

Examining the Associations Between Pornography Use and Relationship Outcomes

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

There has been a growing interest in understanding whether and how pornography use is associated with relationship quality and sexual satisfaction for individuals in long-term, committed relationships. Past research examining this question has produced inconsistent findings. Moreover, the methodological limitations of past work make it difficult to draw any definitive conclusions. The current thesis consists of three key studies that focus on the relationship between pornography use and relationship outcomes (i.e., relationship quality and sexual satisfaction). In Study 1, I examined the associations between pornography use (an individual's own use and estimates of partner's use) and relationship outcomes for 780 adults in long-term committed relationships, while improving upon three significant methodological flaws that have been present in past research: underpowered studies, recruitment of biased samples, and use of unreliable measures. For women, only one significant association emerged: women who estimated that their partners used pornography more frequently reported lower quality in their relationship. Men who reported using pornography more frequently were less sexually satisfied and reported lower relationship quality, as compared to men who used pornography less frequently. Men who estimated that their partners used pornography more frequently were more sexually satisfied, as compared to men who estimated that their partners used pornography less frequently. In Study 2, I replicated the findings from Study 1 and extended them by examining how contextual factors (i.e., pornography-related communication) relates to relationship outcomes. We were able to replicate the findings from Study 1 in an independent sample of 773 adults in long-term romantic relationships. Furthermore, the quality of overall communication and the quality of pornography-related communication were found to be important predictors of relationship outcomes, and attenuated many of the associations of participants' own pornography

use and participants' perceptions of their partner's pornography use with relationship outcomes. The quality of pornography-related communication was also positively associated with relationship quality for women and sexual satisfaction for women and men, over and above quality of overall relationship communication. Because pornography-related communication was shown to be important for relationship outcomes, the goal of Study 3 was to examine the degree to which discussions around pornography use is avoided by partners in a romantic relationship. In a sample of 191 adults in romantic relationships, pornography use was found to be the most avoided topic on average, and was avoided significantly more than several other relationship topics. Overall, results underline the importance of considering contextual factors that may influence the relationship between pornography use and relationship outcomes.

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General Introduction

Judge Stewart once famously said during a landmark case “I can’t define pornography but I know it when I see it” (Justice Stewart in *Jacobellis v. Ohio*, 1964). It is unsurprising that there is no consensus on what the definition of pornography is. It changes depending on the cultural expectations at any given time (Daneback, Træen, & Månsson, 2009). Furthermore, what is considered to be “pornographic” has changed over the years, ranging from nude pictures, to pictures of sexual intercourse, to internet videos of today depicting sexual intercourse (Daneback et al., 2009). Although there is no agreed upon definition of “pornography,” some researchers have defined pornography as any type of media that is used for the intended purpose of increasing sexual arousal (Carroll et al., 2008). Often, pornography, erotica and sexually explicit material are used interchangeably in the literature (e.g., Carroll et al., 2008; Goodson, McCormick, & Evans, 2001). We will be using the term “pornography” throughout, due the pervasiveness of this particular term in the larger literature.

Controversies Surrounding Pornography Use

In addition to the controversies around definition of pornography, there has been considerable debate around whether and what type of pornographic material should be permitted in circulation. On one hand, the censorship of pornography is considered an issue of violating freedom of speech in the United States (*Stanley v. Georgia*, 1969) and freedom of expression in Canada (*R v. Butler*, 1992). At the same time, individuals and groups who opposed pornography were arguing that pornography poses a threat to public safety. As such, an examination into the effects of pornography on the individual and society at large was ordered under the Lyndon B. Johnson presidency in the United States. The President’s Commission on Obscenity and Pornography (1971) reported that there was insufficient empirical evidence to suggest harmful

effects of pornography on the individual or society. These findings created outrage within congress and were vehemently rejected (Nixon, 1970). Reports published in Canada (Canadian Fraser Committee, 1985) and the United Kingdom (The British Committee on Obscenity and Film Censorship; Williams, 1979) have also failed to find evidence regarding the ill effects of pornography. In 1986, the Meese report was written under the Ronald Reagan Presidency in the United States, which concluded that pornography was indeed harmful to individuals, citing that pornography was addictive and associated with antisocial behaviours (Attorney General's Commission on Pornography, 1986). However, the Meese report was heavily criticized by academics for being biased and lacking in empirical support (Wilcox, 1987).

Part of the reason why there is insufficient evidence of pornography use being harmful is that “harm” has been defined in many different ways. For example, past research has investigated pornography use as an addiction, its link to risky sexual behaviours, negative emotions, and aggression (Goodson et al., 2001; Montgomery-Graham, Kohut, Fisher, & Campbell, 2015; Sinkovic, Štulhofer, & Božic, 2013; Wright, Tokunaga & Kraus, 2015). Pornography use and aggression is by far the most researched, and most controversial research topic (e.g., Fisher & Barak, 2001; Malamuth & Donnerstein 1984; Zillman & Bryant, 1988). More recently, research has begun to examine how pornography use may be “harmful” to relationships (Montgomery-Graham et al., 2015). I will be specifically focusing on the association between pornography use and relationship outcomes, specifically relationship quality and sexual satisfaction. Note that throughout this paper, I will use the abbreviated term “relationship outcomes” to refer to the two variables of relationship quality and sexual satisfaction. This terminology is being used for ease of communication, and it is important to note that we are examining the correlational, not causal, association between pornography use

and relationship quality indicators, such as overall relationship satisfaction and overall sexual satisfaction.

Pornography use within romantic relationships

The effect of pornography use on relationships has recently become a popular topic in the media. Typical narratives in the media include how pornography is good for relationships, or how it ruins intimacy, is akin to adultery and makes women feel inadequate. Sensational media headlines strongly argue both ends of the debate, but are rarely based on empirical data (Montgomery-Graham et al., 2015). There are theoretical viewpoints that would suggest that pornography leads to positive outcomes, just as there are theoretical perspectives that imply that pornography use could lead to negative outcomes. Each of these theoretical perspectives outlines possible causal pathways for why pornography use might lead to specific outcomes. I outline a few of these perspectives below.

Learning Theory

The concept of habituation in Learning Theory offers a mechanism through which pornography use could negatively impact sexual satisfaction. Habituation occurs when a response to a repeated stimulus decreases after repeated exposure to the stimulus (Thompson & Spencer, 1966). Evidence suggest that habituation plays a role in regulating sexual motivation. That is, sexual stimuli are rewarding, and repeated exposure to sexual stimuli decreases the reward value of the sexual stimuli (Brom, Laan, Everaerd, & Spinhoven, 2014). The habituation perspective would hypothesize that pornography use has a negative impact on an individual's sexual relationship with their partner. Specifically, by using pornography an individual is repeatedly exposing themselves to sexual stimuli. Sexual stimuli, including one's partner, then becomes less rewarding over time. One challenge posed by this perspective that would need to

be addressed empirically is to be able to tease apart whether the declining sexual interest in one's partner is accelerated due to repeated exposure to the sexual stimuli in pornography or naturally declining because of repeated exposure to their partner in a sexual context.

Empirical studies have found that pornography does lead to habituation of sexual response for both men and women, using a variety of experimental methods, physiological measures, and self-report (e.g., Dawson, Lalumière, Allen, Vasey, & Suschinsky, 2013; Koukounas & Over, 1993; Koukounas & Over, 2001). Furthermore, research has demonstrated that for men, the more varied the sexual stimuli is, the greater the effect of habituation (O'Donohue & Geer, 1985). Not only does habituation lead to decreases in sexual arousal, but those who are habituated to sexual stimuli continually seek out novel sexual stimuli (Banca et al., 2016). However, it is still unclear to what degree habituation to pornography generalizes to habituation to sexual interest in one's partner. Preliminary evidence suggests that men who use pornography are less interested in sexual activity with their partner (Albright, 2008).

Social Comparison Theory

Social Comparison Theory (Festinger, 1954) would also predict negative associations between pornography use and relationship outcomes. According to Social Comparison Theory, individuals are motivated to gain accurate self-evaluations, and attempt to do so by comparing themselves to others (Festinger, 1954). The comparisons themselves can either be in an upward or downward fashion (Wills, 1981). Downward comparisons involve an individual comparing themselves to someone they regard as "worse" than them in some way, and is used as a protective strategy to preserve or enhance their self-esteem. Upward comparisons, on the other hand, involve an individual comparing themselves to a "superior" other, either consciously or unconsciously (Tesser, Millar, & Moore, 1988). Upward comparisons more often than not lower

one's self-regard (Gibbons, 1986). Thus, it is possible that individuals watching pornography develop unrealistic expectations about how a sexual encounter unfolds or negatively rate their own sexual performance relative to that of the actors. Exposure to pornography could also contribute to poorer body image.

Research directly examining the relationship between pornography use and social comparisons have yet to be done. However, research does show that appearance-related upward social comparisons lead to more body image concerns (Corning, Krumm, & Smitham, 2006). Furthermore, pornography use has been associated with body image concerns for men (Cranney, 2015). Furthermore, women's perceptions about their partner's pornography use has been found to be indirectly associated with increased body shame (Tylka, Van Diest, & Kroon, 2015). From this study, it is unclear why women's perceptions of their partners' pornography use is positively related to body shame in women. Tylka and colleagues posit that women may perceive that their partner uses pornography because their partner does not see their body as being desirable. Although Tylka et al. did not directly assess such cognitions, other studies have noted that women feel unattractive when their partner uses pornography (Albright, 2008). Future studies are necessary to test whether individuals are making upward comparisons to models and actors depicted in pornographic materials, and whether these upward comparisons are related to decreased sexual satisfaction (through an increase dissatisfaction with their body). Moreover, it would also be necessary to establish whether upward social comparisons to models and actors in pornographic materials uniquely predict decreases in sexual satisfaction over and above social comparisons to other idealized persons.

Sexual Script Theory

Sexual Script Theory (Gagnon & Simon, 2011) would predict a more nuanced relationship between pornography use and relationship outcomes. The theory posits that sexual behaviour is guided by scripts (Gagnon & Simon, 2011). These scripts are socially and culturally determined, and can alter over time. Popular media and political views of pornography would, therefore, influence people's opinions of whether pornography use is good or bad for relationships (Gagnon & Simon, 2011). Thus, an individual's opinions of pornography, formed in part through exposure to media, would likely influence how they react to their partner's pornography use. For example, if one partner perceived pornography use as being bad for relationships or as some form of infidelity, they would likely be more distressed by their partner's pornography use or believe that their partner was unsatisfied with them sexually. Sexual script theory also predicts that pornography use would alter one's sexual script. That is, those who use pornography would have sexual behaviours in their repertoire that they learned from pornography.

There is some evidence to suggest that individuals adopt behaviours depicted in pornographic content into their own sexual repertoire. For example, men who use pornography are more likely to recall behaviours shown in pornography during their own sexual encounters (Sun, Bridges, Johnson, & Ezzell, 2016). This may beneficially influence relationships in the sense that pornography can be used as an educational source to broaden one's sexual behavioural repertoire (Hare, Gahagan, Jackson, & Steenbeek, 2014). Alternatively, Script Theory would also suggest that individuals may adopt maladaptive behaviours depicted in some genres of pornography (e.g., violent acts depicted in pornography use). Indeed, many studies have examined whether viewing violent genres of pornography is related to violent behaviours (e.g.,

Wright et al., 2015). These studies generally find that viewing more violent genres of pornography is related to higher rates of domestic violence. However, it is unclear from this research whether violent pornography actually modifies an individual's sexual repertoire, or whether individuals who are violent towards their partner are more likely to use more violent genres of pornography use.

Each of the theoretical perspectives described above posits certain mechanisms to suggest why and how pornography use may have positive or negative influences on a couple's sexual and relationship outcomes. For example, the habituation principle from learning theory would suggest that pornography use may lead to negative relationship and sexual outcomes by decreasing an individual's sexual arousal to his/her partner. Conversely, sexual script theory suggests that whether pornography use has a positive versus adverse impact on the relationship depends on each person's beliefs about the appropriateness of pornography use, how and whether it can be incorporated as a part of one's sexuality.

Although the theories outlined above provide predictions for the mechanism through which pornography use negatively impacts relationship and sexual outcomes, we first need to examine whether there is even an association between pornography use and relationship and sexual outcomes. This is crucial for the advancement of research as the first step to establishing a causal mechanism is to demonstrate that there is a co-variation between variables. If relationships between pornography use and relationship outcomes are established, we can then apply theories outlined above to examine potential mechanisms. In the following section, I will be critically reviewing past studies that have examined the association between pornography use and relationship and sexual outcomes.

Studies examining pornography use and relational outcomes

In this section, I conduct a comprehensive review of the literature that focuses on the associations between pornography use and relationship quality, as well as the literature focusing on pornography use and sexual satisfaction. Please note that all of the studies on pornography use within romantic relationships thus far focus on heterosexual relationships, therefore caution must be taken when interpreting these findings.

Pornography use and Relationship Quality

Relationship quality is a latent construct used to describe a number of relationship variables, such as relationship satisfaction, commitment, closeness/intimacy, and trust (Fletcher, Simpson & Thomas, 2000; Hassebrauck & Fehr, 2002). In this section, I examine how pornography use and partner's pornography use are related to each of the components of relationship quality separately. I further break the findings down by gender. In terms of relationship satisfaction, Doran and Price (2014) found that watching pornographic movies was not related to reports of overall happiness in the participant's marriage. However, other studies report a negative association between pornography use and relationship satisfaction. Specifically, men's pornography use has been related to less relationship satisfaction for themselves and their female partners (e.g., Szymanski, Feltman, and Dunn, 2015; Szymanski & Stewart-Richardson, 2014). Studies that examine women's relationship satisfaction typically examine the women's perceptions of their partner's pornography use, rather than their partner's actual pornography use (e.g., Stewart & Szymanski, 2012).

Some studies also look at the relationship between *problematic* pornography use and relationship satisfaction. In these studies, problematic pornography used has been defined as “when the amount of use becomes a concern to self and/or others and results in secondary

problems (e.g., life and relationship problems) related to that use,” (Szymanski & Stewart-Richardson, 2014). Problematic pornography use is different than looking at only the frequency of pornography use and it inherently infers that the participants answering the questionnaire perceive their pornography use as being detrimental to other areas of their life. Thus, it is not surprising that these studies have found a negative relationship between women’s relationship satisfaction and perception of partner’s problematic pornography (Stewart & Szymanski, 2012), as well as a negative relationship between men’s problematic pornography use and their own relationship satisfaction (Szymanski & Stewart-Richardson, 2014). Participants who rank high in problematic pornography use have acknowledged that their pornography use is creating problems in their lives. Thus, these studies are really assessing whether those who report that pornography use is causing problems in their lives are also reporting lower relationship satisfaction. Because these studies are recruiting biased samples, they cannot be used to inform the question about whether pornography use is associated with lower relationship satisfaction.

Most studies are cross-sectional. However, one longitudinal study aimed to examine the direction of the relationship between pornography use and relationship satisfaction (Muusses, Kerkhof, & Finkenauer, 2015). In a sample of newly-married heterosexual dyads, men’s pornography use was negatively related to their relationship adjustment (i.e., the frequency of disagreements the couples have). Furthermore, their results suggest this relationship to be bidirectional. That is, men who are using more pornography have less relationship adjustment, and men who have less relationship adjustment are more likely to use pornography more frequently.

A handful of studies have also looked at mediating and moderating variables to explain the relationship between pornography use and relationship satisfaction. For example, Resch and

Alderson (2014) found in a study of 340 women whose partners use pornography, there was a positive relationship between perceived frequency of their partner's pornography use and relationship satisfaction if they perceived that their partners were honest about their pornography use. If the women perceived that their partners were dishonest about their pornography use, the women were less satisfied. Furthermore, Szymanski, Feltman, and Dunn (2015) found that the relationship between women's relationship satisfaction and their perception of their male partner's pornography use was *more* negative if the women had less relationship trust.

Instead of only examining frequency of pornography use, Willoughby, Carroll, Busby, and Brown (2016) examined discrepancies between partners' pornography use. They found that the greater the discrepancy between both partners' pornography use, the less stable and less satisfied partners were in their relationship. This is qualitatively different from other studies that look solely at frequency of pornography use, as in the Willoughby et al. (2016) study; both partners could score high in pornography use frequency, but the discrepancy in use would be small.

