrong' message about porn.

This narrative reflects that present in wider discourses regarding 'good' and 'bad' sex; for example, good sex centres around monogamy, marriage, and procreation, whereas bad sex centres around casual, solo, group, and BDSM sex. Indeed, this dichotomy was present in interviewees' responses to questions regarding the relationship, if any, between sex and porn. For many, they were distinct acts separated by their irreconcilable differences:

> I mean 'cos one is natural and real-life and the other's like, you know, artificial and sometimes you don't really participate in; it's not like a two-way thing. (Stevie)
>
> Sex involves emotions and it involves … erm … relationship between both people so … but it involves so many things other than pleasure [that pornography provides], so for me it's not only about pleasure but it's also about connection and … err … feelings and emotions being shared. (Idris)
>
> …there's aspects of permanence versus impermanence; aspects of commitment, aspects of selfishness versus [generosity]. (Rob)
>
> Normal, vanilla casual sex and being … you know … just pleasuring your partner and getting pleasure back and kind of knowing what she likes and knowing what I like and just trying to help each other out there. That's what I consider normal anyway. (Dimi)
>
> [before] I never missed an opportunity to have sex or masturbate or … err … watch porn because, you know, I thought that there's nothing wrong with it so I might just as well. Now … err … sex for me is the ultimate expression of love (Michail)

3.2.5 Impact of expert opinion

Alongside an increase in access to pornography is an increase in access to 'expert' opinions about the effects of porn; people with anti or pro pornography ideation are put on an equal footing to professional experts (Tiefer, 2012).

Addicts are often positioned as victims through their narratives regarding the importance of an expert. This also serves to disempower the addict and all other 'lay people', whether that be friends, family, or other professionals (e.g. GP). Parallel to this is the empowering of the expert who is constructed as the only 'other' who can truly understand and 'cure' the illness. The construct of an expert is dependent on certain conditions, for example believing that pornography is harmful, and is reflective of the wider discourse which plagues the academic and clinical arenas (Smith & Attwood, 2014);

authenticity is gifted to those who view pornography use through the lens of risk and with a focus on its dangers. To diversify from that narrative is to risk being condemned as unknowledgeable and propagandising. Indeed, there is a sense that emotional and personal 'truths' are 'silenced' by proponents of pornography (Smith & Attwood, 2014). Furthermore, a certain credence lends itself to this narrative when provided by individuals who perceive their use to be problematic and as a result are an 'expert by experience'. However, this can negate the opinions of others and dismiss alternative understandings of people's negative and positive experiences with pornography. Moreover, given the high rates of internet traffic vs the rate of 'porn addiction', it is likely the majority of users do not have a problem.

3.2.6 Real life vs Fantasy

For some participants, the distinction, or blurring, of reality and fantasy was key in how they evaluated their pornography use. Indeed, for a number of users, escaping reality into the fantasy pornography offered was part of the initial attraction to pornography. Participants appeared to feel that they were in control of both their reality and fantasy, whilst for others, crossing from one realm to the other was indicative of an addiction. Users suggested that if the fantasy of pornography became the users' reality, for example, if users re-enacted sexual activities they viewed online with their sexual partners, then their pornography use had surpassed the boundaries of what was 'normal':

> If I were to … have sex … I would probably imitate what was going on in the pornography videos 'cos I'd be consuming so much, so … which is quite sad. (Dimi)

> If you kind of remind yourself before or after that … you know … it's not really real, you kind of become more aware of how weird some of it is… I think the danger of not doing that is that some people will start doing acts in pornography that look fun but in reality would be quite… not fun at all, kind of thing. (Arthur)

Michail, who positioned himself as a recovering pornography addict, reflected that although the distinction between fantasy and reality is much clearer for him now, it was hard to decipher his true desires from those 'caused' by the addiction in the past:

> Erm if you put your mind to it … erm … you know, if you're in real life, if you meet a transsexual and fall in love with her, that's a totally different thing. But if you go on the internet looking for … err … for an escape to your reality, then you might fool yourself that you like transsexuals or you might fool yourself that you like gay stuff when you're straight and that can be very, very confusing. It's all fantasy. Pornography is fantasy. (Michail)

This relationship between interviewees and their thoughts mirrors ACT's 'thought-action fusion' phenomenon, whereby individuals believe that thinking about something is the equivalent of carrying out that action (Hayes et al., 2006). Attributing thoughts to the addiction may be an attempt to absolve users from their guilt and/or shame about having those thoughts. Whereas other participants, expressed surety in their ability to control their pornography use:

> I don't let what happens on the computer screen spill out into my daily life at all. (Evan)

This discourse about the dangers of crossing over into sexual fantasy embodies the addict's relationship with porn as being a constant battle of control. Pornography was constructed as a temptress, inherently evil and seductive, a multi-sensory entity for which addicts were always defending against. Any 'dirty' fantasy an individual might have was attributed as being the Pornography's fantasy. Such an understanding allows the addict to distance themselves from their fantasies, in the same way that non-addicts distance themselves from the ethical dilemmas they hold about the pornography industry.

3.3 Summary of Qualitative Analysis

Various similarities and dissimilarities were prevalent in the discourses of people who perceived their porn use in different ways, for example many of the descriptions of how porn was used was described paralleled across the sample, yet often how participants made sense of those behaviours differed, with addicts and non-addicts drawing on a variety of cognitive strategies to manage these differences. Themes transcended group identification and reflected those that exist in broader paradigms, such as 'sex-addiction' research. Many of the themes described a functionality which served to maintain the position of the addict and expert, and are supported by wider medical rhetoric.

4 Extended Discussion and Reflection

4.1 Summary of Findings

This thesis set out to explore whether thinking styles influence how people evaluate and pathologise their pornography use. To do this, subjective positive and negative effects of pornography and thinking styles (specifically dysfunctional thinking, shame, and impact of religious beliefs) were measured and explored for similarities and differences between individuals with varying addiction status'.

In light of these findings and extant literature, there is no reason to believe there is a monolithic causal relationship between these factors. Findings showed that pornography users are a heterogonous group, who report positive and negative effects of their pornography use in different areas of their lives, broadly supporting existing research (Grubbs, Stauner, et al., 2015; Hald & Malamuth, 2008; Poulsen et al., 2013). Approximately 42% of the sample were women, reflecting existing findings of an increase in women viewing pornography (Ciclitira, 2004; Weinberg et al., 2010). Categorical thinking and a propensity for cognitive distortions such as externalising self-worth, magnification and fortune telling, minimisation and jumping to conclusions, and perfectionism, influenced the extent pornography use was reported as being negative or positive, as well as participants' subjective addiction status. Furthermore, the significance of social norms and the impact of expert opinion about pornography addiction, contributed to how participants evaluated their pornography use. In turn, the value participants placed on social norms and the narrative of particular experts, was associated with particular thinking styles. In other words, individuals who tended to convey rigid thinking styles were more likely to prioritise social norms and particular medically orientated expert opinions and perceive them as influential in their identification as an addict. Our interpretations, supported by the quantitative and qualitative data, is that thinking styles play a role in how some people pathologise their pornography use

Indicators of shame were not found in the quantitative data which could indicate that shame does not play an explicit role in how people evaluate their sexual behaviours. It could be hypothesised that shame is intrinsically linked with particular socially-led values as identified in the qualitative data, and as such plays an *implicit* role. For some individuals, behaving incongruently with these values in social contexts may elicit a fear of being ostracised and feeling ashamed. Consequently, they place importance on social parameters as guidance for appropriate and normative behaviours. Drawing on research which distinguishes between shame and embarrassment or guilt, it could be hypothesised that identifying as a pornography addict within a medical context perhaps permits individuals to externalise their behaviours and localise the 'wrong-doing' in the pornography use, rather than

internalise them as the self being 'wrong' (Tangney, 1995; Tangney & Fischer, 1995). In this way, individuals are protected from feelings of shame.

Furthering our understanding of this phenomenon within a cognitive framework, we can hypothesise that for some individuals, attributing their pornographic tastes to an illness protects them from facing what may be their true desires. For some people, particular acts may be unacceptable in accordance with certain rules, norms or dogma, and to violate them may threaten that individual's social position, and related values. Moreover, if more diverse sexual behaviours are perceived to be morally degenerate, a discourse prevalent within narratives regarding pornography use (Ley et al., 2014), viewing that behaviour, and responding to it positively (e.g. physical pleasure leading to ejaculation), may lead the person to feel ashamed (Tangney et al., 2007). Therefore, it is understandable why these individuals might endorse an illness model of addiction and reject alternative opinions and contrary evidence.

Moreover, similar to cognitive dissonance theory, belief systems theory suggests that a person's set of beliefs which relate to their concept of self are prioritised (Grube, Mayton, & Ball-Rokeach, 1994) and protected in an effort to maintain a perceived level of competence and morality (Ball-Rokeach, 1985). When events occur which call into question said competence or morality, beliefs can change (Ball-Rokeach, 1985). However, the potential for change depends on whether the individual has a closed or open belief system; the extent to which someone can revaluate and redefine their belief system in light of new and independent information (Rokeach, 1960). This ability is said to be made more difficult by both internal and external obstacles such as unrelated beliefs, and pressures from authority (Rokeach, 1960). Therefore, individuals with frequent cognitive distortions and who hold strong, conservative norms may be more susceptible to perceiving that their behaviours violate their sense of competence and morality and also have more difficulty in activating an open belief system, whereby they can adapt their beliefs to accommodate their pornography viewing behaviours.

4.2 Study Implications

4.2.1 Theoretical Implications

As discussed, a review of the literature revealed various conceptualisations and aetiologies relating to pornography addiction, and to the authors' knowledge a comprehensive and objective account has yet to be put forward. The results from this study offer some contributions towards the theoretical standing of pornography addiction.

Broadly, the discourses about the causation of pornography addiction identified in this study emulate those found in wider society; pornography addiction is a result of physiological changes and

pornography addiction is a result of social pressures and feelings of shame. In this way, the dominant discourses influence how individuals evaluate their pornography-use behaviours as being either 'good' or 'bad'. However, the results also reveal the relevance of thinking styles and the role they may have in perpetuating particular discourses and pathologising pornography viewing for some individuals. For instance, inflexibility of thought may give weight to a particular discourse, whereas flexibility of thought may allow an individual more cognitive freedom when exposed to a particular discourse. Furthermore, considering these processes within the framework of values theory provides an understanding of how cognitive dissonance can lead an individual to evaluate their pornography use negatively, leading to feelings of shame, and identifying as a pornography addict. Challenging and modifying these beliefs may break this cycle. Moreover, given that categorical thinking is more prevalent when the event holds social meaning for the perceiver (Macrae & Bodenhausen, 2001; Macrae et al., 1997), identifying how an individual prioritises their socially-led values may help us to understand how they evaluate their pornography use.

The study also contributes to the values theory literature base, and further demonstrates how the influence of values extends to sexual behaviours.

4.2.2 Clinical Implications

The values that were seemingly endorsed by addicts are analogous to rigidity of thinking, inflexibility, and resistance to change (Schwartz, 2012). Therefore, if treatment is able to increase an individual's flexibility of thought, then the values they prioritise may change to those which do not cause dissonance for the individual when evaluating their pornography use. If this is the case, then current treatment models which focus on changing the behaviour are inadequate and not needs-led. Resolution of distress is unlikely to result from abstinence given the evidence of salience and abstinent effects, for example increases in feelings of cravings, appetite, anger, confusion, and depression (Fiske, Kenny, & Taylor, 1982; Swan, Ward, & Jack, 1996). Indeed, such an approach risks validating the individual's sense of being 'bad' and may be potentially damaging. Instead a focus on cognitions, appraisals, and values may be more effective in supporting an individual to evaluate their behaviours in a way that does not lead to distress and shame. Moreover, challenging the wider discourses which support these unhelpful beliefs may further augment the changes which have occurred on an individual level. Traditional and contemporary cognitive approaches would therefore be appropriate.