Other than relationship satisfaction, research has also examined the relationships between pornography use and infidelity/commitment. Many studies consistently find increased infidelity rates amongst those who use pornography more frequently (e.g., Gwinn, Lambert, Fincham, & Maner, 2013; Lambert, Negash, Stillman, Olmstead, & Fincham, 2012). For example, Gwinn, Lambert, Fincham, and Maner (2013) examined a sample of participants in a committed relationship and found that participants primed with pornographic stimuli reported having a higher quality of alternatives to their partner than those who were not primed with pornographic stimuli. Also, using a longitudinal approach, Gwinn et al. (2013) also found that participants who used pornography more frequently at the first time point were more likely to engage in extra-

dyadic behaviour 12 weeks later. Research has also found that pornography use is negatively related to commitment to one's partner (Doran & Price, 2014; Lambert et al., 2012). Moreover, evidence suggests that the relationship between pornography use and extra-dyadic behaviour is mediated by having less commitment to one's partner (Lambert et al, 2012).

When looking at relationship quality as a whole, there are mixed findings amongst studies. For example, some studies report null findings for the relationship between pornography use and relationship satisfaction (Doran & Price, 2014), while others have found that men's pornography use was related to their relationship satisfaction and to their partner's relationship satisfaction (e.g., Muusses et al., 2015; Szymanski et al., 2015). However, the extant literature does suggest that increased pornography use is related to lowered commitment to one's partner and higher rates of infidelity (e.g., Gwinn et al., 2013). Most studies examined how men's pornography use influenced their own relationship satisfaction, or how men's pornography use influences their female partner's relationship satisfaction (e.g., Muusses et al., 2015; Szymanski et al., 2015). Few studies actually examined the relationship between women's pornography use and relationship satisfaction (e.g., Doran & Price, 2014), or how women's pornography use influences men's relationship satisfaction (Poulsen, Busby, & Galovan, 2013). Furthermore, some studies have looked at moderator variables to help explain for whom pornography use is related to lower relationship satisfaction. Such results indicate that the relationship between pornography use and relationship quality varies with contextual factors, such as the discrepancy in frequency of pornography use between partners or the amount of trust in the relationship (Resch & Alderson, 2014; Willoughby, Carroll, Busby, & Brown, 2016).

Pornography use and Sexual outcomes

In this section, I examine how pornography use and partner's pornography use are related to sexual satisfaction, breaking the findings down by gender. Sexual satisfaction can refer to their satisfaction with sexual activity with a partner, or to their satisfaction with solitary sexual activity. For the studies reported below, sexual satisfaction refers to a global construct that includes both partnered and solitary sexual satisfaction. For men, most research suggests a negative relationship between their pornography use and their own sexual outcomes. For example, Doran & Price (2014) found that for men, pornography use reduced the positive relationship between frequency of sex and happiness. Furthermore, problematic pornography use (i.e., the frequency of pornography use "causes" problematic outcomes in other areas of life) was related to less sexual satisfaction in men (Szymanski & Stewart-Richardson, 2014). As discussed, there are issues with relying on research that examines problematic pornography use to inform us about the relationship between pornography use and relationship outcomes. Thus, we cannot use this research to inform the question of whether pornography use is associated with lower sexual satisfaction in men.

A study by Poulsen, Busby, and Galovan (2013) also found that men's frequency of pornography use was negatively associated with their sexual satisfaction. Furthermore, these relationships could not be accounted for by participants' attitudes towards pornography use (e.g., the relationship between men's pornography use and sexual satisfaction did not differ for men who have negative attitudes towards pornography and men who have positive attitudes towards pornography). Albright (2008) found that, for men, the more pornography they used, the less interested they were in sexual activity with their partners. Men's pornography use was also related to lower sexual satisfaction in women (Poulsen et al., 2013; Stewart & Szymanski, 2012). However, if women perceive that their partners are being honest about their pornography use,

female partners were more sexually satisfied (Resch & Alderson, 2014). Among these studies, sexual satisfaction is measured

In term of women's pornography use, one study found that their pornography use was related to higher sexual satisfaction (Poulsen et al., 2013). Moreover, no relationship is typically found between women's pornography use and men's sexual satisfaction (Poulsen et al., 2013). Although women's pornography use is positively related to their own sexual satisfaction in some studies, other studies suggest that women's frequency of use is associated with a lower frequency of sexual activity (Albright, 2008).

When examining how women's pornography use is related to their partner's sexual satisfaction, Poulsen and colleagues (2013) were not able to detect a relationship using a cross-sectional study. Using a longitudinal design, Muusses, Kerkhof, and Finkenauer (2015) found that men's changes in sexual satisfaction precede women's changes in pornography use, but women's changes in pornography use does not influence men's sexual satisfaction (Muusses et al., 2015). Furthermore, findings from Muusses et al. (2015) suggest that women's pornography use itself is not harmful to their partner's sexual outcomes. Overall, the relationship between sexual outcomes and pornography use is not simply negative or positive. It is more nuanced, differing by gender, as well as the circumstances surrounding the pornography use (e.g., perceived partner's honesty about use).

Methodological limitations of past research

There are some important limitations to consider when evaluating the research on pornography use and relationship outcomes. For example, most studies have measured pornography using a single item, making it difficult to assess the reliability of measurement of their pornography use. Furthermore, pornography use is defined differently across studies, and

many studies do not provide participants with a definition of “pornography use.” More concerning is the use of biased samples (e.g., women who were recruited because they were distressed over their partner’s pornography use) in some of the past research. Also, many studies are underpowered and use a small sample size. These limitations make it difficult to conclude the nature of the association between pornography use and relationship outcomes. These limitations of past research will be discussed in more detail in Study 1.

Goals of the Current Research Programme

The question of whether pornography use is harmful has been a topic of great interest to the public, the academic community, as well as to policy makers. Moreover, there has been a growing interest in investigating how pornography use impacts the partner and the quality of the romantic and sexual relationship in long-term, committed relationships. However, before there can be any investigation of a causal association between pornography use and adverse relationship outcomes, the first step would be to examine if there is an association between pornography use and relationship outcomes. As discussed, results from previous research examining the associations between pornography use and relationship/sexual outcomes are inconsistent (e.g., Doran & Price; Gwinn et al., 2013; Poulsen et al., 2013). Furthermore, some of the methodological limitations make it difficult to have great confidence in past studies. The current programme of research explores the associations between pornography use and relationship outcomes through three studies.

The focus of the first study was to examine the association of an individual’s reported pornography use with their relationship quality and sexual satisfaction. Furthermore, I wanted to explore how one’s perceptions of their partner’s pornography use is related to one’s own relationship satisfaction and sexual satisfaction.

Study 2 had two main goals. The first was to examine whether the results from Study 1 could be replicated in an independent sample. The second goal of Study 2 was to look at other theoretically relevant variables that could elucidate the relationship between pornography use and relationship/sexual outcomes. The third goal of Study 2 was to investigate whether the association between pornography use and relationship outcomes remains significant after controlling for pornography-related communication between partners. Also, I wanted to examine how strongly the quality of pornography-related communication is related to relationship quality and sexual satisfaction after accounting for overall quality of communication between romantic partners, a robust and consistent predictor of relationship outcomes. The rationale for focusing on communication was based on past work that has shown that how couples navigate sexual disagreements is more strongly associated with their sexual satisfaction than many individual predictors of sexual satisfaction (Byers & Rehman, 2013).

Despite the many potential benefits of open communication about sexual aspects of their relationship, there is evidence to suggest that partners, even those in long-term, committed, and exclusive relationships are reluctant to discuss their sexual likes and dislikes with each other (MacNeil & Byers, 2005). Thus, in Study 3, we directly examine the degree to which pornography related communication tends to be avoided by individuals and to what degree it tends to be avoided more or less than other topics than can be a source of conflict in a relationship.

Study 1

As reviewed in the general introduction, past research on the associations between pornography use (both the individuals and partners' use) and relationship outcomes has produced inconsistent results (e.g., Alderson, 2014; Doran & Price, 2014; Poulsen et al., 2013; Resch & Alderson, 2014). It is also difficult to interpret past findings in light of the many limitations inherent in the literature, as described earlier. The main goal of Study 1 was to re-examine these associations while addressing some of the key methodological limitations of past work.

First, past studies have often measured pornography using single-item measures (e.g., Willoughby et al., 2016) and as a result, it has not been possible to assess the reliability of their measure of pornography use. Additionally, most past studies do not provide participants with a definition of what constitutes pornography. When participants use their own definitions, the findings may be biased because participants have different perspectives on what constitutes pornography. In the present study, we addressed this limitation by including a broad definition, which captures the many forms that pornographic material can take. Specifically, we defined pornography as, "any type of media (such as images, video, text or audio) that is used for the purposes of sexual arousal," which is one of the more common definitions of what constitutes pornography (Carroll et al., 2008). All participants were provided this definition before they answered any questions relating to their own or their partner's pornography use.

In addition to the methodological limitations, this area of research often uses biased samples. Several studies have recruited participants who were distressed over their partner's pornography use, or those who were presenting for couples counseling because of one partner's "problematic" pornography use (e.g., Resch & Alderson, 2014; Szymanski et al., 2015; Szymanski & Stewart-Richardson, 2014). These samples are inherently biased because

researchers select participants who have either experienced negative outcomes from their own or their partner's pornography use, and/or were more likely to hold negative views about pornography. These studies, therefore, have a serious internal confound and cannot be used to inform any question about whether pornography use is associated with adverse relationship outcomes. Montgomery-Graham, Kohut, Fisher, and Campbell (2015) have shown that associations between pornography use and relationship outcomes are, indeed, more exaggerated in the sample of distressed individuals than in a more general sample. In the current study, we used a large online sample and established broad inclusion criteria. For this study, the only eligibility criteria were that participants had to be adults in a long-term committed relationship.

Additionally, past research has largely used small sample sizes, which results in underpowered studies. This problem is compounded when researchers further divide their sample by examining each member of a dyad or when they separate results into groups (such as men and women). By definition, low power decreases the chances of finding an effect when one exists (false negatives). However, low power also has consequences for the publishing of significant findings. Because small-sampled studies are more likely to find null results, they are less likely to be published than high-powered studies with null effects because in the former case, the null results are likely to be explained as a result of inadequate powered instead of an actual null result (Button et al., 2013). Therefore, if many studies on pornography use within the relationship are underpowered, those studies showing null results are less likely to be published, even if the true relationship is null, whereas underpowered studies that do find an effect may be more likely to be published. The available literature would therefore be skewed by showing significant results, even if none exist.

It is also a myth that finding an effect within a low-powered study means that there is a “true” effect. Recent studies demonstrate that low-powered studies also increase the chances of finding a false positive and they exaggerate the estimate of a true effect (Button et al., 2013). Therefore, underpowered studies may be finding significant relationships between pornography use and relationship outcomes where no relationships actually exist. Furthermore, the estimated magnitude of the effects of pornography use and relationship outcomes of under-powered studies may be larger than what they actually are (Button et al., 2013). This would not only make it appear as though there is a stronger relationship than what actually exists, but it also makes results across studies less likely to replicate and, therefore, unreliable (Button et al., 2013; Schönbrodt & Perugini, 2013).

In sum, the literature is inflated with studies that use inconsistent definitions of pornography use, as well as underpowered and biased samples. These limitations pose serious threats to the interpretability of the findings, as outlined above. Therefore, the goal of Study 1 was to examine the relationship of both individual pornography use and estimates of partner’s pornography use with relationship quality (i.e., how committed one feels toward their partner, how close they feel to their partner, and how satisfied they feel overall in their relationship with their partner) and sexual satisfaction (i.e., how satisfied one is with their overall sex lives), while accounting for the limitations of past studies. Specifically, we provided a definition of pornography to participants for consistency. We also recruited a large sample ($N > 500$) of participants who are not biased (i.e., not distressed over their partner’s pornography use). We also recruited participants through Amazon’s Mechanical Turk (MTurk). Recent research on the samples recruited from MTurk demonstrate greater heterogeneity compared to traditional convenience samples (e.g., university students and other internet samples), such as wider age

distribution, more variability in ethnicity, and a more even gender split (Buhrmester, Kwang, & Gosling, 2011).

Methods

Participants

Participants were recruited from Amazon's Mechanical Turk to participate in a study on romantic relationships and sexuality. Potential participants were informed that they would be asked to complete a series of questions about different aspects of their relationship and sexuality. In order to participate, participants were required to be adults in a long-term, committed relationship. There were 853 participants who initially participated in the study. However 64 participants were excluded because they did not meet eligibility criteria (i.e., were single). Furthermore, 15 participants were excluded because they answered two or more validity questions incorrectly (e.g., "Please select 7 for this question"). The final sample included 780 participants.

In our final sample, participants were, on average 34.15 years of age ($SD = 10.53$). Slightly over half of our participants were female (54.2%) and most were Caucasian (79.4%). Participants were with their partner for an average of 8.06 years ($SD = 28.36$). The length of the relationships ranged from 1 month to 59 years. Participants were educated 15.45 years on average ($SD = 2.97$) and had an average combined income with their partner of US \$68,047 ($SD = \$52,746.77$). In the final sample, 47.2% were married and 52.8% were cohabitating.

Measures

Background questionnaire. A background questionnaire was used to measure various demographic variables, such as age, education level, as well as number of children. The background questionnaire also measured different aspects of their relationship history, such as their relationship status and length of their current relationship.

Relationship Quality. We created a latent variable of relationship quality (details provided in the results section) that was based on three measures of relationship satisfaction, closeness and commitment, each of which is described below.

i. Relationship satisfaction. Overall relationship satisfaction was measured using the 6-item Quality of Marriage Index (QMI; Norton, 1983). Five items (e.g., “our relationship is strong”) are rated along a 7-point Likert-type scale from 1 (*very strongly disagree*) to 7 (*very strongly agree*). There is also a sixth item that requests participants to rate how happy they are with their relationship on a 10-point Likert-type scale from 1 (*very unhappy*) to 10 (*perfectly happy*). Responses for this scale range from 6-52, with a higher number indicating higher relationship satisfaction. The QMI demonstrated good reliability in the present study ($\alpha = .95$).

ii. Closeness. Closeness was measured using the Inclusion of Other in the Self scale (IOS; Aron, Aron, & Smollan, 1992). The IOS is a one-item measure where respondents are asked to select one of seven venn-like diagrams. Each diagram differs in the overlap between two circles: one circle representing the self and one circle representing their partner. The more overlap amongst the circle, the more close the individual feels with their partner.

iii. Commitment. Commitment to one’s partner was measured using the Commitment subscale of the Investment Model Scale (IMS-C; Rusbult, Martz & Agnew, 1998). Participants respond to 7 items along a 9-point Likert-type scale from 0 (*do not agree at all*) to 8 (*agree completely*) (E.g., “I am committed to maintaining my relationship with my partner.”) Responses range from 0-56, with a higher number indicating more commitment to their partner. The IMS-C demonstrated good reliability in the present study ($\alpha = .87$).

Sexual satisfaction. Global Measure of Sexual Satisfaction (Lawrance & Byers, 1995) is a 7-item measure of how satisfied individuals are overall with their sexual life, including both

partnered and solitary sexual activity. Participants rate items on a 5-point Likert-type scale from 1 to 7, with adjective pairs that describe their sexual life at each end (e.g., *unpleasant/pleasant*). Responses range from 5 to 35, with a higher number indicating higher sexual satisfaction. The GMSEX demonstrated good reliability in the present study ($\alpha = .96$).

Individual's Pornography Use. To measure participants' pornography use, they responded to three items that measured the amount and frequency of their current pornography use: "How much pornography do you currently consume?" [Likert-type scale from 1 (*not at all*) to 7 (*a great deal*)]; "On how many days did you use pornography in the last 12 months?" [Likert-type scale from 1 (*none*) to 6 (*almost every day*)]; and "Approximately how many times have you used pornography in the last 30 days?" [Likert-type scale from 1 (*never*) to 7 (*several times a day*)]. All three items were summed to create an individual's pornography use scale. Responses range from 3 to 20, with a higher number indicating more pornography use. This measure demonstrated good reliability in the present study ($\alpha = .94$).

Partner Pornography Use. To measure an individual's estimate of his or her partner's pornography use, the items from the scale described above were reworded to apply to their partner (e.g., "How much pornography do you currently consume?" was reworded to "How much pornography does your partner currently consume?"). As with the scale used to measure own pornography use, all three items were summed to create a partner's pornography use scale. Responses range from 3 to 20, with a higher number indicating more pornography use. This measure demonstrated good reliability in the present study ($\alpha = .93$).

Procedure

The current study was approved by a university ethics board. Participants completed the questionnaires online. The background measure was delivered first, followed by the remaining

questionnaires in a randomized order. Participants were compensated \$0.50 into their Amazon account.

Results

Descriptive Statistics and Bivariate Correlations

Overall means, standard deviations, and Cronbach's alphas for study variables are described in Table 1. Bivariate correlations are also reported in Table 1 for both men and women.