Furthermore, additional variables have been found to be related to values such as "job satisfaction, organizational commitment, trust in institutions, attitudes toward ethical dilemmas, toward the environment, sexism, religiosity, identification with one's nation or group... social desirability, social

dominance, authoritarianism, interpersonal problems, subjective well-being, [and] worries" (Schwartz, 2006, p. 930). By identifying the priorities an individual place on different values, clinicians may be able to consider the impact related variables may have on the individual's distress, treatment, and recovery.

Given that explanations of behaviours can influence how people respond to them, as a discipline, clinical psychology has a responsibility to ensure that theorists and clinicians are mindful of the dominant discourses which exist in relation to pornography use and broader sexual behaviours. Certain discourses may perpetuate the individual as responsible for their perceived problematic sexual behaviour and risk evoking feelings of shame in them. Alternatively, explanations may denote individuals as powerless and evoke feelings of helplessness. Dominant discourses prevalent in society may also influence and inform clinical policy and procedures. Clinical psychologists have a role to play in ensuring clinical documentations reflect accurate and theoretically derived research.

To further support this, it would be advantageous for clinicians to reflect on their own conceptualisations and discourses related to pornography addiction.

4.2.3 Future Research

This study, and existing literature, illustrates a complex process from viewing pornography through to experiencing effects and potentially pathologising the behaviour (Ley et al., 2014; Weinberg et al., 2010) which is likely to be mediated by a number of variables relating to cognitive styles and attitudes. Although beyond the scope of this study, attitudes towards sexual behaviours have been found to contribute towards people's evaluations of their sexual behaviours.

Guerra et al. (2012) examined the relationship between sexual conservatism/liberalism and values, values being how people "evaluate people and events, and explain their actions and evaluations. Values express what people believe to be good or bad." (Roccas, 2005, p.748). They found that those who endorsed conservative attitudes may have placed more importance on following rules and convention. If participants perceive their environment/social context as holding conventional beliefs that certain sexual behaviours are bad, then they may be more critical about their own behaviours which they perceive to be outside those norms. In contrast, researchers found that those who held more liberal attitudes were more likely to endorse values of hedonism and personal pleasure and so participants who are measured as liberal may instead evaluate their sexual desires and behaviours as more acceptable.

Furthermore, Fisher, White, Byrne, and Kelley (1998) reviewed the relationship between erotophobia and erotophilia, and various related attitudes, and found that erotophobia was related to

authoritarianism, sex guilt (Mosher, 1968) and negative attitudes toward masturbation (Abramson & Mosher, 1975). They argued that the way people evaluate and feel about sex cues can determine their response to, and engagement in, a variety of sexual situations and that this is learnt through sex-related socialization and punishment (not necessarily trauma). Fisher et al. (1998) hypothesised that extreme erotophobia is linked with sexual problems and how individuals approach/avoid pornography. They proposed that interventions which increase erotophilia may have a positive effect on how individuals evaluate themselves and lead to reduced distress. Therefore, future research may benefit from exploring the role sexual attitudes have on evaluations of pornography use.

As concluded in the literature review (Duffy et al., 2016), there is not currently an agreed pornography addiction measure. Although there are benefits of an objective and validated measure within research, there is an argument that clinically such a measure is unnecessary and that a subjective measure of distress sufficient. Future research would benefit from exploring this further.

In terms of future research, it would be informative for assessment and treatment to investigate the relationships people, who pathologise their pornography use, have with additional variables (e.g. employment and education), that are related to the way in which individuals prioritise values. This could be done both quantitatively (e.g. Schwartz Value Survey; Schwartz, 1992, 2006) and qualitatively. In addition, evaluating value-led treatment would be imperative in the development of evidence based treatment for self-reported problematic pornography users.

4.2.4 Critical Evaluation

The two journal papers identify limitations related to the subjective reports of addiction, and how participants are not necessarily treatment seeking given they were recruited online. Therefore, this should be considered when interpreting the study's results.

In the quantitative study, the sample size of PAs was considerably smaller than non-addicts and somewhat-addicts and as such limits the representative nature of that group. However, the PSM analysis goes someway to support the hypotheses made about the differences and similarities in thinking styles between addicts and non-addicts. Furthermore, the qualitative results support the empirical findings thus lending weight to the conclusions made despite the small sample size of PAs in the quantitative component.

This study used a modified version of the PCES to allow participants who were not heterosexual to submit relevant data. The modifications may have compromised the scale's validity and reliability. However, after discussion and consideration, the researchers deemed it more important for the measure to include participants of different sexual orientations.

4.3 Conclusions

To conclude, this study contributes to the existing and growing literature base pertaining to pornography addiction by exploring the differences and similarities in thinking styles and values between self-identified 'pornography addicts', 'somewhat pornography addicts', and 'non-addicts'. The findings support the notion that non-medical factors are greatly involved in how people evaluate and pathologise their pornography use. Specifically, individuals with particular values that are incongruent with their pornography-use behaviours, combined with a propensity for rigid thinking styles are more likely to negatively evaluate their pornography use. As outlined previously, these findings have a variety of theoretical and clinical implications in the assessment and treatment of people who perceive their pornography use to be problematic.

4.4 Reflexivity

4.4.1 Section introduction

This section is based on my own reflective journal and supervision notes recorded throughout the research process. A number of areas of reflection were derived from these documents but due to word constraints the most salient are presented here. These broadly encapsulate the ongoing decision-making processes which occurred during the thesis. Furthermore, reflexivity and transparency regarding the research is hoped to add to the rigour of the study (Tracy, 2010).

4.4.2 Methodology and Epistemology

Often, positivist approaches are cited as assuming that an objective reality exists waiting to be discovered, whereas interpretive approaches deny objectivity and focus on the interactions between realities. However, for me, this dichotomy is not reflective of the world I live in, indeed throughout this research I have discovered and attempted to communicate that it is the dichotomies that can be the most problematic and unhelpful. Perhaps to be married to one approach would inhibit an ability to be reflexive, much like Rokeach (1960) warns about a closed belief system. To this end, I have found that a pragmatic approach adapts well to this, in that quantitative data can be brought to life with the context provided by qualitative data; a mixed-methods approach underpinned by a pragmatic position can transform findings into '4D': "representation and object are not distinct, they are intimately interconnected" (Woolgar, 1988, p20). Throughout this thesis it has been emphasised that people's relationship with their sexuality and sexual behaviours is complex and nuanced, and an epistemological position and methodological approach is needed to reflect and complement that.

4.4.3 Ethics

A particular ethical challenge to this study involved accessing specialist interest groups. Predominantly advertisement occurred online enabling us to access hard to reach groups, however, this also led some individuals to feel encroached upon and questioned the agenda of the research project. Given what we know about the negative beliefs and social expectations of people who perceive themselves to be pornography addicts, the websites and forums they frequent may be seen as Havens in which 'outsiders' are understandably considered with suspicion. Thankfully, after most discussions, those individuals were reassured as to the integrity of the project.

A further dilemma included some of the activities participants participated in. Although lengths were taken to make it clear during recruitment that the research was only interested in legal uses of pornography, there was one occasion when a participant directed the researchers to a blog they wrote which documented their pornography addiction. In this, details of incest and child abuse were available. Following discussions with the relevant bodies at the University, it was decided that no action would be taken due to the information being freely available online, and that the interview could take place. However, a subsequent introductory statement was added to the interviews which reminded participants that any details of harm or illegal activities disclosed during the interview would need to be passed to the relevant authorities. This was a valuable experience in that difficult and controversial conversations and managing them without judgment are a part of being a researcher and a clinical psychologist, furthermore, knowing my own limitations and when to take those discussions further is an important skill to develop.

4.4.4 Researcher Role

Reflecting on my role as a researcher, I found that the ease at which I can talk about sex and sexual behaviours, and a healthy appreciation for sexuality, was beneficial and no doubt influential to my decision to study this topic. I believe confusing and harmful beliefs and narratives about sex are pervasive within micro and macro systems and for me this research process has cemented my ideas about the influence society and experts have on those constructions. Whilst this critical position is likely to have motivated me, it undoubtedly would have effected how I engaged with the research and being aware of this ensured that attempts at neutrality were taken. For instance, not elaborating on my own views about pornography and pornography addiction within interviews, and using supervision to reflect on my own perspectives and the impact these may have on the research.

As an extension of this, at times I was acutely aware of my role as a researcher as opposed to a clinician and at times it was difficult to refrain from assisting interviewees as they searched for answers. When

this occurred I was obliged to allow space for the interviewees to reflect and answer their own questions, as opposed to guide and advise them, and in the first interviews in particular I attended to being journalistic rather than therapeutic. Although this was difficult to tolerate at times, they provided me with opportunities to question the power-relations I may hold, and reflect on this position as a researcher and clinician.

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APPENDICES

Appendix A ICD

Inventory of Cognitive Distortions

ICD

C.L. Yurica, LCSW and R.A. DiTomasso, PhD, ABPP Copyright 2001

ICD Form A

Name: ____(NO NAME) _____

Instructions: Below you will find a list of 69 statements that represent the ways people think or feel about themselves, others or situations. Please read each statement carefully and rate how often you tend to think or feel this way. Circle the corresponding response that most accurately reflects your answers. There are no right or wrong answers. Please respond to each statement as honestly as possible. Please mark every item.

Circle N if you never think or feel this way.

Circle R if you rarely think or feel this way.

Circle S if you sometimes think or feel this way.

Circle O if you often think or feel this way.

Circle A if you always think or feel this way.

1. I need others to approve of me in order to feel that I am worth something…..... N R S O A

2. I feel like a fortune teller, predicting bad things will happen to me…….. N R S O A

3. I believe others think about me in a negative way…….. N R S O A

4. I tend to discount the good things about me…… N R S O A

5. I either like a person or do not, there is no in-between for me…… N R S O A

Appendix B Test of Self-Conscious Affect, Version 3 (TOS CA-3S)*

* Developed by June Price Tangney and others, *The Test of Self-Conscious Affect* (TOSCA-3) (Fairfax, VA: George Mason University, 2000).

Below are situations that people are likely to encounter in day-to-day life, followed by several common reactions to those situations.

As you read each scenario, try to imagine yourself in that situation. Then indicate how likely you would be to react in each of the ways described. We ask you to rate *all* responses because people may feel or react more than one way to the same situation, or they may react different ways at different times.

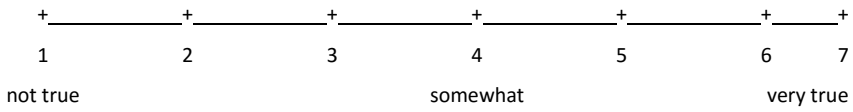
For example:
A. You wake up early one Saturday morning. It is cold and rainy outside.
not likely very likely
a. You would telephone a friend to catch up on news. 1···2···3···4···5
b. You would take the extra time to read the paper. 1···2···3···4···5
c. You would feel disappointed that it's raining. 1···2···3···4···5
d. You would wonder why you woke up so early. 1···2···3···4···5

In the above example, I've rated *all* of the answers by circling a number. I circled "1" for answer (a) because I wouldn't want to wake up a friend very early on a Saturday morning—so it's not at all likely that I would do that. I circled a "5" for answer (b) because I almost always read the paper if I have time in the morning (very likely). I circled a "3" for answer (c) because for me it's about half and half. Sometimes I would be disappointed about the rain and sometimes I wouldn't—it would depend on what I had planned. And I circled a "4" for answer (d) because I would probably wonder why I had awakened so early.

Please do not skip any items—rate all responses.
1. You make plans to meet a friend for lunch. At five o'clock, you realize you have stood your friend up.
not likely very likely
a. You would think, "I'm inconsiderate." 1···2···3···4···5
b. You'd think you should make it up to your friend as soon as possible. 1···2···3···4···5
c. You would think, "My boss distracted me just before lunch." 1···2···3···4···5
2. You break something at work and then hide it.
not likely very likely
a. You would think, "This is making me anxious. I need to either fix it or get someone else to." 1···2···3···4···5
b. You would think about quitting. 1···2···3···4···5
c. You would think, "A lot of things aren't made very well these days." 1···2···3···4···5
3. At work, you wait until the last minute to plan a project, and it turns out badly.
not likely very likely

Appendix C BIDR Version 6 - Form 40A

Using the scale below as a guide, write a number beside each statement to indicate how true it is.