Pornography Use and Relationship Outcomes

The goal of study 1 was to examine the relationship between own pornography use and relationship outcomes, as well as between estimates of partner's pornography use and relationship outcomes. We tested these associations using Structural Equation Modeling in Mplus v6 (see Figure 1). Since previous studies have identified numerous gender differences in pornography use, results were divided by gender (See Figure 2 for men and Figure 3 for women). Estimates of partner's pornography use, individual's pornography use, and sexual satisfaction were measured using manifest indicators. Relationship quality was measured as a latent variable consisting of three indicators: relationship quality, closeness, and commitment. These indicators were required to load onto the relationship quality latent variable. Factor loading for the relationship quality manifest indicators were significant ($p < .001$) and ranged from .60 to .89 for women and .62 to .96 for men. Age, religion, and relationship length were controlled for in the model. Model fit is considered acceptable with a comparative fit index (CFI) greater than .95, a root-mean-square error of approximation (RMSEA) less than .06, and standardized root-mean-square residual (SRMR) less than .08 (Schermelleh-Engel, Moosbrugger, & Müller, 2003). Chi-square estimations are almost always significant with large sample sizes ($N > 200$; Barrett,

2007), and are therefore not reported for our sample of 780 participants. The initial model used had acceptable fit on most indicators (CFI = .97; SRMR = .04), however RMSEA did not have acceptable fit [RMSEA = .05 (90% CI: .03, .07)]. The modification indices indicated that including an additional path between commitment and partner pornography use would improve fit. Adding this path resulted in good model fit on all measures of fit: CFI = .99; RMSEA = .04 (90% CI: .01, .05); SRMR = .03. Multi groups analysis was also used to test whether the paths of the hypothesized model differs between men and women. A series of constrained models (each with a path constrained to be equal across genders) was compared to an unconstrained model (with paths allowed to vary freely). Typically, chi-square difference tests are used to compare constrained and unconstrained models for multi groups analyses. However, these tests are also affected by large sample sizes (Cheung & Rensvold, 2002). Therefore, we used a $\Delta\text{CFI} \geq .01$ between the constrained and unconstrained more to indicate that there is enough evidence that the paths are significantly different between genders (Cheung & Rensvold, 2002). Below we describe the theoretically relevant paths. The paths are described in terms of significance and effect sizes. The following criteria were used to describe the size of the effect for each relevant path: small effect = $r > .10$, medium effect = $r > .30$; large effect = $r > .50$ (Cohen, 2016).

Men's pornography use and relationship outcomes. Men's self-reported pornography use was negatively associated with their sexual satisfaction, $\beta = -.28$, S.E. = .06, $p < .001$, which is a medium sized effect (see Figure 2). Furthermore, there was a trend where men's pornography use was negatively associated with relationship quality, $\beta = -.13$, S.E. = .07, $p = .06$, however this effect was small and did not reach significance. Overall, results suggest that men who report using more pornography also report having less sexual satisfaction, but we found less evidence that variation in their use is related to their relationship quality.

Men's perceptions of partner's pornography use and relationship outcomes. Men's estimate of their partner's pornography use was significantly and positively associated with their sexual satisfaction, $\beta = .30$, S.E. = .07, $p < .001$ (see Figure 2). Thus, men who estimated that their partners use higher levels of pornography were more sexually satisfied, as compared to men who estimated that their partners used pornography less frequently. The effect size was in the moderate range. A path between partner's pornography use and commitment was added to the model, as suggested by modification indices in order to improve model fit. Men's perceptions of their partner's pornography use was also negatively associated with their commitment to their partner, $\beta = -.16$, S.E. = .03, $p < .001$. Thus, men who estimated that their partners use higher levels of pornography were less committed to their romantic partners. This effect was in the small range. There was no significant association between men's estimates of their partner's pornography use and men's relationship quality, $\beta = .10$, S.E. = .07, $p = .19$).

Women's pornography use and relationship outcomes. There was no significant association between women's self-report of pornography use and their self-reported relationship quality or sexual satisfaction, $\beta = -.003$, S.E. = .07, $p = .96$ and $\beta = .08$, S.E. = .06, $p = .23$, respectively (see Figure 3).

Women's perceptions of partner's pornography use and relationship outcomes. Women's estimate of their partner's pornography use was significantly and negatively associated with their relationship quality, such that women who estimated that their partner used pornography more frequently reported a lower relationship quality, $\beta = -.20$, S.E. = .08, $p = .01$ (see Figure 3). This effect size was in the small range. The association between women's estimate of their partner's pornography use and women's commitment trended toward significance, such that women who estimated that their partners used pornography more

frequently were less committed to their partner, $\beta = -.06$, S.E. = .03, $p = .08$. There was no significant association between women's estimate of partner's pornography use and women's sexual satisfaction, $\beta = -.06$, S.E. = .07, $p = .38$. Thus, women who perceive that their partner uses more pornography also report having lower relationship quality and commitment, but we did not find evidence that their perception of their partner's pornography use is related to their sexual satisfaction.

Gender Differences. The multi groups analysis revealed gender differences for two paths: the path between partner's pornography use and commitment ($\Delta\text{CFI} = .012$), such that men reported a more negative relationship between their estimates of partner's pornography use and commitment than women. Furthermore, the path between partner's pornography use and sexual satisfaction was found to differ between men and women ($\Delta\text{CFI} = .112$). The path between estimates of partner's pornography use and sexual satisfaction was more strongly positive for men than women.

Discussion

The main objective of the current study was to examine the relationship between pornography use and relationship outcome variables, using a large unbiased sample, and well-established measures. Participants' self-reported pornography use and their perceptions of their partners' pornography use were regressed onto relationship quality and sexual satisfaction.

Results suggested that for men, their pornography use was negatively associated with their sexual satisfaction. Similar results have been found in previous studies, although past studies typically report stronger negative associations between men's pornography use and their sexual satisfaction than we found in our data (e.g., Albright, 2008; Doran & Price, 2014; Poulsen et al., 2013). We did not find any significant association between men's self-reported

pornography use and their relationship quality. This is consistent with one previous study that found a null association between men's pornography use and their relationship quality (Træen & Daneback., 2013). However, a greater number of studies report a negative relationship between men's pornography use and their relationship quality (e.g., Szymanski et al., 2015; Szymanski & Stewart-Richardson, 2014).

We also found a moderate positive relationship between men's estimate of their partner's pornography use and men's sexual satisfaction. To date, there has been no study that has measured men's estimates of partner's pornography use. Thus, it is difficult to compare our findings to the findings from past research. Studies that have measured actual partner use have found that, in heterosexual relationships, women's pornography use is unrelated to their partners' sexual satisfaction (e.g., Poulsen et al., 2013). There was no significant association between pornography use and men's relationship quality; however, there was a negative association between men's pornography use and their commitment, such that men who estimated that their partners used pornography more frequently were less committed to their relationship.

Most studies in the literature do not examine associations between women's pornography use and their relationship outcomes. Of the few studies that have, results suggest that women's pornography use is not related to their relationship satisfaction (Poulsen et al., 2013). Our findings are consistent with past research. We found that for women, there was no significant association between their pornography use and their relationship quality or their sexual satisfaction. However, we also look at relationship quality as a latent construct, consisting not only of relationship quality, but also commitment and closeness.

Consistent with a subset of prior literature that has measured women's estimates of their partner's pornography use (e.g., Szymanski et al., 2015; Szymanski & Stewart-Richardson,

2014), we found that women's perceptions of their partner's pornography use was weakly, and negatively, associated with their own relationship quality. In contrast to the findings focused on men, women's perceptions of their partner's pornography use were not significantly associated with their sexual satisfaction. Thus, for women, the only statistically important relationship observed was between perceptions of their partner's pornography use and relationship quality, which, although significant, was small in magnitude.

These results provide valuable insight into the association between pornography and relationship outcomes. In Study 2 we attempted to replicate these results in an independent sample, and extend them by investigating whether the associations between pornography use and relationship quality and sexual satisfaction remain after accounting for related contextual variables, such as the quality of their communication around pornography use.

Table 1. Study 1 Descriptive Statistics and Bivariate Correlations.

Variable	M	SD	α	1a	1b	1c	2	3	4
1 Relationship Quality									
a Relationship satisfaction	37.43	7.86	.95	--	.58***	.67***	.57***	-.08 ^{ns}	.03 ^{ns}
b Closeness	5.25	1.61	--	.56***	--	.41***	.40***	-.09 ^{ns}	.04 ^{ns}
c Commitment	48.78	9.53	.87	.61***	.42***	--	.40***	-.07 ^{ns}	-.13*
2 Sexual Satisfaction	27.99	6.79	.96	.59***	.42***	.40***	--	-.13*	.15*
3 Individual's pornography use	8.95	4.57	.94	-.08 ^{ns}	-.06 ^{ns}	-.19***	.05 ^{ns}	--	.54***
4 Partner's pornography use	8.33	4.66	.93	-.20***	-.12*	-.23***	-.03 ^{ns}	.59***	--

Note: Correlations for men are above the diagonal and correlations for women are below the diagonal. ns = not significant. * $p < .05$.

** $p < .01$. *** $p < .001$.

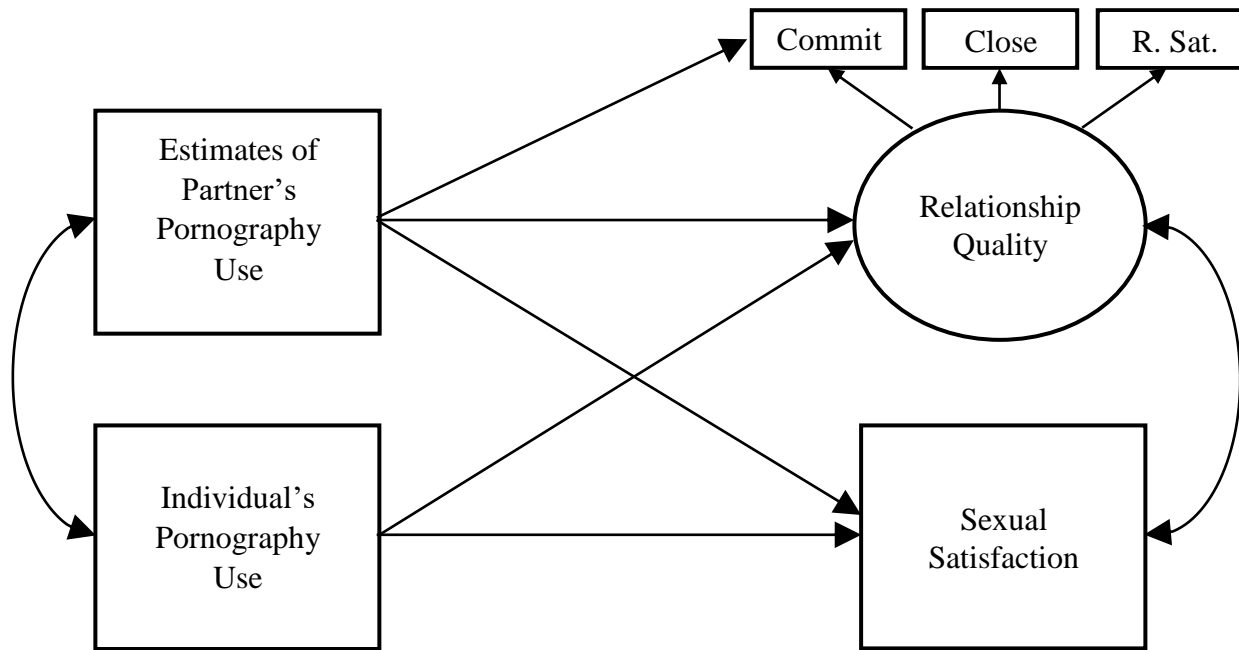


Figure 1. Hypothesized model for the relationship between pornography use and relationship outcomes.

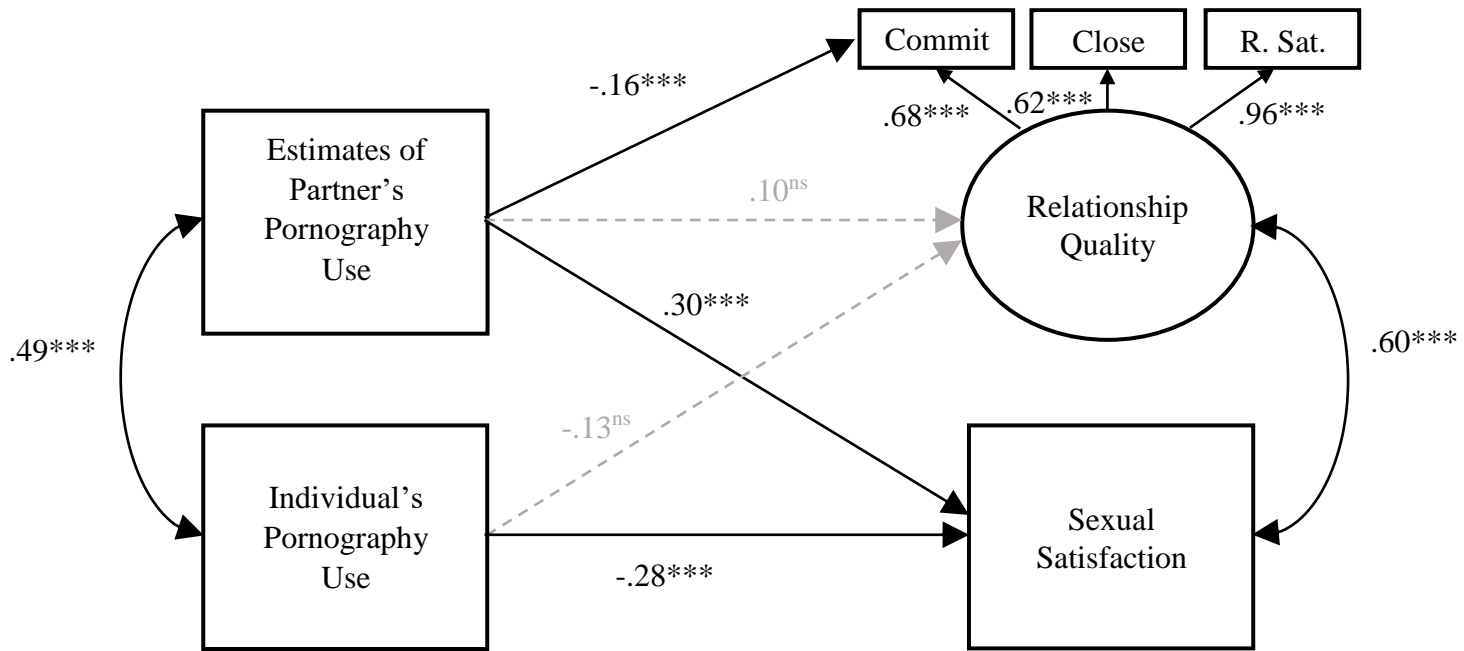


Figure 2. Study 1 pornography use and relationship outcomes for men. Numbers are standardized parameter estimates. ns = not significant. * $p < .05$. ** $p < .01$. *** $p < .001$.

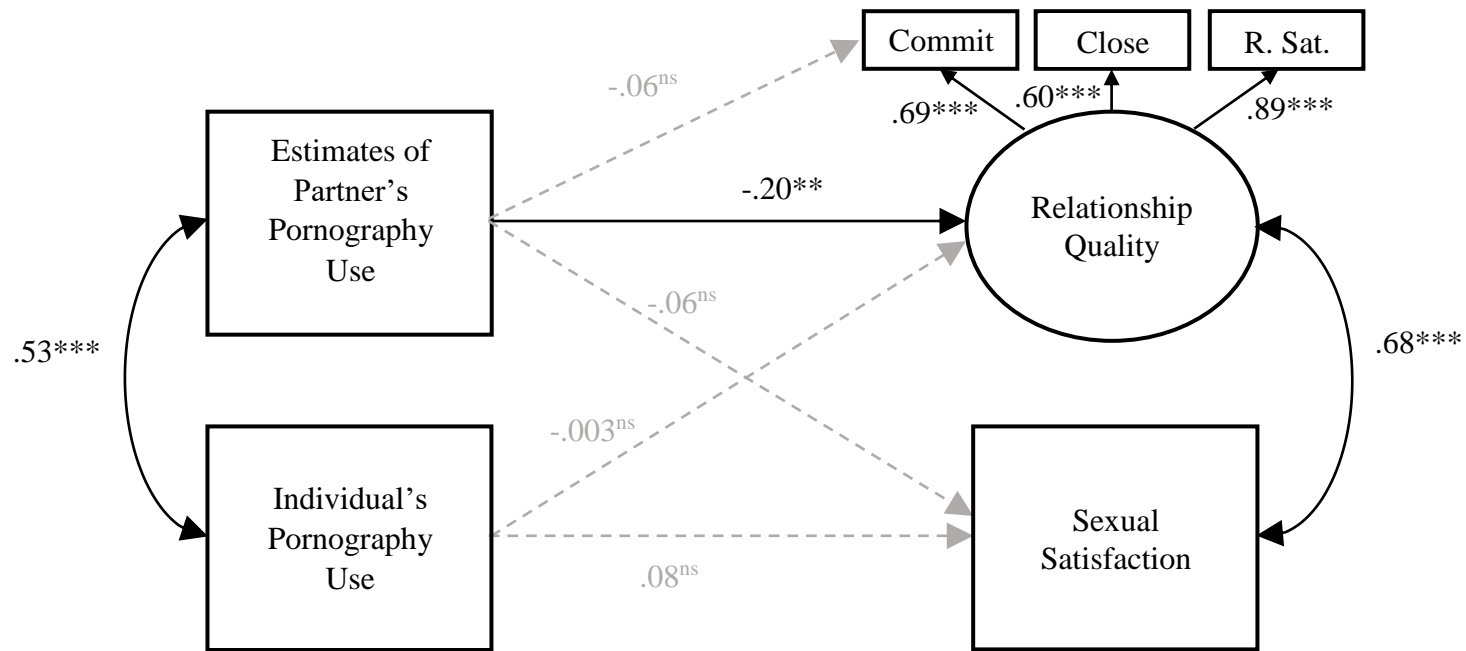


Figure 3. Study 1 Pornography use and relationship outcomes for women. Numbers are standardized parameter estimates. ns = not significant. * $p < .05$. ** $p < .01$. *** $p < .001$.

Study 2

In our investigation of pornography use and relationship outcomes that was conducted in Study 1, we did not account for any contextual variables that might influence the observed effects. In particular, the quality of a couple's communication around pornography may be more strongly associated with relationship outcomes than whether they use pornography.

In sexual script theory, communication is the key mechanism through which partners in a dyad gain a better understanding of each other's sexual likes and dislikes. Byers and colleagues developed a theoretical model to explain how sexual self-disclosure relates to relationship outcomes, with specific focus on sexual satisfaction (Lawrance & Byers, 1995; MacNeil & Byers, 2009). They proposed two main pathways through which sexual self-disclosure relates to sexual satisfaction: The instrumental pathway and the expressive pathway (MacNeil & Byers, 2009). The instrumental pathway posits that disclosing sexually intimate details to one's partner leads to better sexual satisfaction through expressing needs and wants. Partners then develop a better understanding of each other and have their individual sexual desires met (MacNeil & Byers, 2009). The expressive pathway, on the other hand, posits that sexual self-disclosure leads to sexual satisfaction by promoting closeness and intimacy (MacNeil & Byers, 2009). Sharing details of personal likes and dislikes will facilitate partners feeling closer to one another.

When applied to pornography-related communication, Byers' work suggests that there may be an instrumental benefit to partners being able to have open discussions about pornography related topics. It may help them understand each other's likes and dislikes (instrumental pathway) and also facilitate closeness and intimacy in the relationship (expressive pathway). Furthermore, although Byers does not speak specifically to this in her model, knowing each other's viewpoints on pornography may serve additional benefits. It may allow partners to

clarify their values and expectation around the individual or mutual use of pornography. It may also serve to enhance trust in the relationship through the knowledge that a partner is sharing information that might be difficult or embarrassing for him/her share.

Several lines of evidence from past work also support our inclusion of communication variables into our model. First, when researchers have examined predictors of sexual satisfaction and have compared the role of individual difference variables, such as personality factors, affective tendencies, and sociodemographic factors, they have found that the association with sexual satisfaction is either absent or inconsistent (see review by Rehman, Fallis, & Byers, 2013). In contrast, interpersonal factors, particularly the quality of communication between partners tends to be a stronger factor in predicting sexual satisfaction. Second, past studies have found that even when individual difference variables do predict lower sexual satisfaction, they tend to be moderated by interpersonal factors. For example, Fisher and McNulty (2008) found that the negativity of couples' sexual communication partially accounted for the association between wives' neuroticism and the couples' sexual satisfaction.

To review, we had two overarching goals for Study 2. The first goal was to replicate the findings from Study 1 in an independent sample. The second goal of Study 2 was to investigate whether the association between pornography use and relationship outcomes changes when you control for the overall quality of communication between partners, and more specifically, the quality of their pornography-related communication. We tentatively predicted that any significant association between own pornography use and relationship outcomes as well as between partner pornography use and relationship outcomes would become attenuated when we controlled for the overall quality of communication between partners and their pornography related communication.

Methods

Participant

Participants were recruited from Amazon's Mechanical Turk to participate in a study on romantic relationships and sexuality. Potential participants were informed that they would be asked to complete a series of questions about different aspects of their relationship and sexuality. In order to participate, participants were required to be adults in a long-term, committed relationship. Furthermore, individuals who participated in Study 1 were prohibited from participating in Study 2.

There were 846 participants who initially participated in the study. However 67 participants were excluded because they did not meet eligibility criteria (i.e., were single). Furthermore, 6 participants were excluded because they answered two or more validity questions incorrectly (e.g., "Please select 7 for this question"). The final sample included 773 participants. In our final sample, participants were, on average 33.47 years of age ($SD = 10.39$). Approximately half of the participants were female (51.4%) and most participants were Caucasian (79.9%). Participants were with their partner for an average of 7.61 years ($SD = 26.76$). The length of the relationships ranged from 1 month to 51 years. Participants were educated 15.67 years on average ($SD = 4.37$) and had an average combined income with their partner of \$72,603.04 ($SD = \$78,568.38$). In the final sample, 46.2% were married and 53.8% were cohabitating

Measures

All measures from Study 1 were also used in Study 2. Reliability estimates for these measures were all in the acceptable range: relationship satisfaction ($\alpha = .95$), commitment ($\alpha = .90$), sexual satisfaction ($\alpha = .96$), individual's pornography use ($\alpha = .93$), and partner's

pornography use ($\alpha = .95$). Study 2 also included additional measures of overall quality of communication, quality of pornography-related communication. We controlled for the role of sociodemographic variables and erotophilia/erotophobia, which is the tendency of an individual to respond to sexual cues in either a positive or negative manner (Fisher, White, Byrne, & Kelley, 1988). Erotophilia/erotophobia was included as a control in the current study because we wanted to rule out the possibility that any pornography-related communication was not due to the individual's predisposition to respond to pornography use in a certain way. Each of these additional measures is described below.

Quality of Pornography-related communication. The quality of pornography-related communication was measured using a modified version of the Post-Discussion Questionnaire (M-PDQ; Heavey, Layne, & Christensen, 1993). The measure was modified such that participants were instructed to respond to the questionnaire while recalling instances when they had discussed pornography with their partner. If participants had never discussed pornography with their partner, they were able to select "not applicable" for each item. Participants responded to 5 items (e.g., "My partner treated me with respect.") along a 7-point Likert-type scale from 1 (*not at all*) to 7 (*very much*). Responses range from 7 to 35, with higher scores indicating a higher quality of pornography-related communication. The M-PDQ demonstrated good reliability in the present study ($\alpha = .88$).

Quality of overall relationship communication. The quality of overall relationship communication was measured using the Dyadic Communication Scale (DCS; Catania, 1986). Participants respond to 9 items (e.g., "My partner and I can usually talk calmly to one another.") along a 6-point Likert-type scale from 1 (*disagree strongly*) to 6 (*agree strongly*). Responses range from 0-56, with a higher number indicating more commitment to their partner. The IMS-C

demonstrated good reliability in the present study ($\alpha = .87$). Responses range from 9 to 36, with higher scores indicating a higher quality of communication in the relationship. The DCS demonstrated good reliability in the present study ($\alpha = .86$).

Erotophilia/Erotophobia. Erotophilia/erotophobia was measured using the short form of the Sexual Opinion Survey (SOS-SF; Fisher et al., 1988). Participants responded to 5 items (e.g., “The thought of engaging in unusual sex practices is highly arousing.”) along a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses range from 5-35, with a higher number indicating more erotophobia. The SOS-SF demonstrated good reliability in the present study ($\alpha = .68$).

Procedure

The procedure for Study 2 was the same as for Study 1.

Results

Descriptive Statistics and Bivariate Correlations

Overall means, standard deviations, and Cronbach’s alphas for study variables are described in Table 2. Bivariate correlations are also reported in Table 2 for both men and women.

Replication of Study 1

The first goal of Study 2 was to test whether we could replicate the findings from Study 1 on the associations between pornography use and relationship outcomes. The same model used in Study 1 was used to analyze this data (see Figures 4 and 5). Factor loading for the relationship quality manifest indicators were significant ($p < .001$) and ranged from .58 to .93 for men and .56 to .93 for women. As with study 1, age, religion, and relationship length were controlled for in the model. We used the same criteria for model fit in the current model as we did in study 1

(CFI > .95, a RMSEA < .06, and SRMR < .08). The model had acceptable fit: CFI = .98; RMSEA = .43 (90% CI: .00, .07); SRMR = .04. The theoretically relevant paths are described below. The same criteria was used to judge effect sizes as in Study 1.

Men's pornography use and relationship outcomes. Men's pornography use was negatively associated with their sexual satisfaction, $\beta = -.31$, S.E. = .08, $p < .001$ (see Figure 4). The effect was moderately strong. There was no significant association between men's pornography use and their relationship quality, $\beta = -.14$, S.E. = .10, $p = .14$. Results for men's pornography use and relationship outcomes perfectly replicate our findings from Study 1 in terms of statistical significance of different pathways and the relative magnitude of the effects.

Men's perceptions of partner's pornography use and relationship outcomes. Men's estimate of their partner's pornography use was significantly and positively associated with men's sexual satisfaction, $\beta = .33$, S.E. = .09, $p < .001$ (see Figure 4). Thus, men who estimated that their partners use higher levels of pornography were more sexually satisfied, as compared to men who estimated that their partners used pornography less frequently. The effect size was in the moderate range. A path between partner's pornography use and commitment was added to the model, as suggested by modification indices in order to improve model fit. Men's perceptions of their partner's pornography use was also significantly negatively associated with their commitment to their partner, $\beta = -.11$, S.E. = .05, $p = .02$. That is, men who estimated that their partners use higher levels of pornography were less committed to their romantic partners. However, this effect was in the small range. The association between men's estimates of their partner's pornography use and men's relationship quality was nonsignificant, $\beta = .12$, S.E. = .11, $p = .26$. Results for these pathways also replicate our findings from Study 1 in terms of statistical significance and the relative magnitude of the effects.

Women's pornography use and relationship outcomes. Similar to study 1, there was no significant association between women's self-report of pornography use and their relationship quality, $\beta = .04$, S.E. = .10, $p = .68$ (see Figure 5). Women's own pornography use was not significantly associated with their sexual satisfaction ($\beta = .16$, S.E. = .09, $p = .08$), which is similar to what was found in Study 1.

Women's perceptions of partner's pornography use and relationship outcomes. Women's estimate of their partner's pornography use was significantly and negatively associated with their relationship quality, such that women who estimated that their partner used pornography more frequently were less relationally satisfied, $\beta = -.22$, S.E. = .10, $p = .04$ (see Figure 5). This effect size was in the small range. There was no significant association between women's estimate of partner's pornography use and women's sexual satisfaction, $\beta = -.16$, S.E. = .10, $p = .11$. These results are similar to our findings from Study 1.

Gender Differences. As in Study 1, multi groups analysis was used to test whether the paths of the hypothesized model in Figures 4 and 5 differed between men and women. The multi groups analysis revealed gender differences for one path: partner's pornography use and sexual satisfaction ($\Delta\text{CFI} = .011$). Men reported a more positive relationship between their estimates of their partner's pornography use and their sexual satisfaction. This path was also found to be more positive for men than women in Study 1. Unlike in Study 1, the path between perceived partner's pornography use and commitment did not differ between men and women ($\Delta\text{CFI} = .004$).

Pornography Use, Communication, and Relationship Outcomes

The second goal of the current study was to test an expanded model that included two additional variables of interest: self-reports of general relationship communication and self-reported of pornography related communication (see Figure 6 for the hypothesized model). Our

goal was to examine whether communication variables, particularly pornography-related communication, were more strongly associated with relationship outcome variables in comparison with one's own pornography use or estimates of partner's pornography use. As with the earlier analyses, age, religion, and relationship length were controlled for in the model. We also controlled for erotophilia in our analyses to rule out the possibility that our findings were driven by an individual's overall tendency to respond to sexual cues in either a positive or negative manner.

The initial structural model fit the data well: CFI = .97; RMSEA = .06 (90% CI: .05, .08), SRMR = .03. Similar to the previous models, parameter estimates for the males is shown in Figure 7 and the parameter estimates for the females is shown in Figure 8.

Men's pornography use and relationship outcomes. There a significant negative association between men's pornography use and their relationship quality, $\beta = -.12$, S.E. = .05, $p = .02$ (see Figure 7). This effect was small in magnitude. Men's pornography use was not associated with their sexual satisfaction, $\beta = .08$, S.E. = .06, $p = .18$. This is a large decrease from this effect size in the previous model ($\beta = -.31$; Figure 4).

Men's perceptions of partner's pornography use and relationship outcomes. There was no significant association between men's estimates of their partner's pornography use and men's sexual satisfaction, $\beta = .08$, S.E. = .06, $p = .18$ (see Figure 7). This is a large decrease from this effect size in the previous model ($\beta = .33$; Figure 3). There was also no significant association between men's estimates of their partner's pornography use and men's relationship quality, $\beta = .04$, S.E. = .06, $p = .55$. As in the previous model (see Figure 4), there was a significant association between men's estimates of pornography use and their commitment to the relationship, such that men who estimated that their partners used pornography more frequently

were less committed to the relationship, $\beta = -.09$, S.E. = .04, $p = .01$. As before, the magnitude of this effect was small.

Men's overall relationship communication quality and relationship outcomes. Men's overall relationship communication quality was significantly and positively associated with self-reported relationship quality, $\beta = .73$, S.E. = .04, $p < .001$ (see Figure 7). This was a strong effect. Men's reports of the overall quality of the communication in the relationship was also significantly associated with men's sexual satisfaction, $\beta = .40$, S.E. = .05, $p < .001$. The effect size was moderately strong for sexual satisfaction.

Men's pornography-related communication quality and relationship outcomes. Men's pornography-related communication quality was significantly and positively associated with sexual satisfaction, $\beta = .18$, S.E. = .06, $p = .003$ (see Figure 7). The effect size was in the small range. Men's pornography-related communication was not associated with their relationship quality, $\beta = .001$, S.E. = .06, $p = .99$.

Women's pornography use and relationship outcomes. There was a trend for women's own pornography use to be related to relationship quality, with women who reported more frequent pornography use reporting marginally lower relationship quality, $\beta = -.10$, S.E. = .06, $p = .06$ (see Figure 8). This was a small effect. Women's own pornography use was unrelated to their sexual satisfaction, $\beta = .05$, S.E. = .06, $p = .43$.

Women's perceptions of partner's pornography use and relationship outcomes. Women's perceptions of their partner's pornography use was not related to women's relationship quality, $\beta = -.07$, S.E. = .06, $p = .25$, their commitment to their partner, $\beta = -.03$, S.E. = .03, $p = .39$, or their sexual satisfaction, $\beta = -.07$, S.E. = .07, $p = .31$ (see Figure 8).

Women's overall relationship communication quality and relationship outcomes.

Women's overall relationship communication quality was significantly and positively associated with relationship quality, $\beta = .63$, S.E. = .04, $p < .001$ (see Figure 8). This was a strong effect. It was also significantly and positively correlated with sexual satisfaction, $\beta = .40$, S.E. = .05, $p < .001$. The effect size was moderately strong for sexual satisfaction.

Women's pornography-related communication quality and relationship outcomes.

Women's pornography-related communication quality was significantly and positively associated with both relationship quality, $\beta = .20$, S.E. = .05, $p < .001$, and sexual satisfaction, $\beta = .18$, S.E. = .06, $p < .001$ (see Figure 8).

Gender Differences. Multi groups analysis was used again to test whether the paths of the hypothesized model in Figures 7 and 8 differed between men and women. The multi groups analysis did not detect any gender differences between paths.

Discussion

There were two key goals for Study 2. Our first goal was to replicate the findings from Study 1 in an independent sample. Our second goal was to extend the findings by examining how pornography-related communication and general relationship communication related to relationship outcomes.

In Study 2, we were largely able to replicate the results from Study 1. Namely, we found a moderate, negative association between men's pornography use and their sexual satisfaction. We also found a moderate positive association between men's estimates of their partner's pornography use and men's sexual satisfaction. As in Study 1, we found no significant association between men's pornography use and their overall relationship quality nor between men's estimates of their partner's use and men's relationship quality.