____ 1. My first impressions of people usually turn out to be right.

____ 2. It would be hard for me to break any of my bad habits.

____ 3. I don't care to know what other people really think of me.

____ 4. I have not always been honest with myself.

____ 5. I always know why I like things.

____ 6. When my emotions are aroused, it biases my thinking.

____ 7. Once I've made up my mind, other people can seldom change my opinion.

____ 8. I am not a safe driver when I exceed the speed limit.

____ 9. I am fully in control of my own fate.

____ 10. It's hard for me to shut off a disturbing thought.

Appendix D The Pornography Consumption Effect Scale (PCES)

Below is a series of questions. Please indicate your answer to each question using the following scale: 1 = not at all; 2 = to a very small extent; 3 = to a small extent; 4 = to a moderate extent; 5 = to a large extent; 6 = to a very large extent; 7 = to an extremely large extent. Please write your answer on the line ____ before each question. Please answer all questions.

[SL = Sex life; LG = Life in General; ATS = Attitudes toward sex; PATOG =

Perception of and attitudes toward the opposite gender; SK = Sexual knowledge.

(P) indicates that the item belongs to the positive effect dimension. (N) indicates that the item belongs to the negative effect dimension.

To what extent do you believe that your consumption of pornography:

1. ____SK (P) Has taught you new sexual techniques?
2. ____ATS (N) Has made you less tolerant towards sex?
3. ____ATS (P) Has influenced positively your outlook on sex?
4. ____PATOG (N) Has adversely affected your views of the opposite gender?
5. ____PATOG (N) Has adversely affected your views of the opposite gender?
6. ____LG (N) Overall, has had a harmful effect on your life?
7. ____SL (N) Overall, has been a negative supplement to your sex life?

The University of Nottingham

Appendix E: Recruitment Poster

PORN

Some people find their porn use to be a problem whilst others do not.

To help us learn more about why people view their pornography use differently and to provide better treatment, we are interested in learning more about people's experience and opinion of pornography.

Are you aged 18 and above and interested in sharing your experiences in our anonymous online research study?

If so, please visit the following website for more information...

https://www.survey.bris.ac.uk/nottingham/porn

Researchers: Athena Duffy, Dr Roshan das Nair, Dr Dave Dawson

http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718	http://goo.gl/BBV3yW 07934101718

Appendix F: Ethical Approval

Part of the research infrastructure for Wales funded by the National Institute for Social Care and Health Research, Welsh Government.
Yn rhan o seilwaith ymchwil Cymru a ariannir gan y Sefydliad Cenedlaethol ar gyfer Ymchwil Gofal Cymdeithasol ac Iechyd, Llywodraeth Cymru



Wales REC 4
G1/G2 Croesnewydd Hall
Croesnewydd Road
Wrexham Technology Park
Wrexham LL13 7YP
Telephone : 01978 726377
E-mail : tracy.biggs@wales.nhs.uk
Website : www.nres.nhs.uk

30 January 2015

Dr Thomas Schroder

B12 Yang Fuija Building

University of Nottingham, Jubilee Campus

Wollaton Road, Nottingham

NG8 1BB

Dear Dr Schroder

Study title:	**Do thinking styles play a role in whether people pathologise their pornography use?**
REC reference:	**14/WA/1124**
Protocol number:	**14067**
Amendment number:	**1.0**
Amendment date:	**16 January 2015**
IRAS project ID:	**155509**

The above amendment was reviewed at the meeting of the Sub-Committee held on 29 January 2015.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

The Committee noted that in addition to the current recruitment strategy, you would like to provide an opportunity for potential participants to take part in standalone interviews (without having to complete the survey online). It is further noted that as there has been a good interest in the interview component you confirm that you have been able to conduct interviews with all of the participants who have provided details. The amendment is to create a new route for potential participants by advertising the interview as a standalone activity. The interview is a distinct sub part of the study and so the integrity will not be affected by participants taking part in the interview alone. Consent procedures will not be changed.

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Notice of Substantial Amendment (non-CTIMP)	1.0	16 January 2015
Participant information sheet (PIS) [Information page]	1.0	16 January 2015
Participant information sheet (PIS) [Link page]		
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Document of changes]	1.0	16 January 2015

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

14/WA/1124:	**Please quote this number on all correspondence**

Yours sincerely

T.a. Binys.

Professor Alex Carson
Chair

E-mail: tracy.biggs@wales.nhs.uk

Enclosures: *List of names and professions of members who took part in the review*

Copy to: *Lead NHS R&D dept - Shirley Mitchell, Nottinghamshire Healthcare NHS Trust*

Sponsor contact - Ms Angela Shone

Key investigator/collaborator – Miss Athena Duffy

Wales REC 4

Attendance at Sub-Committee of the REC meeting on 29 January 2015

Committee Members:

Name	*Profession*	*Present*	*Notes*
Professor Alex Carson - Chair	Retired	Yes	
Dr Kath Clarke	Deputy Associate Chief of Staff, Nursing	Yes	

Also in attendance:

Name	*Position (or reason for attending)*
Mrs Tracy Biggs	Research Ethics Committee Manager

Appendix G: Additional Ethical Approval

Hi Athena
Thank you for sending these through.
I acknowledge the approval of this amendment and therefore confirm that NHS R&D approval is upheld.
Best Wishes
Shirley

-----Original Message-----
From: Athena Duffy [mailto:lwxad5@nottingham.ac.uk]
Sent: 06 February 2015 11:23
To: Mitchell Shirley
Subject: 14/WA/1124

Hi Shirley

Thank you for your email. Please find documents attached.

Best wishes
Athena

Hi Athena

Please can you send the updated study documents for R&D, so we can acknowledge the amendment.

Thanks
Shirley

Shirley Mitchell
Head of R&D

From: Tracy Biggs (BCUHB - Clinical Governance) [mailto:TRACY.BIGGS@wales.nhs.uk]
Sent: 03 February 2015 19:01
To: 'thomas.schroder@nottingham.ac.uk'; 'Athena Duffy'
Cc: 'sponsor@nottingham.ac.uk'; Mitchell Shirley
Subject: 14/WA/1124

Please find attached REC correspondence.