For women, perceptions of their partner's pornography use was weakly and negatively associated with their relationship quality in both Studies 1 and 2. All other associations were nonsignificant for women in both Studies 1 and 2. Thus, for women, the only statistically important relationship observed was between perceptions of their partner's pornography use and relationship quality, which, although significant, was small in magnitude.

The second goal of Study 2 was to test an expanded model that included communication variables (overall quality of communication and the quality of pornography-related communication). Before these variables were added, two pathways had been significant: (a) the association between men's pornography use and men's sexual satisfaction; and (b) the association between men's estimates of their partner's pornography use and men's sexual satisfaction. Both of these associations were attenuated when communication variables were added in the model. The first association (between men's pornography use and men's sexual satisfaction) decreased from a β of $-.31$ to -0.09 and became nonsignificant. The second association (between men's estimates of their partner's pornography use and men's sexual satisfaction) also became nonsignificant after the addition of communication variables to the model. The β changed from $.33$ to $.08$. There was one difference in the other direction; the association between men's own pornography use and men's relationship quality was nonsignificant before the inclusion of the communication variables and became significant in the expanded model. In both cases, however, the effect size was comparable ($\beta = -.14$ in the model without communication variables and $\beta = -.12$ in the model with communication variables added).

Consistent with numerous past studies (e.g., MacNeil & Byers, 2009), men's reports of the quality of their overall communication were significantly associated with their relationship

quality and their sexual satisfaction. Interestingly, our data showed that even after controlling for overall relationship communication, pornography-related communication was significantly and positively associated with sexual satisfaction. Men's reports of the quality of pornography-related communication was not, however, associated with men's relationship quality. Although pornography-related communication was weakly associated with sexual satisfaction, it was a stronger relationship than any of the associations between men's own pornography use or their estimates of their partner's use and men's relationship outcomes.

For women, the only significant pathway for replication was the association between women's estimates of their partner's pornography use and women's relationship quality, such that women who estimated that their partners reported higher levels of pornography use were less satisfied with their relationship. In the subsequent model, when we included the two communication variables and controlled for erotophilia, this association became attenuated and was nonsignificant. Not surprisingly, and consistent with numerous past studies (e.g., MacNeil & Byers, 2009), women's reports of the quality of their overall communication were significantly associated with their relationship quality and their sexual satisfaction. Interestingly, our data showed that even after controlling for overall relationship communication, pornography-related communication significantly predicted both relationship quality and sexual satisfaction. Although pornography-related communication was weakly associated with relationship quality and sexual satisfaction, it was more strongly associated with these outcome variables than women's pornography use, or their perceptions of their partner's pornography use.

Overall, we observed that for women, the addition of the quality of pornography-related communication and the quality of overall relationship communication account for some of the variance in relationship quality and sexual satisfaction that was previously explained by partners'

pornography use. For men, the addition of communication variables accounted for some of the variance in sexual satisfaction that was previously explained by both their pornography use and their perceptions of their partner's pornography use. These findings suggest that the overall quality of communication and pornography-related communication are more relevantly associated with relationship outcomes, compared to their pornography use or their estimates of their partner's pornography use. Thus, our findings underscore the importance of contextualizing pornography use in the broader context of the relationship.

Furthermore, we also found evidence for the importance of specific, sexual self-disclosure to both relationship quality and sexual satisfaction over and above overall, non-sexual communication. Specifically, better quality pornography-related communication has a positive association with relationship quality for women and sexual satisfaction for both men and women. These associations were significant while accounting for the quality of overall relationship communication and their tendency to respond positively to sexual cues (i.e., erotophobia).

In sum, the current study replicated and extended upon the findings from Study 1. We found that communication is more strongly associated with relationship quality and sexual satisfaction than participants' own pornography use and participants' perceptions of their partner's pornography use. Furthermore, quality of pornography-related communication was positively associated with relationship quality for women and sexual satisfaction for women and men, over and above quality of overall relationship communication.

Table 2. Study 2 Descriptive Statistics and Bivariate Correlations.

Variable	M	SD	α	1a	1b	1c	2	3	4	5	6	7
1 Relationship Quality												
a Relationship satisfaction	37.80	7.76	.95	--	.52***	.67***	.43***	-.14**	-.01 ^{ns}	.34***	.63***	.02 ^{ns}
b Closeness	5.27	1.62	--	.53***	--	.49***	.45***	-.17**	-.01 ^{ns}	.24***	.46***	.11*
c Commitment	48.53	10.49	.90	.66***	.54***	--	.33**	-.07 ^{ns}	-.08 ^{ns}	.25***	.56***	-.03 ^{ns}
2 Sexual Satisfaction	28.46	6.25	.96	.59***	.43***	.41***	--	-.08 ^{ns}	.12*	.44***	.50***	.05 ^{ns}
3 Individual's pornography use	9.15	4.32	.93	-.13**	-.12*	-.19***	.04 ^{ns}	--	.46***	.01 ^{ns}	-.06 ^{ns}	-.30***
4 Estimate of partner's pornography use	8.00	4.66	.95	-.20**	-.12*	-.21***	-.03 ^{ns}	.65***	--	.35***	-.01 ^{ns}	-.16**
5 Pornography-related communication	29.18	7.97	.88	.55***	.28***	.44***	.43***	.04 ^{ns}	-.08 ^{ns}	--	.50***	-.01 ^{ns}
6 Overall relationship communication	43.77	6.47	.86	.71***	.42***	.53***	.52***	-.05 ^{ns}	-.16**	.62***	--	-.002 ^{ns}
7 Erotophobia	16.72	6.67	.68	.12*	.17**	.11*	-.04 ^{ns}	-.42***	-.27***	-.06 ^{ns}	-.02 ^{ns}	--

Note: Correlations for men are above the diagonal and correlations for women are below the diagonal. ns = not significant.

*p < .05. **p < .01. ***p < .001.

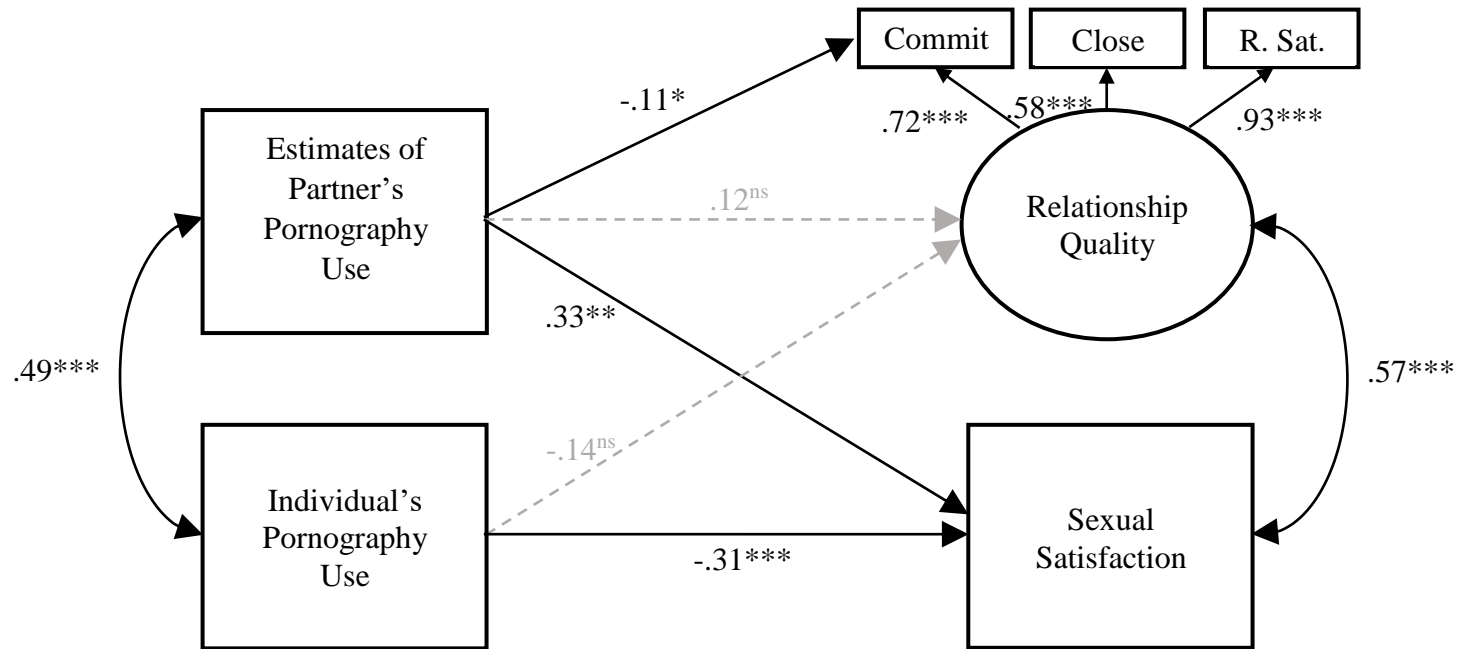


Figure 4. Study 2 pornography use and relationship outcomes for men. Numbers are standardized parameter estimates. ns = not significant. * $p < .05$. ** $p < .01$. *** $p < .001$.

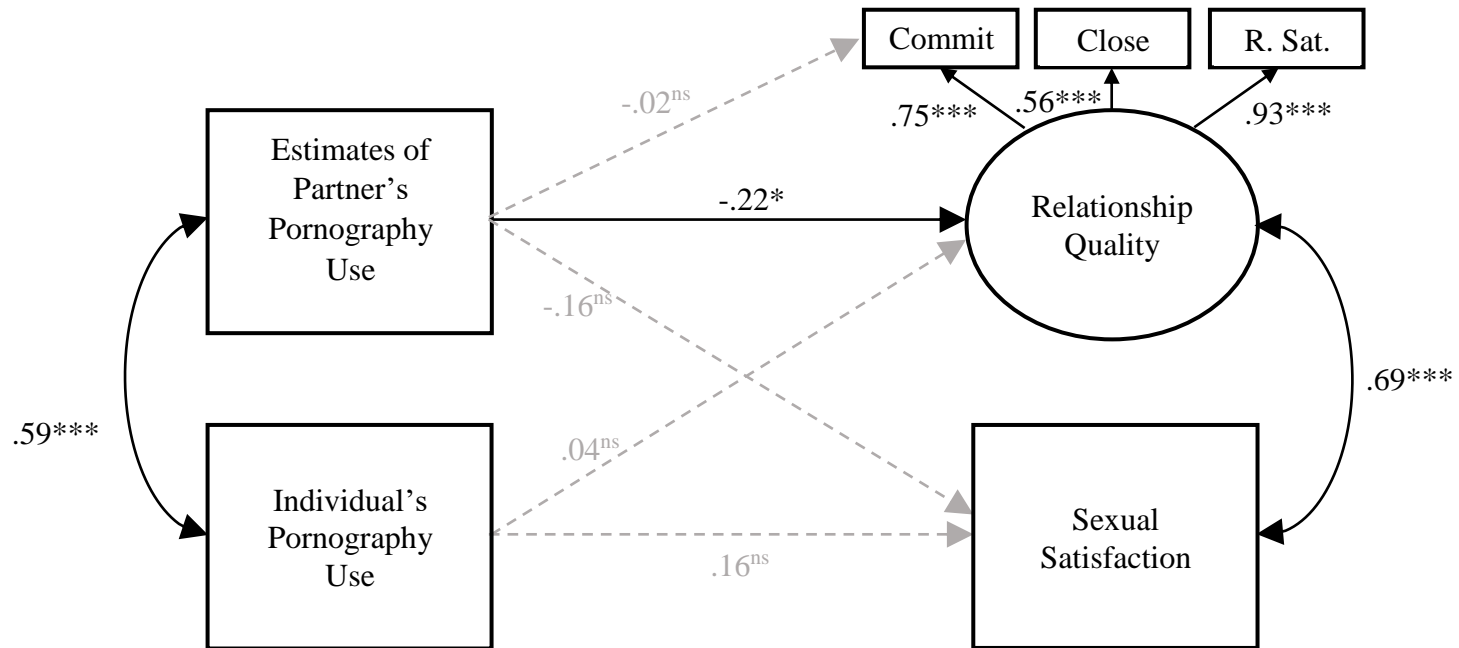


Figure 5. Study 2 pornography use and relationship outcomes for women. Numbers are standardized parameter estimates. ns = not significant. * $p < .05$. ** $p < .01$. *** $p < .001$.

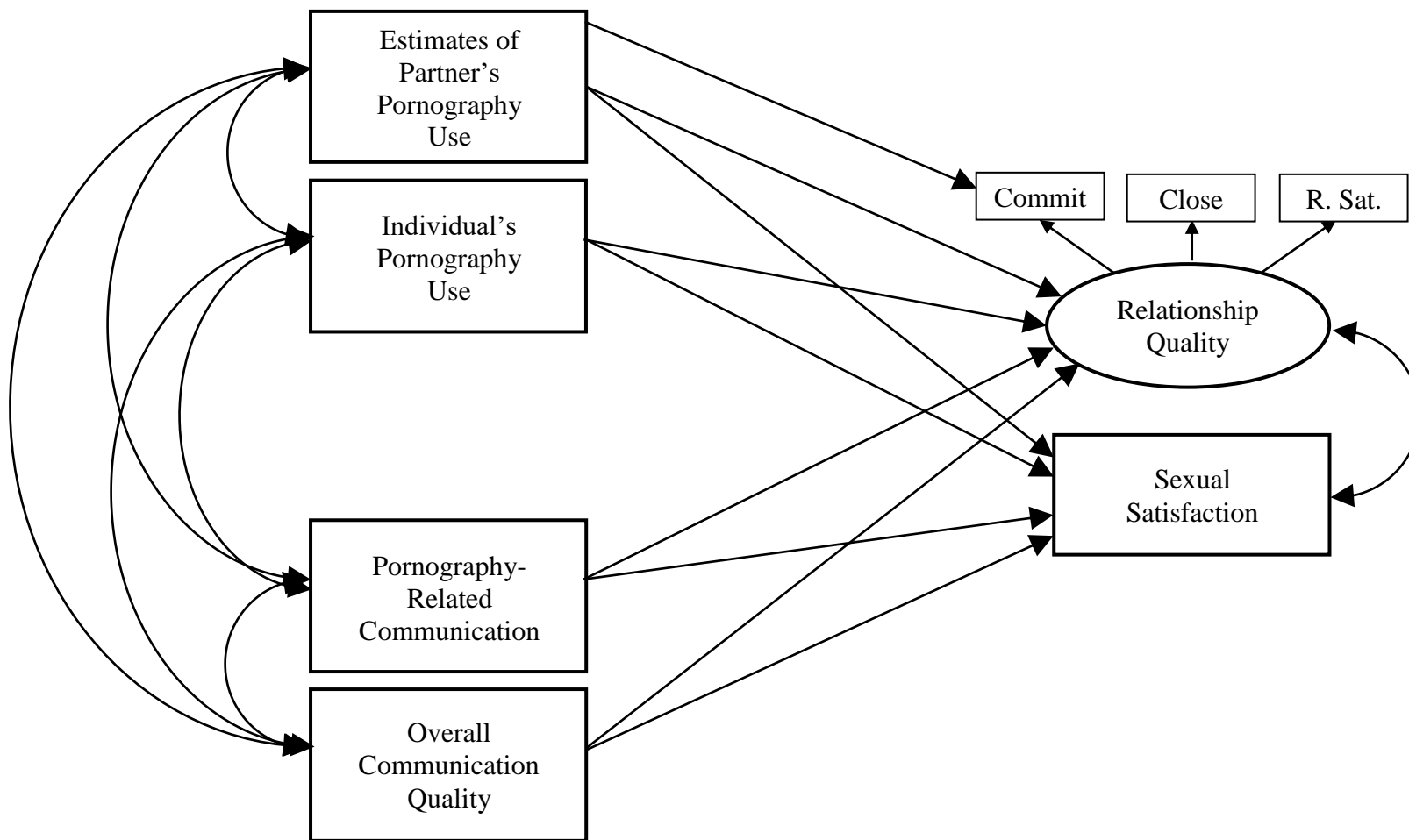


Figure 6. Hypothesized model for the relationship between pornography use, communication, and relationship outcomes.