If you require a signed hard copy of this letter, please let me know and I will be happy to provide one.

Kind regards,
Tracy.

Tracy Biggs
Research Ethics Manager
Wales REC 4
G1/G2 Croesnewydd Hall
Croesnewydd Road
Wrexham Technology Park
LL13 7YP

Tel: 01978 726377
Email: Tracy.Biggs@wales.nhs.uk
Website: www.nres.nhs.uk & www.hra.nhs.uk

IRAS website: www.myresearchproject.org.uk

The HRA is keen to know your views on the service you received - our short feedback form is available athttp://www.nres.nhs.uk/applications/providingfeedback/
WALES REC 4 is the new name for the former North Wales REC (Central & East) IMPORTANT - Click here for details of significant changes to the REC booking and submission process

Cymraeg
Rhybudd Ebost (2010) - Bwrdd Iechyd Prifysgol Betsi Cadwaladr Fe'ch cynghorir i ddarllen rhybydd ebost Bwrdd Iechyd Prifysgol Betsi Cadwaladr (a'i argraffu er mwyn cyfeirio ato yn y dyfodol). Gellir dod o hyd iddo yn y lleoliad canlynol
http://www.wales.nhs.uk/sitesplus/861/tudalen/47230

English
Betsi Cadwaladr University Health Board - Email Notice (2010) You are advised to read (and print for future reference) the Betsi Cadwaladr University Health Board e-mail notice which can be found at this location
http://www.wales.nhs.uk/sitesplus/861/page/47229

Betsi Cadwaladr University Health Board is the operational name of Betsi Cadwaladr University Local Health Board
****
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****

Appendix H: Participant Information Sheet



How Do You Perceive Your Pornography Use?

What is the purpose of the study?
Some people present to clinical services with what they perceive to be an addiction to pornography. Little is known about why some people who use pornography perceive their use to be an addiction while others do not.

The purpose of this study to investigate differences in thinking styles of pornography users who do and do not perceive their use to be problematic.

The findings of this study will contribute to our current understanding and help develop appropriate treatment for those who perceive their pornography use to be problematic.

Will my taking part in the study be kept confidential?
The interview is completed anonymously and takes up to an hour to complete.

All data collected in this survey will be held anonymously and securely in accordance with the Data Protection Act 1998. Providing personal data is optional (see below).

If you join the study, some parts of the data collected will be looked at by authorised persons from the University of Nottingham who are organising the research. They may also be looked at by authorised people to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant.

All information which is collected about you during the course of the research will be kept **strictly confidential**, stored in a secure and locked office, and on a password protected database.

If you volunteer to be interviewed, your personal data (contact details if provided) will be kept for 3 months after the end of the study so that we are able to contact you about the findings of the study (unless you advise us that you do not wish to be contacted). All other data (research data) will be kept securely for 7 years. After this time your data will be disposed of securely.

If during any part of the research study you mention information that is related to risk to yourself or others, the researchers will be duty bound to report this information and your contact details to the relevant bodies (e.g. police). An example of such information includes sexual exploitation of others and pornography involving children.

If you are currently receiving NHS treatment, participation is entirely voluntary and will not affect your care.

All data will be used as part of the completion of a Doctorate in Clinical Psychology.

What does the study involve?

If you agree to take part you will contacted for an interview about pornography use over the phone or through Skype. If you do volunteer for a one off interview (maximum 1 hour) and provide contact details, a researcher will contact you to arrange a suitable time for you to conduct the interview. The interview would take place within three months.

What are the possible disadvantages and risks of taking part?
We do not anticipate any risk from taking part in this research. However, if any of the questions asked cause discomfort and you would like support with this, the following may be of help to you.

If you would like to receive advice or support relating to any of the issues raised in this survey, you may find the following services useful:
http://www.nhs.uk/livewell/sexualhealth
http://www.nhs.uk/livewell/talkingaboutsex/pages/whocanhelp.aspx

Alternatively you may contact your GP or nurse.

If you have any concerns about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. The researchers' contact details are given at the end of this information sheet. If you remain unhappy and wish to complain formally, you can do this by contacting NHS Complaints:

Call: 0115 993 4542
Email: complaints@nottshc.nhs.uk

Further information and contact details
Researchers:

Athena Duffy
Trainee Clinical Psychologist
University of Nottingham
Email: lwxad5@exmail.nottingham.ac.uk

Dr Roshan das Nair
Research Tutor / Clinical Psychologist
University of Nottingham
Email: lwarn@exmail.nottingham.ac.uk

Dr David Dawson
Research Tutor / Clinical Psychologist
University of Lincoln
Email: ddawson@lincoln.ac.uk

What are the possible benefits of taking part?
We cannot promise the study will help you but the information we get from this study may help people who present to clinical services for treatment for an addiction to pornography.

Appendix I: Transcription Confidentiality Statement

UNIVERSITY OF LINCOLN

Data Protection Act 1998 Confidentiality Agreement for Transcribers

This Agreement is made as of _____ (Date), by and between the University of Lincoln, with principal offices at Brayford Pool Lincoln LN6 7TS (the University) and The Typistry with principal offices at 26 Archers Close, Wrawby, North Lincolnshire, DN20 8TQ, (the Transcriber).

The Transcriber has been appointed by the University of Lincoln to transcribe audiotapes/audio files and documentation resulting from research undertaken by Athena Duffy which will involve the disclosure to the Transcriber of personal data held by the University. Accordingly the Transcriber is required to deal with any such information in accordance with the terms of this Agreement and the Data Protection Act 1998.

The Transcriber undertakes to respect and preserve the confidentiality of personal data. Accordingly, for an indefinite period after the date of this Agreement the Contractor shall:

- maintain the personal data in strict confidence and shall not disclose any of the personal data to any third party;
- restrict access to employees, agents or sub-contractors who need such access for the purposes of the contract (and then only if the employee, agent or subcontractor is bound by conditions of confidentiality no less strict than those set out in this agreement, which the Transcriber shall enforce at the University's request);
- ensure that its employees, agents or sub-contractors are aware of and comply with the Data Protection Act 1998; and
- not authorise any sub-contractor to have access to the personal data without obtaining the University's prior written consent to the appointment of such sub-contractor and entering into a written agreement with the subcontractor including conditions of confidentiality no less strict than those set out in this agreement, which the Transcriber shall enforce at the University's request.