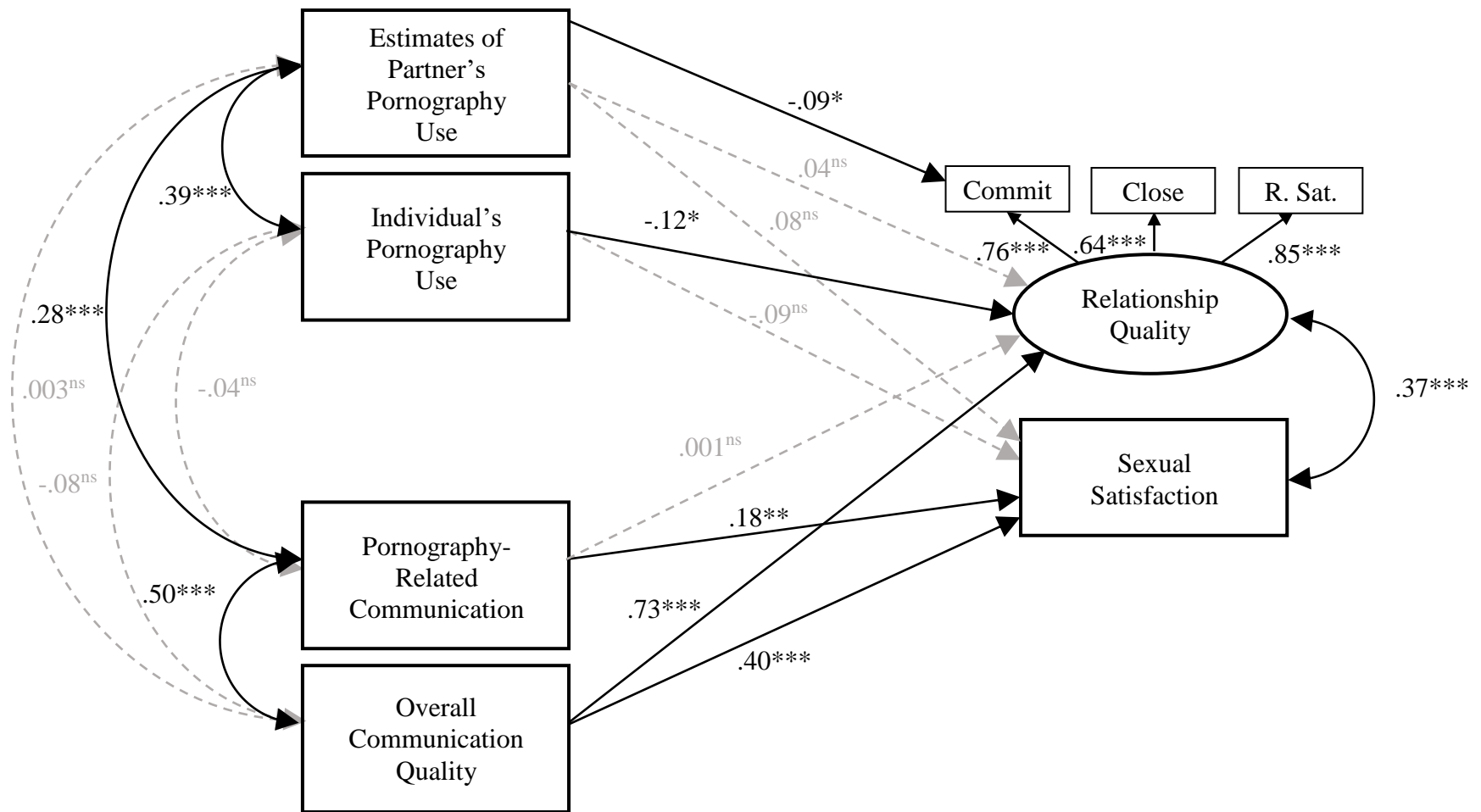


Figure 7. Study 2 pornography use, communication, and relationship outcomes for men. Numbers are standardized parameter estimates. ns = not significant. * $p < .05$. ** $p < .01$. *** $p < .001$.

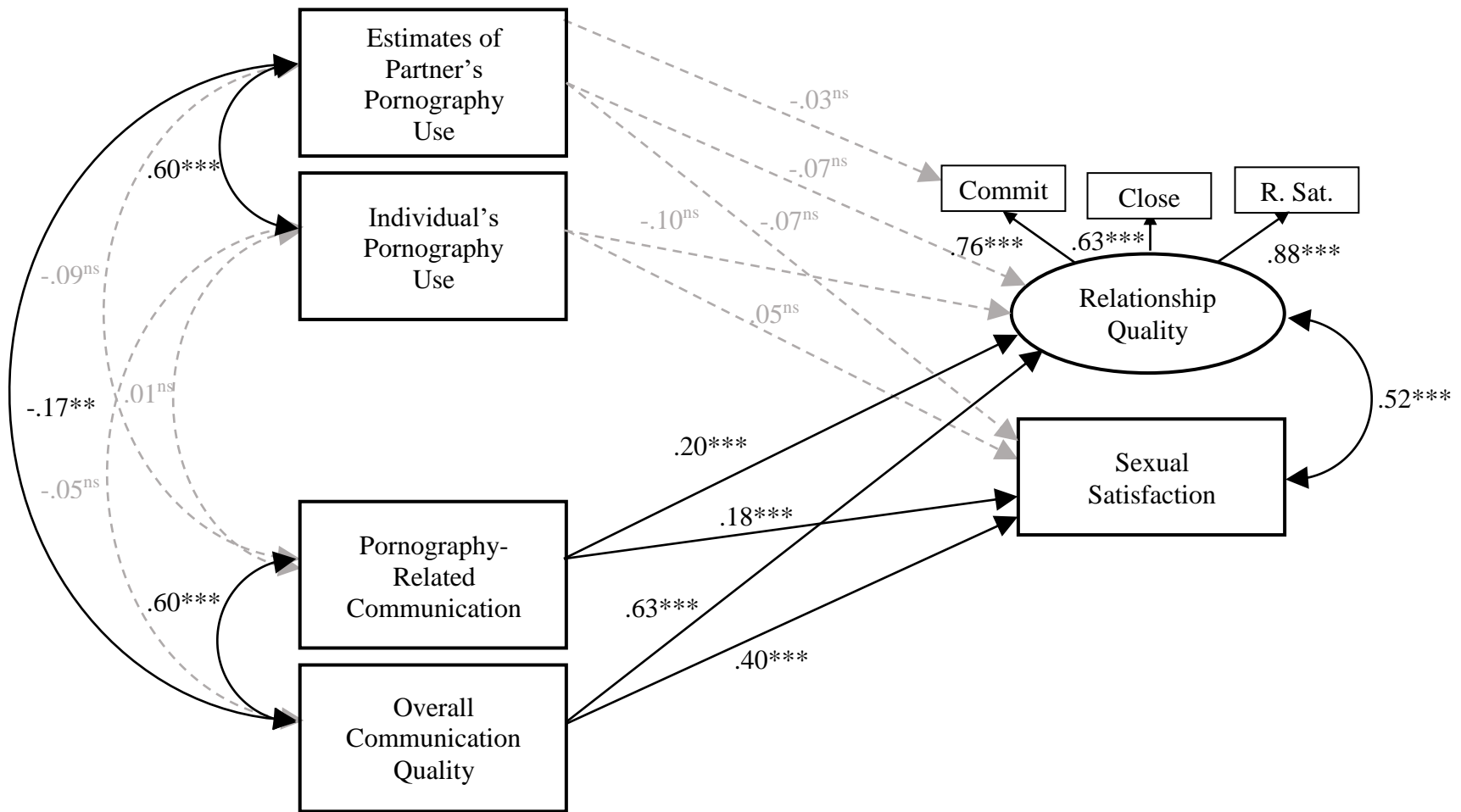


Figure 8. Study 2 pornography use, communication, and relationship outcomes for women. Numbers are standardized parameter estimates. ns = not significant. * $p < .05$. ** $p < .01$. *** $p < .001$.

Study 3

Study 2 revealed that having good quality pornography-related communication is important for relationship quality and sexual satisfaction, over and above general communication. Despite the numerous benefits of self-disclosure in romantic relationships, disclosure can be risky and can expose vulnerabilities in the relationship as well as expose the person engaging in the disclosure to shame and embarrassment (Anderson, Kunkel, & Dennis, 2011). Although there are reasons to predict that pornography may be a topic that tends to be avoided by couples, there has been no past study that has directly investigated this question.

The broader literature on sexual self-disclosure informs the question about whether discussions relating to pornography might be avoided by romantic partners. Research on self-disclosure indicates that individuals have a difficult time disclosing sexual preferences, as compared to nonsexual preferences (MacNeil & Byers, 2005). Within the category of sexual preferences, individuals are more likely to disclose sexual likes as compared to sexual dislikes. Past findings also show that estimates of a partner's sexual preferences are more likely to be based on stereotypes of sexual behaviour (e.g., length of foreplay or duration of sexual activity), rather than actual partner preferences (MacNeil & Byers, 2005).

The literature on topic avoidance (i.e., purposefully refraining from discussing specific topics) explores why certain topics are avoided more often than others (Anderson et al., 2011; Dailey & Polamares, 2004). Anderson, Kunkel, and Dennis (2011) identified four reasons for topic avoidance in their work: the belief that a topic is best kept in the past, the belief that the topic poses a threat to one's identity, that it poses a threat to their relationship, or that the topic may be emotionally upsetting (e.g., embarrassment). Furthermore, research has shown that sexual topics are more difficult to discuss than other non-sexual topics because sexual topics tend

to feel more threatening to the individual and are associated with a high perceived risk for embarrassment (Oattes & Offman, 2007; Theiss, 2011).

Based on the sexual self-disclosure and topic avoidance literature, we would expect that individuals would be motivated to avoid discussing pornography use with their partner. In Study 3, we examined the degree to which the topic of “pornography use” was avoided, relative to other sexual and nonsexual topics, as well as the association between pornography use topic avoidance and relationship outcomes. Although certain topics are avoided with the goal to protect the self, the partner, or the relationship, topic avoidance has been linked to negative long-term consequences. For example, discussing sexual topics has been linked to higher relationship satisfaction and sexual satisfaction (Hess & Confelt, 2012; Mark & Jozkowski, 2013).

Furthermore, attempts to avoid discussing sexual topics has been linked to lower sexual satisfaction as well as the other partner feeling uncertain about the relationship (Theiss, 2011). Thus, we predicted that the degree to which individuals avoid the topic of pornography use with their partners would be associated with lower relationship quality and lower sexual satisfaction.

Before we can compare the degree to which the topic of “pornography use” is avoided relative to other topics, a measure of topic avoidance must first be selected. There are a number of topic avoidance measures in the literature (e.g., Dailey & Polmares, 2004), but an important limitation of these measures is that they do not control for breadth of topic. Specifically, some topics may be discussed less because they are narrower in scope than other topics. Narrower topics may also be avoided less simply because they have less subtopics and do not come up in conversation as frequently as other topics that are broader. Because the breadth of topic would likely have an impact on how frequently avoided it is, we wanted to control for that in our

analyses, and to compare pornography-related topic avoidance to the avoidance of other topics that are of similar breadth to pornography use.

Based on past literature (Daley & Polamares, 2007), we developed a list of topics that are frequently avoided by couples and asked participants to rate the breadth of each topic (Study 3a). Topics that were of similar breadth were then used to create a Topic Avoidance Questionnaire that was used in Study 3b. The purpose of Study 3b was to compare mean topic avoidance of pornography use with other topics of similar breadth. We hypothesized that compared to other relationship topics of comparable breadth, pornography related communication would be more likely to be avoided. Furthermore, we predicted that pornography use topic avoidance would be negatively related to both sexual and relationship satisfaction.

Study 3a Methods

Participants

Participants were recruited from Amazon's Mechanical Turk to participate in a study on communication in relationships. Potential participants were informed that they would be asked to complete a series of questions about different aspects of their relationship and sexuality. In order to participate, participants were required to be in a long-term, committed relationship. There were 123 participants who initially participated in the study. However 15 participants were excluded because they did not meet eligibility criteria (i.e., were single). Furthermore, 14 participants were excluded because they answered two or more validity questions incorrectly (e.g., "Please select 7 for this question"). The final sample included 94 participants. In our final sample, participants were, on average 36.09 years of age ($SD = 13.03$). Slightly more than half of the participants were male (51.1%) and most were Caucasian (80.4%). Participants were with their partner for an average of 8.35 years ($SD = 9.53$). The length of the relationships ranged

from 9 months to 53 years. Participants were educated 14.97 years on average ($SD = 2.43$) and had an average combined income with their partner of \$74,988.24 ($SD = 51,620.98$). Thirty-eight percent of our participants were married to their current partner while 62% were in a long-term committed relationship. The proportion of married participants in our sample is slightly lower than the percentage of married individuals in the United States (50.3%; United States Census Bureau, 2015).

Measures

Background questionnaire. A background questionnaire was used to measure various demographic variables, such as age, education level, as well as number of children. The background questionnaire also measured different aspects of their relationship history, such as their relationship status and length of their current relationship.

Topic breadth questionnaire. Based on past literature on topic avoidance, 14 topics that couples frequently avoid discussing were selected for this measure (e.g., how much money to spend; Daley & Polamares, 2007). An additional item on pornography use was added for the purpose of the current study. In total, participants were presented with 16 different topics (see Table 1 for the list of topics). For each topic, participants were asked to indicate along a 7-point Likert-type scale how broad the topic was from 1 (*very specific*) to 7 (*very broad*).

Procedure

The current study was approved by a university ethics board. Participants answered an online questionnaire. They responded to the background measure first, then the remaining study measures, which were presented to participants in a randomized order. Participants were compensated \$0.50 into their Amazon account.

Study 3a Results

The goal of study 3a was to examine which topics that are commonly avoided by couples are similar in breadth to pornography use. A repeated measures ANOVA (see Table 3) revealed that mean topic breadth differed significantly between the various topics ($F(14, 1274) = 21.06, p < 0.001$). Post hoc tests using the Bonferroni correction were used to test whether there were any mean differences in breadth of topic between pornography use and other commonly avoided topics. Pornography use ($M = 3.65, S.E. = .20$) was considered a statistically significantly broader topic to discuss than discussing drug use ($M = 2.68, S.E. = .19; p = .007$), as well as discussing paying bills on time ($M = 2.49, S.E. = .18; p = .002$). The remaining 11 topics were not statistically different in topic breadth from pornography use. However, qualitatively, some topics still appear to be broader than pornography use (e.g., balance between work and personal life). Therefore, topics that were within 1 S.E. from the mean breadth of pornography use were retained. Topics that were removed because they were more than 1 S.E. from the mean pornography use breadth included drug use ($M = 2.68, S.E. = .19; p = .007$), paying bills on time ($M = 2.49, S.E. = .18; p = .002$), completing responsibilities on times ($M = 3.39, S.E. = .17$), balance between work and personal life ($M = 4.18, S.E. = .16$), how much time to spend together ($M = 3.86, S.E. = .18$), style of communication ($M = 4.32, S.E. = .17$), and how much time to spend with friends ($M = 3.86, S.E. = .16$). In total, eight topics including pornography use were included in the Topic Avoidance Questionnaire for use in Study 3b.

Study 3b Methods

Participants

Participants were recruited from Amazon's Mechanical Turk to participate in a study on communication in relationships. Potential participants were informed that they would be asked to

complete a series of questions about different aspects of their relationship and sexuality. In order to participate, participants were required to be in a long-term, committed relationship. There were 209 participants who initially participated in the study. However, 15 participants were excluded because they did not meet eligibility criteria (i.e., were single). Furthermore, 3 participants were excluded because they answered two or more validity questions incorrectly (e.g., “Please select 7 for this question”). The final sample included 191 participants. In our final sample, participants were, on average 35.03 years of age ($SD = 10.56$). Approximately half of the participants were female (53.2%) and most participants were Caucasian (80.0%). Participants were with their partner for an average of 8.91 years ($SD = 29.80$). The length of the relationships ranged from 1 month to 44 years. Participants were educated 15.53 years on average ($SD = 2.84$) and had an average combined income with their partner of \$69,635.34 ($SD = \$76,106.54$). Furthermore, 48.7% of participants were married and 52.3% were cohabitating.

Measures

Background questionnaire. A background questionnaire was used to measure various demographic variables, such as age, education level, as well as number of children. The background questionnaire also measured different aspects of their relationship history, such as their relationship status and length of their current relationship.

Topic avoidance questionnaire. Participants were presented with 8 different topics that couples frequently avoid discussing that are similar in breadth (see results from Study 3a). For each topic, participants were asked to indicate along a 7-point Likert-type scale the extent they would purposefully refrain from discussing the topic with their current partner. This scale ranged from 1 (*I would never purposefully refrain from discussing*) to 7 (*I would always purposefully refrain from discussing*). Additionally, participants were asked to indicate along a 7-point Likert-

type scale how difficult it would be to discuss the topic with their current partner. This scale ranged from 1 (*not at all difficult*) to 7 (*very difficult*). An overall topic avoidance score for each topic was obtained by summing scores for both items related to the same topic. The Topic Avoidance Questionnaire, created by summing all 16 items of the questionnaire, demonstrated good reliability in the present study ($\alpha = .91$).