The Transcriber agrees to indemnify and keep indemnified and defend at its own expense the University against all costs, claims, damages or expenses incurred by the University or for which the University may become liable due to any failure by the Transcriber, its employees, agents or sub-contractors to comply with any of its obligations under this Agreement.

For the avoidance of doubt, the confidentiality imposed on the Transcriber by this Agreement shall continue in full force and effect after the expiry or termination of any contract to supply services.

The restrictions contained in this Agreement shall cease to apply to any information which may come into the public domain otherwise than through unauthorised disclosure by the Transcriber.

This Agreement shall be governed by and construed in accordance with the laws of England and the parties hereby submit to the exclusive jurisdiction of the English courts.

Signed for and on behalf of

Signed: HL Heard (The Typistry) Name: .HL Heard (The Typistry).....

Title: .....Founder..... Date: .....2 February 2015.....

Signed for and on behalf of the University of Lincoln

Signed: ..... Name: .....

Title: .... Date: .....

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Appendix J: Demographic Data and Pornography-Use Characteristics

2. Are you

Male

Female

3. How old are you?

4. What is your relationship status?

Single Married Partner (Monogamous) Partner (non-monogamous) Civil partnered

Other (please specify):

5. Are you sexually active?

Yes No

How old were you when you lost your virginity?

6. How many partners have you had over the last 1 year?

7. How would you describe your sexual orientation?

Heterosexual (straight) Lesbian/Gay Bisexual

Other (please specify):

8. What is your religion?

No religion Christian (including Church of England, Catholic, Protestant and all other Christian denominations) Buddhist Hindu Jewish Muslim Sikh

Other (please specify):

9. What is your ethnic group?

Choose one option that best describes your ethnic group or background

White English / Welsh / Scottish / Northern Irish / British White Irish White Gypsy or Irish Traveller White and Black Caribbean White and Black African White and Asian Indian Pakistani Bangladeshi Chinese African Caribbean Arab

Other (please specify):

10. How much do your religious beliefs affect your daily life?

1= (Not at all) 2 3 4= (Very much)

11. Do you consider your porn use to be a problem for you?

Yes No Somewhat

12. How often do you view porn?

Number of times per:

Month Fortnight Week Day

13. How many minutes on average do you watch porn for in a single session?

14. Who do you view porn with?

(select all that apply)

Alone With partner With friends With work colleagues With neighbours With strangers

Other (please specify):

15. Where do you view porn?

(select all that apply)

Home Work Friend's house In the car

Other (please specify):

16. How would you describe the porn you watch?

(select all that apply)

Amateur Anal Asian Ass Babe BBW Big Dick Bisexual Blowjob Bondage/BDSM Bukkake Camel Toe Celebrity College Compilation Creampie Cumshots Double Penetration Ebony Fetish Fisting For Women Funny Gangbang/Group Gay Hairy Handjob Hardcore HD Porn Hentai Indian Interracial Japanese Latina Massage Masturbation Mature MILF Outdoor Pornstar POV Raw/Condomless Reality Rough Sex Shemale/Chick with dicks Small Tits Solo Squirt Striptease Teen/Twink Threesome Toys Transsexual/Transvestite Uniforms Vintage Water sports/Pissing Webcam

Other (please specify):

17. What do you do when viewing porn?

Masturbate Have foreplay Have Sex Nothing

Other (please specify):

Appendix K: Monte Carlo PCA for Parallel Analysis

Eigenvalue	Random Eigenvalue	Standard Deviation
1	2.1884	.0590
2	2.0824	.0451
3	2.0064	.0364
4	1.9437	.0331
5	1.8857	.0313
6	1.8320	.0315
7	1.7805	.0292
8	1.7396	.0252
9	1.6922	.0263
10	1.6484	.0250
11	1.6085	.0221
12	1.5680	.0191
13	1.5348	.0199
14	1.4971	.0204
15	1.4614	.0201
16	1.4270	.0197
17	1.3953	.0209
18	1.3624	.0193
19	1.3313	.0181
20	1.3038	.0161
21	1.2742	.0162
22	1.2452	.0178
23	1.2152	.0138
24	1.1881	.0159
25	1.1623	.0165
26	1.1362	.0154
27	1.1096	.0150
28	1.0845	.0160
29	1.0578	.0154
30	1.0329	.0152
31	1.0080	.0136
32	0.9839	.0140
33	0.9596	.0147
34	0.9373	.0147
35	0.9143	.0142
36	0.8906	.0140
37	0.8685	.0127
38	0.8481	.0144
39	0.8277	.0141
40	0.8063	.0132
41	0.7858	.0127
42	0.7646	.0111
43	0.7446	.0138
44	0.7246	.0126
45	0.7055	.0128
46	0.6851	.0132
47	0.6660	.0140

48	0.6469	.0129
49	0.6279	.0116
50	0.6112	.0120
51	0.5918	.0119
52	0.5736	.0125
53	0.5552	.0112
54	0.5374	.0112
55	0.5196	.0124
56	0.5009	.0110
57	0.4838	.0097
58	0.4671	.0113
59	0.4502	.0114
60	0.4329	.0100
61	0.4165	.0122
62	0.3986	.0116
63	0.3815	.0115
64	0.3634	.0127
65	0.3451	.0108
66	0.3258	.0112
67	0.3075	.0115
68	0.2864	.0140
69	0.2612	.0170

Appendix L: Five Factors Retained from the PCA Analysis of the ICD

Externalisation of self-worth

Magnification and Fortune Telling-

Minimization and Jumping to Conclusions

Perfectionism

Emotional Reasoning

Inventory of Cognitive Distortions - the 11 theoretical factors or cognitive distortions, as defined verbatim by Yurica (2002, p. 60), are comprised of the following:

1. Externalization of Self-Worth: Refers to the development and maintenance of self-worth based almost exclusively on how the external world views oneself (Freeman & DeWolf, 1994; Freeman & Oster, 1999).

2. Fortune-Telling: The process of foretelling or predicting a future event or events and believing that this prediction is absolutely true for oneself (D. D. Burns, 1999)(Burns, 1980, 1989, 1999).

3. Magnification: The tendency to exaggerate or magnify either the positive or negative consequences of some personal trait, event, or circumstance (Burns, 1980, 1989, 1999).

4. Labeling: The cognitive process of labeling oneself using derogatory names (Burns,

1980, 1989, 1999; (Freeman & DeWolf, 1994; Freeman & Oster, 1999).

5. Perfectionism: Refers to a constant striving to live up to some internal or external representation of perfection without examining the evidence for the reasonableness of these perfect standards, often to avoid the subjective experience of failure (Freeman & Dewolf, 1992; Freeman & Oster, 1999).

6. Comparison to Others: The tendency to compare oneself to others whereby the outcome typically results in concluding that oneself is inferior or worse off than others (Freeman & DeWolf, 1994; Freeman & Oster, 1999).

7. Emotional Reasoning: Refers to the predominant use of an emotional state to form conclusions about oneself, others, or situations (Beck et al., 1979; D. D. Burns, 1999).

8. Arbitrary Inference/Jumping to Conclusions: Refers to the process of drawing a negative conclusion in the absence of specific evidence to support that conclusion (Beck et al., 1979; D. D. Burns, 1999).

9. Minimization: Refers to the process of minimizing or discounting the importance of some event, trait, or circumstance (D. D. Burns, 1999).

10. Mind-Reading: Refers to one's arbitrary conclusion that someone is reacting negatively, or thinking negatively towards him or her, without specific evidence to support that conclusion (D. D. Burns, 1999).

11. Emotional Reasoning and Decision-Making: The tendency to rely on emotions to make decisions (Carrie L Yurica, 2002).

Appendix M: Sample Transcript

Stevie I felt it was a major reason why I considered myself an under-achiever and even though I was in the top classes, and I was actually one of the smartest and I could have done a lot better, but I think this … this was the major reason why I didn't have the motivation to do the things that I wanted to do and that continued for a long time. I felt like it kind of stunted my growth – true.

Felt porn was the reason he wasn't motivated to fulfil his potential. Under-achiever but top of his class. Stopped him from doing things he wanted to do – did he not want to watch porn?

Athena Really, so … and that the kind of opportunities that you might have had and things that you wanted to do were really kind of held back?

Stevie not just that. Instead of like … when I was in the **Army** I started going out and just socialising with other guys, or even just doing something like reading books, you know**,** I'd be at this instead … so … yeah that's what I feel it did.

Porn did this – external attribution

Athena Okay, thank you. Erm, do you think that porn use before affected your views or relationships for … well initially the same gender, so do you think they affected how you saw other men?

Stevie Other men?

Athena Hmm…

Stevie Hmm, no, not really.

Athena No, err, what about women – females?

Stevie Well even when I stopped – 'cos I had a period of time like three months/four months, I had two times when I stopped and I didn't notice any difference in that aspect. I still respect other guys … it's not an issue at all.

Athena So it hasn't affected your views or relationships, or has it, sorry?

Sexual inexperience

Porn contributed to that

Stevie Hmm, it did in the sense that I was inexperienced in the real thing but in the end I'd say that's … I mean that's it, you know. Just having this life

CONFERENCE POSTER

Do Thinking Styles Play A Role In Whether People Pathologise Their Porn Use?

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Background

Currently, research is severely lacking in relation to the attitudes and perceptions of people who pathologise their own pornography use. Furthermore, current abstinence models of treatment are propagated with limited evidence of effectiveness or evaluation of harm.

A wealth of research and clinical experience suggests that for some individuals it is the how they interpret behaviours which can lead to psychological distress (Beck, 1979; Gilbert, 2010; Hayes, 2004). Furthermore, conflict may occur when individuals behaviours are incongruent to their values. Therefore, for self-defined porn addicts, the problem may not be the behaviour itself (porn use) but the way in which those individuals evaluate their behaviours. Existing treatment which only addresses pornography behaviours is unlikely to address underlying issues.

The purpose of this study was to examine whether other additional variables, such as thinking styles and shame, influenced whether people pathologised their pornography use. Theoretical frameworks that were drawn on were values theory (Schwartz, 2013), cognitive theory (Beck, Freeman, & Davis, 2004), and theories of shame (Gilbert, 2010).

Method and Results

This study was a mixed-method sequential explanatory design (MMSE). 265 people were recruited online and completed an online questionnaire. 11 of those people took part in an interview. Participants assigned themselves to one of three groups; self-reported problematic porn users, somewhat problematic porn users, non-problematic porn users.

Quantitative data was collected using a demographic questionnaire and four validated measures; The Inventory of Cognitive Distortions (ICD; Yurica & DiTomasso, 2001); The Test of Self-Conscious Affect-3 (TOSCA-3S; Tangney, Wagner & Gramzow, 1989); Pornography Consumption Effects Scale (PCES; Hald & Malamuth, 2008); The Balanced Inventory of Desirable Responding (BIDR-6; Paulhus, 1991; 1998), and one single item measure of how much an individuals religious beliefs impacted on their daily lives.

Quantitative results showed that significant differences occurred across the groups, specifically problematic porn users were more likely to report negative effects of porn, increased dysfunctional thinking and reported their religious beliefs as having a higher level of impact.

Qualitative results highlighted differences in views, between problematic porn users and non-problematic porn users, relating to the causation of porn addiction, significance of social norms, and impact of expert opinion.

Clinical Implications

This study adds to the values theory literature, and contributes to the existing conceptualisation of pornography addiction.

Given that thinking styles were shown to influence whether people pathologised their pornography use, treatment which identifies and modifies an individual's unhelpful thinking styles may be successful in changing how an individual evaluates their pornography use.

Furthermore, clinicians may benefit from using values theory as an integrative framework to allow treatment to go beyond only focusing on the behaviour (porn use). If clinicians can identify the values individuals prioritise, they can consider the impact these may have on the individual's distress, treatment and recovery.