Overall quality of communication. As in Study 2, quality of overall relationship communication was measured using the Dyadic Communication Scale (DCS; Catania, 1986). See earlier description of this measure. In the current study, the DCS also demonstrated high reliability ($\alpha = .87$).

Relationship satisfaction. As in Studies 1 and 2, overall relationship satisfaction was measured using the Quality of Marriage Index (QMI; Norton, 1983). See earlier description of this measure. In the current study, the QMI also demonstrated high reliability ($\alpha = .94$).

Sexual satisfaction. As in Studies 1 and 2, overall sexual satisfaction was measured using the Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1995). See earlier description of this measure. In the current study, the GMSEX also demonstrated high reliability ($\alpha = .96$).

Pornography use. We used the same measure of pornography use as in studies 1 and 2. See earlier description of this measure. In the current study, the measure of pornography use also demonstrated high reliability ($\alpha = .93$).

Perceived frequency of partner pornography use. We used the same measure of partner pornography use as in studies 1 and 2. See earlier description of this measure. In the current study, the measure of partner pornography use also demonstrated high reliability ($\alpha = .93$).

Procedure

The current study was approved by a university ethics board. Participants answered an online questionnaire. They responded to the background measure first, then the remaining study measures, which were presented to participants in a randomized order. Participants were compensated \$0.50 into their Amazon account.

Study 3b Results

Descriptive statistics and bivariate correlations

See Table 4 for Means, standard deviations, and bivariate correlations. For both men and women, topic avoidance of pornography was strongly and positively correlated with overall topic avoidance. Pornography-related avoidance was moderately and negatively correlated with overall quality of communication and sexual satisfaction. Overall topic avoidance was also strongly and negatively related to overall quality of communication, moderately positively related to relationship satisfaction and sexual satisfaction.

Topic avoidance

The goal of study 3b was to examine whether pornography use is avoided more often than other topics that are frequently avoided by couples.

Women. On average, pornography use ($M = 4.64, S.E. = .35$) was avoided more often than four other topics: how much time to spend with family ($M = 4.07, S.E. = .27$), division of household chores ($M = 4.12, S.E. = .27$), how much money to save ($M = 4.46, S.E. = .26$), and alcohol use ($M = 4.16, S.E. = .30$; see Table 5). A repeated measures ANOVA revealed that mean topic avoidance differed statistically significantly between the various topics ($F(7, 700) = 3.82, p < 0.001$). Post hoc tests using the Bonferroni correction were used to test whether there were any mean differences in topic avoidance between pornography use and other commonly

avoided topics. Pornography use was not found to differ significantly in terms of avoidance from any of the other topics.

Men. On average, pornography use ($M = 6.44, S.E. = .42$) was avoided more often than every other topic. A repeated measures ANOVA revealed that mean topic avoidance differed statistically significantly between the various topics ($F(7, 595) = 6.78, p < 0.001$). Post hoc tests using the Bonferroni correction were used to test whether there were any mean differences in topic avoidance between pornography use and other commonly avoided topics. Pornography use ($M = 6.44, S.E. = .42$) was significantly avoided more often than how often to engage in sexual activity ($M = 4.92, S.E. = .32; p = .002$), how much time to spend with family ($M = 4.80, S.E. = .40; p = .014$), the division of household chores ($M = 4.48, S.E. = .29; p < .001$), how much money to save ($M = 5.04, S.E. = .33; p = .021$) and alcohol use ($M = 4.57, S.E. = .35; p = .002$). Pornography use was not significantly different in avoidance from how much money to spend ($M = 5.38, S.E. = .30; p = .371$), nor partner's tone of voice ($M = 5.64, S.E. = .36; p = 1.00$).

Pornography Topic Avoidance. Men ($M = 6.44, S.E. = .42; 95\% \text{ C.I. } [5.60-7.28]$) avoided discussing pornography more often than women ($M = 4.64, S.E. = .35; 95\% \text{ C.I. } [3.96-5.33]$), as seen in Figure 9. The confidence intervals for pornography topic avoidance do not overlap for men and women, suggesting that this difference is significant at the 95% confidence level.

Discussion

The goal of Study 3 was to examine whether people are avoiding discussing pornography use with their partner, compared to other topics that couples typically find difficult to discuss with their partner. For women, pornography use was not the most avoided topic, nor was it significantly avoided more or less than other topics. For men, pornography use was, on average,

the most avoided topic. Furthermore, men avoided discussing pornography more than discussing how often to engage in sexual activity, how much time to spend with family, the division of household chores, how much money to save and alcohol use. The topics used in Study 3 represent issues that have been demonstrated by research as being typically avoided by couples. Therefore, pornography use can still be considered a topic that is avoided and difficult to discuss for both men and women. These results are consistent with our hypotheses, as well as with the broader literature on sexual self-disclosure and topic avoidance (e.g., MacNeil & Byers, 2009; Theiss, 2011). However, results suggest that pornography is more difficult to discuss for men than it is for women. This difference could be due to the higher frequency of pornography use amongst men, compared to women (Albright, 2008).

Study 3b also found a significant positive correlation between pornography-related topic avoidance and overall topic avoidance, as well as a significant negative relationship between pornography-related topic avoidance and overall quality of communication. Therefore, as would be expected, the degree to which an individual avoids the topic of pornography use with his/her romantic partner is associated with a general pattern of avoiding discussing other difficult topics, as well as overall communication skill within the relationship. Furthermore, pornography use topic avoidance was negatively related to sexual and relationship satisfaction. This is consistent with past research that demonstrate negative consequences of topic avoidance (Hess & Confelt, 2012; Mark & Jozkowski, 2013).

Although we did find that the avoidance of discussing pornography use with a romantic partner was comparable to the avoidance of discussing other topics with a romantic partner, we did not examine what the specific motivation for avoiding discussing pornography use was (Anderson et al., 2011). For example, it may be that people avoid discussing pornography use

with their partner because they fear that their partner would leave them if they knew. It may also be that people are afraid of hurting their partner if they discuss their pornography use with their partner. Or, it could be that people believe that by discussing pornography use with their partner, they will reveal some type of character flaw to their partner. Future research should aim to look closer at the motivations behind avoiding discussing pornography use with a romantic partner.

Table 3. Descriptive statistics for topic breadth and mean breadth comparisons between pornography use and other topics.

Topic item	Mean	S.E.	Mean difference (S.E.)
1. Pornography use	3.65	.20	--
2. How much money to spend	3.58	.19	0.08 (.26)
3. Completing responsibilities on times	3.39	.17	0.26 (.25)
4. How often to engage in sexual activity	3.72	.19	-0.07 (.25)
5. Partner's tone of voice while communicating	3.63	.17	0.02 (.24)
6. How much time to spend with family	3.78	.17	-0.13 (.24)
7. Balance between work and personal life	4.18	.16	-0.53 (.23)
8. Paying bills on time	2.49	.18	1.16** (.25)
9. How much time to spend together	3.86	.18	-0.21 (.28)
10. Use of drugs	2.68	.19	0.97* (.23)
11. Division of household chores	3.78	.16	-0.13 (.26)
12. How much money to save	3.52	.18	0.13 (.26)
13. Style of communication	4.32	.17	-0.66 (.22)
14. How much time to spend with friends	3.86	.16	-0.21 (.27)
15. Use of alcohol	3.49	.17	0.16 (.18)

Note: Significance levels for mean differences were Bonferroni corrected. Bolded mean differences indicate that the difference is more than one SE from the mean for pornography use.

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

Table 4. Study 3 Descriptive Statistics and Bivariate correlations.

Variables	Mean	S.D.	A	1	2	3	4	5	6	7
1. Pornography topic avoidance	5.51	3.79	.89	--	.68***	-.37***	-.17 ^{ns}	-.42***	.17 ^{ns}	-.33*
2. Overall topic avoidance	38.45	17.06	.91	.49***	--	-.60***	-.48***	-.42***	.28*	.10 ^{ns}
3. Overall communication quality	38.47	7.82	.87	-.26**	-.57***	--	.69**	.34**	-.26*	-.34*
4. Relationship satisfaction	36.75	8.85	.94	-.15 ^{ns}	-.42***	.71***	--	.33**	-.25*	-.36*
5. Sexual Satisfaction	27.88	6.71	.96	-.21*	-.38***	.47***	.53***	--	-.23*	.11 ^{ns}
6. Pornography use	8.87	4.16	.93	.07 ^{ns}	.18 ^{ns}	-.15 ^{ns}	-.08 ^{ns}	-.001 ^{ns}	--	.41**
7. Partner's pornography use	8.24	3/96	.93	.22 ^{ns}	.21 ^{ns}	-.25*	-.18 ^{ns}	-.02 ^{ns}	.66***	--

Note: Correlations for men are above the diagonal and correlations for women are below the diagonal. n.s. = non-significant.*p < .05,

p < .01, *p < .001

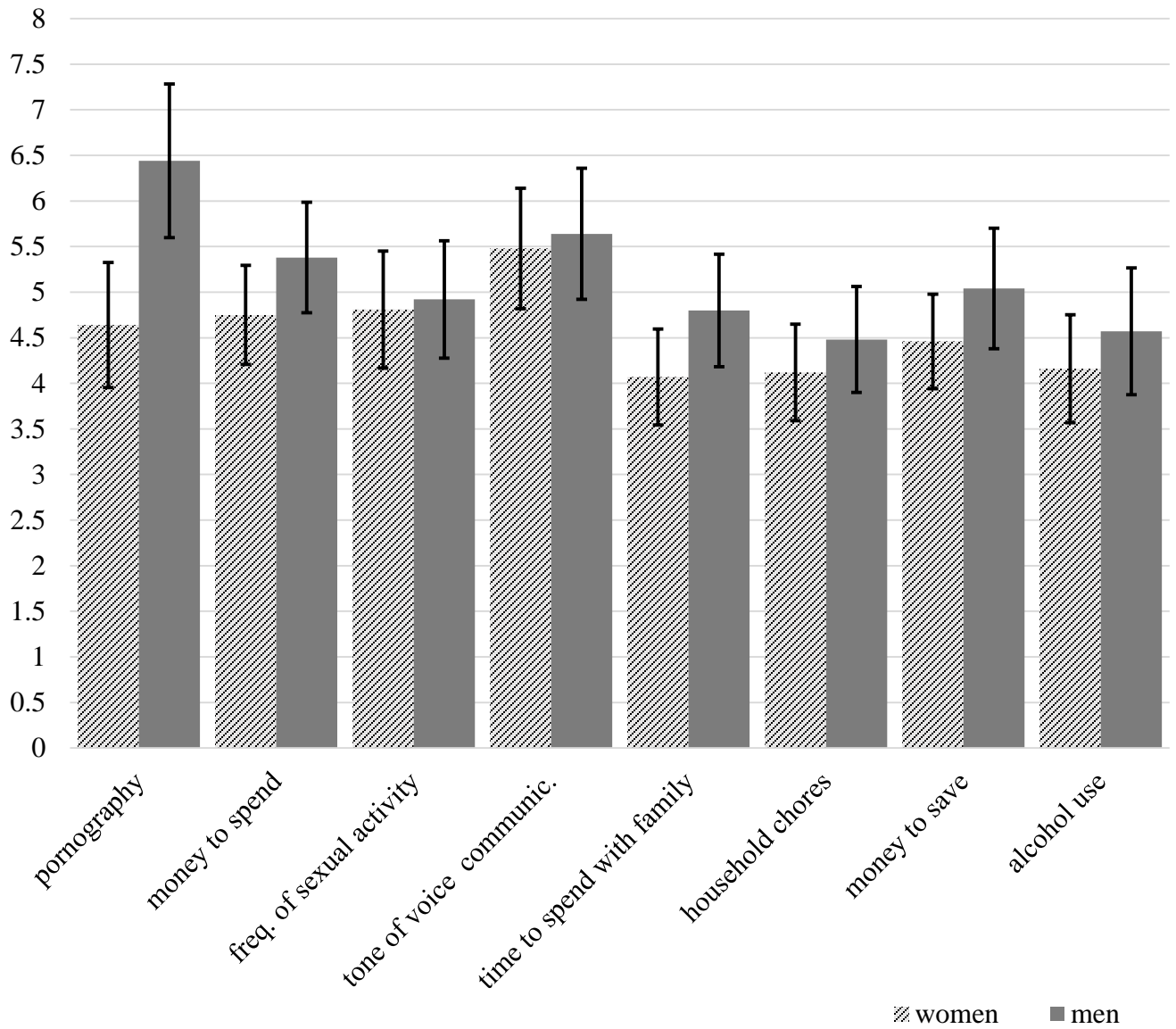
Table 5. Descriptive statistics for topic avoidance and mean avoidance comparisons between pornography use and other topics.

Topic item	Women			Men		
	Mean	S.E.	Mean difference (S.E.)	Mean	S.E.	Mean difference (S.E.)
1. Pornography use	4.64	.35	--	6.44	.42	--
2. How much money to spend	4.75	.27	-0.11 (.42)	5.38	.30	1.06 (.42)
3. How often to engage in sexual activity	4.81	.32	-0.17 (.38)	4.92	.32	1.52 (.37)**
4. Partner's tone of voice while communicating	5.48	.33	-0.83 (.37)	5.64	.36	0.80 (.40)
5. How much time to spend with family	4.07	.27	0.57 (.41)	4.80	.31	1.64 (.45)*
6. Division of household chores	4.12	.27	0.53 (.38)	4.48	.29	1.97 (.42)***
7. How much money to save	4.46	.26	0.19 (.41)	5.04	.33	1.41 (.40)*
8. Use of alcohol	4.16	.30	0.49 (.44)	4.57	.35	1.87 (.44)**

Note: Significance levels for mean differences were Bonferroni corrected. Significant differences are bolded.

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

Figure 9. Study 3 Topic Avoidance by Gender



Note: Error bars represent 95% confidence intervals.

General Discussion

Pornography use and the risks/benefits associated with its use has been a contentious topic of discussion in the scientific community as well as the public sphere (Montgomery-Graham et al., 2015). The literature on pornography use and relationships is no different, with many scholars citing the harms associated with pornography (e.g., Resch and Alderson, 2014), and others citing the benefits associated with pornography use (e.g., Poulsen et al., 2013; Staley & Prause, 2013). However, it is difficult to systematically assess results from these findings as the studies are characterized by methodological flaws, such as using small sample as well as the recruitment of biased samples (e.g., Stewart & Szymanski, 2012).

Because of limitations of past research, it is difficult to ascertain whether there is an association between pornography use and relationship outcomes. Therefore, in Study 1, we conducted a study to examine the relationship between pornography use and relationship outcomes that was designed to address some of the limitations of past work. Our results showed that, compared to women who estimated that their partners used pornography less frequently, those who estimated that their partners used pornography more frequently had lower relationship quality. We did not find an association between women's estimates of their partner's use and women's sexual satisfaction, nor an association between their own use and relationship quality or sexual satisfaction. For men, we found that their partner's pornography use was positively related to their sexual satisfaction, such that men who estimated that their partners use pornography more frequently were more sexually satisfied with their relationship, as compared to men who estimated that their partners used pornography less frequently. We did not find an association between men's estimates of their partners' pornography use and men's relationship quality. Furthermore, men's own pornography use was negatively associated with relationship

quality and sexual satisfaction. Thus, the results of our first study suggested that there was no clear answer to the questions about whether an individual's own pornography use or their estimate of their partner's pornography was associated to relational outcomes. Rather, the findings varied by gender and also by which relational outcome was being investigated. Furthermore, when the pathways were significant, the effect sizes tended to be fairly small.

We had two overarching goals for Study 2. The first goal was to replicate the findings from Study 1 in an independent sample. We tested the same model as we did in Study 1 and our findings largely replicated. All pathways that were significant in Study 1 were also significant in Study 2. Furthermore, across both studies, the significant pathways were comparable in size and magnitude.

The second goal of Study 2 was to examine if any of the observed associations remained significant after accounting for the effect of pornography-related communication. Related to this, we also wanted to examine whether there were significant associations between pornography-related communication and relationship outcomes, after controlling for the overall quality of communication between partners. For women, we found that their estimates of their partner's pornography use was no longer related to relationship quality after accounting for the new variables. Instead, we found that pornography-related communication and overall relationship communication were positively related to women's relationship quality and to their sexual satisfaction. After accounting for communication variables, we found that men's estimates of their partner's pornography use was no longer associated with men's sexual satisfaction. Furthermore, men's own pornography use was also no longer associated with sexual satisfaction, but it was negatively associated with relationship quality. However, the association between men's self-reported pornography use and their relationship quality became weaker after

accounting for communication variables. Thus, although there is a weak but significant association between men's pornography use and their relationship quality, there are other variables (such as quality of communication) that account for more variance in predicting relationship quality.

The results from Study 2 suggested that the two aspects of communication we examined in our work (overall communication quality and the quality of pornography-related communication) were stronger predictors of relationship outcomes than pornography use. With the exception of one effect, all pathways became nonsignificant. There are some important implications of these findings. First, the results suggest that investigations of pornography use and its association with relationship outcomes needs to be contextualized by taking into account relationship processes that may attenuate the effect of factors like pornography use. Our data add to the broader literature on interpersonal factors in sexual satisfaction by demonstrating that the quality of interpersonal communication is a critical variable to consider in predicting relationship quality and sexual satisfaction. Our findings also supported a domain-specific effect for communication. Even after controlling for overall quality of communication, there was a significant effect of pornography related communication and relationship quality (for women) and sexual satisfaction (for both men and women). This was a fairly stringent test of the effects of pornography-related communication and shows that romantic partners' emotional experiences when they discuss pornography use in the relationship (e.g., does the person feel respected and heard during the discussion?) is a more important predictor of relationship quality and sexual satisfaction, as compared to use of pornography in the relationship.

It is interesting to note that in Study 1, men's perceptions of their partner's pornography use was negatively related to commitment to their partner, but positively related to sexual

satisfaction. This may seem counter-intuitive, as sexual satisfaction with one's partner is positively associated with commitment to one's partner (Sprecher, 2002). However, the positive relationship between estimates of partner's pornography use and sexual satisfaction did not hold after controlling for quality of pornography-related communication and overall quality of relationship communication. Therefore, we can conclude that partner's pornography use is not significantly associated with sexual satisfaction on its own. Instead, it may be how couples communicate pornography use in their relationship. By communicating directly with each other, each partner may be getting a more accurate estimate of how frequently their partner uses pornography. Furthermore, couples may also be discussing how pornography will be used in their relationship, which could increase sexual satisfaction by adding excitement to their sexual activity. The weak association between men's estimates of their partner's pornography use and commitment was still negative after accounting for communication. In this case, it may be that a subset of men are more distrustful of their partners when they estimate that their partner frequently uses pornography, and when partners do discuss pornography use, these men may not believe their partners are being honest. It would be fruitful to explore whether distrust mediates the relationship between estimates of their partner's pornography use and commitment, as well as the context surrounding the distrust. For example, perhaps men are distrustful when their partners use pornography on their own or in secrecy. Having demonstrated that communication variables are far more strongly associated with relationship quality and sexual satisfaction than pornography use, we next examined to what degree the topic of pornography use might be a topic that couples tend to avoid discussing with each other. The literature on topic avoidance suggests that romantic partners tend to avoid discussing sexual differences and conflicts more so than nonsexual conflicts and differences. Given the potential shame and embarrassment involved

in discussing pornography use, this may be a particularly avoided topic. For men, we found that pornography use was one of the most avoided topics, on average. It was also significantly avoided more often than most of the other topics. We did not find that pornography use was avoided more often than the other topics for women. For both men and women, pornography topic avoidance was associated with lower relationship and sexual satisfaction.

Now that results from each study have been discussed, I will focus on the broader patterns of findings across studies in terms of gender differences, communication and topic avoidance, as well as limitations and future directions.

Gender differences

Overall, we found several gender differences in our pattern of results, the specifics of which have been discussed above. These gender differences highlight the importance of testing models separately by gender, as we have done, or for examining gender as a moderating variable in the analyses. Researchers should be wary of combining results across genders as the data from past studies (e.g., Poulsen et al., 2013; Willoughby et al., 2016) as well as our own work suggests that the association between pornography use and relationship variables tends to vary by gender. In sum, in order to gain more accurate estimates of effect sizes for research on pornography use and relationship outcomes, it is important to test for gender as a moderating variable.

These gender differences also suggest ways in which men and women differ according to theoretical viewpoints. In terms of the interpersonal model for sexual self-disclosure, this may indicate that only the instrumental pathway is activated for men. That is, for men we found that better quality of pornography-related communication (i.e., sexual self-disclosure of pornography use) was related to sexual satisfaction, and not relationship satisfaction. Whereas for women, it is possible that both the instrumental and expressive pathways are activated, as both relationship

quality and sexual satisfaction are related to the quality of pornography-related communication, over and above overall quality of relationship communication (i.e., non-sexual self-disclosure).

Communication and Topic Avoidance

Between studies 2 and 3, we gain an important understanding of the importance of pornography-related communication. In Study 2, we observe how the quality of pornography-related communication is positively related to sexual satisfaction for both genders, and for women, how it is positively associated with relationship quality. The effect sizes for these relationships are larger than the effects of both individual and partner's pornography use with relationship outcome variables, when they are observed. In Study 3, we gain a better understanding of the degree to which individuals avoid discussing pornography use with their partners. Results between Studies 2 and 3 are consistent, such that better quality pornography-related communication is related to better sexual satisfaction, and avoiding discussing pornography with one's partner is related to lower sexual satisfaction. However, both studies also examine different constructs. Study 2 examines the quality of pornography-related discussions, whereas Study 3 examines the frequency of pornography-related discussions. Therefore, across both studies, we see that both quality and frequency of pornography discussions are similarly related to sexual satisfaction.

Limitations and future directions

Although our study improves upon the limitations of previous research, there are several limitations to consider. First, our study is descriptive and correlational in nature. We have not tested any mechanisms that may explain any observed effects. However, such descriptive work is needed as a first step to test the main effects before more complex models, such as those testing

mechanisms, are developed and tested. The correlational nature of this study has been emphasized throughout the paper, but it bears repeating again, in part because the findings on this topic tend to be misrepresented and there can be vested interests in interpreting the findings in misleading ways. Once we accounted for the role of communication variables, there was a weak but significant negative association between men's self-reported pornography use and their relationship quality. The current data do not allow us to comment on the directionality of the findings; it is very plausible that, if a causal relationship exists, it is from relationship quality to pornography use. Similarly, the communication findings have to be interpreted cautiously. Individuals who are more relationally and sexually satisfied may be more likely to communicate more openly and positively about pornography and related topics.

Our data help to inform which future questions need to be explored. Given that there was no significant association between pornography use and outcomes for women, after controlling for relationship quality, it would not be fruitful to investigate if there is a causal association between these variables. The association for men's use and their relationship quality, although weak, was significant. Thus, a longitudinal study that investigates whether pornography use may precede declines in relationship quality, over time, may be warranted. However, such a study would only establish directionality and not a causal association. Based on the findings from the current study, it would be important to include communication variables (general communication as well as more domain specific communication) in such an analysis.

Another important limitation of our studies is that we gathered data from individuals and not from both members of the dyad. As such, we were only able to gather participants' perceptions of their partner's pornography use, rather than how often their partners *actually* use pornography. Although correlated, perceived partner's pornography use is a separate construct

from partner's actual pornography use. Perceptions of partner's pornography use would be affected by factors such as how much they project their own beliefs about pornography use, how well they know their partner, and how often they have discussed pornography use with their partner. Some individuals may be more confident in their estimates than others. It would be interesting if future studies examine whether participants' confidence in their reports of perceived partner's pornography use are more highly correlated with relationship outcomes than a partner's actual pornography use.

In our study, we did not examine the role of masturbation when examining the relationships between pornography use and relationship outcomes. Although masturbation does occur in the context of pornography use (more frequently for men than women), some individuals report partnered sexual activity while using pornography (Hald, 2008). Furthermore, men are likely to use pornography around 53% of the time when they masturbate, whereas women are likely to use pornography around 16% of the time when they masturbate (Hald, 2008). Thus, although pornography use and masturbation do co-occur, they both also occur alone. Interestingly, men's motivations for primarily using pornography and primarily masturbating appear to be slightly different. For example, men frequently report masturbating when they are bored, and typically do not see masturbation as a sexual activity (Carvalho, Traeen, & Stulhofer, 2015). Some evidence suggests that women masturbate for sexual pleasure, to learn about their bodies, or as a replacement for a partner (Bowman, 2014). Motivations for pornography use are more varied and individuals report using pornography in order to be closer to one's partner, to arouse oneself, for sexual fantasies, or out of boredom (Paul & Shim, 2008). Research shows that the motivations to view pornography use were similar for both men and women (Paul & Shim, 2008). Overall, individuals use pornography without masturbation and for

different reasons than masturbation. It is therefore likely that they would be associated with relationship outcomes differently. Future studies should address the overlap of pornography use and masturbation and their differential associations with relationship outcomes.

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Appendix A

Quality of Marriage Index

(Norton, 1983)

This questionnaire asks about your relationship with your partner. For each statement, please think of a scale from 1 to 7, where 1 means you very strongly disagree, 4 means you neither agree nor disagree, and 7 means you very strongly agree. Please choose the number from 1 to 7 that reflects how much you agree or disagree.

1	2	3	4	5	6	7
Very strongly disagree			Neither agree nor disagree			Very strongly agree

1. We have a good relationship.
2. My relationship with my partner is very stable.
3. Our relationship is strong.
4. My relationship with my partner makes me happy.
5. I really feel like part of a team with my partner.

Now, please think about how happy you are with your relationship. Please think of a 10 point scale, where 1 means very unhappy, 5 means happy, and 10 means perfectly happy.

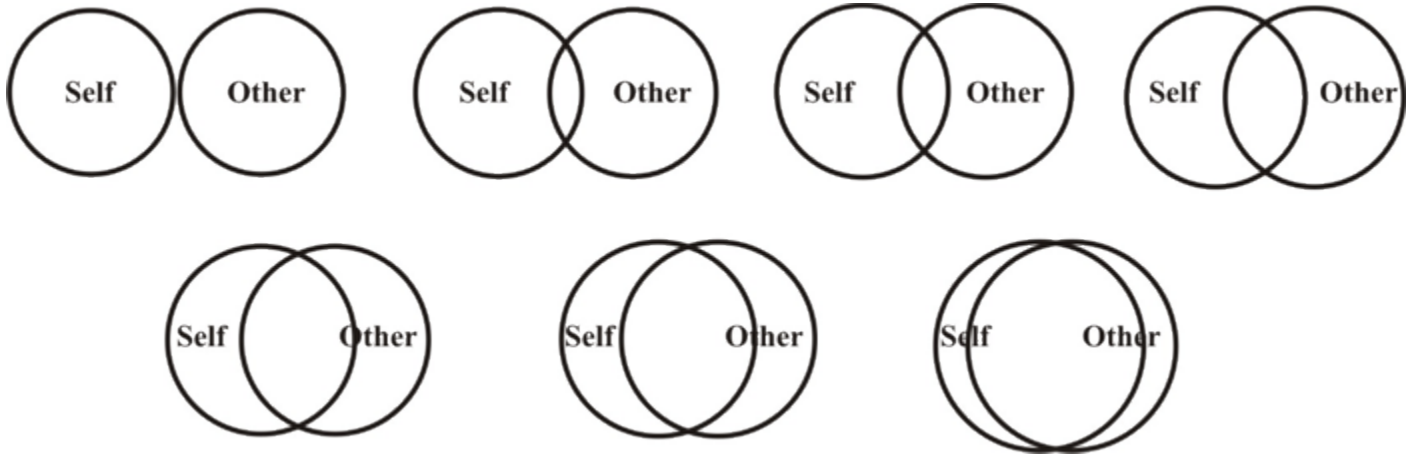
1	2	3	4	5	6	7	8	9	10
Very unhappy				Happy					Perfectly happy

Appendix B

The Inclusion of Other in the Self scale

(Aron, Aron, & Smollan, 1992)

Please select the picture that best describes your current relationship with your romantic partner.



Appendix C

Commitment Level Subscale of the Investment Model Scale

(Rusbult, Martz & Agnew, 1998)

Please indicate the degree to which you agree with each of the following statements regarding your current relationship with your partner.

0	1	2	3	4	5	6	7	8
Do Not Agree at All				Agree Somewhat				Agree Completely

1. I want our relationship to last for a very long time.
2. I am committed to maintaining my relationships with my partner.
3. I would not feel very upset if our relationship were to end in the near future.
4. It is likely that I will date someone other than my partner within the next year.
5. I feel very attached to our relationship – very strongly linked to my partner.
6. I want our relationship to last forever.
7. I am oriented toward the long term future of my relationship (for example, I imagine being with my partner several years from now).

Appendix D

Global Measure of Sexual Satisfaction

(Lawrance & Byers, 1995)

In general, how would you describe your current sex life? By sex life we mean your sex life as a whole (i.e., masturbation, other sexual activities with your partner, etc.). For each pair of words below, select the number which best describes your current sex life as a whole.

1. Good/Bad

Very Good						Very Bad
7	6	5	4	3	2	1

2. Pleasant/Unpleasant

Very Pleasant						Very Unpleasant
7	6	5	4	3	2	1

3. Positive/Negative

Very Positive						Very Negative
7	6	5	4	3	2	1

4. Satisfying/Unsatisfying

Very Satisfying						Very Unsatisfying
7	6	5	4	3	2	1

5. Valuable/Worthless

Very Valuable						Very Worthless
7	6	5	4	3	2	1

Appendix E

Pornography Use Questionnaire

1. How much pornography do you currently consume?

1	2	3	4	5	6	7
None at all						A great deal

2. Which of the following categories best describes how often you have used pornography in the last 12 months:

1	2	3	4	5	6
None	Approximately once a year	A few days a year	A few days a month	A few days a week	Almost everyday

3. Which of the following categories best describes how often you have used pornography in the last 30 days:

1	2	3	4	5	6	7
Never	Once	About weekly	A few times a week	Daily	A few times a day	Several times a day

Appendix F

Partner Pornography Use Questionnaire

1. How much pornography does your partner currently consume?

1	2	3	4	5	6	7	Not Sure
None at all						A great deal	

2. Which of the following categories best describes how often your partner has used pornography in the last 12 months:

1	2	3	4	5	6	Not Sure
None	Approximately once a year	A few days a year	A few days a month	A few days a week	Almost everyday	

3. Which of the following categories best describes how often your partner has used pornography in the last 30 days:

1	2	3	4	5	6	7	Not Sure
Never	Once	About weekly	A few times a week	Daily	A few times a day	Several times a day	

Appendix G

Modified Version of the Post-Discussion Questionnaire

(Heavey, Layne, & Christensen, 1993)

When you and your partner have talked about pornography use in your relationship, what has the discussion been like:

1	2	3	4	5	6	7
Not at all						Very much

6. My partner treated me with respect.
7. I felt understood by my partner.
8. I felt my partner was willing to compromise.
9. How positive was the emotional tone of the discussion?
10. How negative was the emotional tone of the discussion?

Appendix H
Dyadic Communication Scale
(DCS; Catania, 1986)

The following are statements that different people have made about communicating with their primary partner. Please rate how much you agree or disagree with each statement using the following scale:

1	2	3	4	5	6
Disagree Strongly					Agree Strongly

1. My partner rarely responds when I want to talk.
2. My partner and I never seem to resolve our disagreements.
3. Whenever my partner and I talk, I feel like she or he is lecturing me.
4. My partner and I have never had a heart-to-heart talk together.
5. My partner has no difficulty in talking to me about his or her feelings and desires.
6. Even when angry with me, my partner is able to appreciate my views.
7. Talking together is a satisfying experience for both of us.
8. My partner and I can usually talk calmly to one another.
9. I seldom feel embarrassed when talking with my partner.

Appendix I
Sexual Opinion Survey – Short Form
(Fisher et al., 1988)

Please respond to each item as honestly as you can. There are no right or wrong answers.

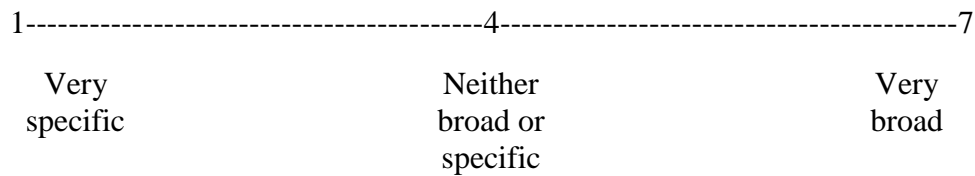
1	2	3	4	5	6	7
Strongly Agree						Strongly Disagree

- 11. Masturbation can be an exciting experience.
- 12. Almost all sexually explicit material is nauseating.
- 13. It would be emotionally upsetting to me to see someone exposing themselves publicly.
- 14. The thought of engaging in unusual sex practices is highly arousing.
- 15. The thought of having long-term sexual relations with more than one sex partner is not disgusting to me.

Appendix J

Topic Breadth Questionnaire

Couples tend to disagree about a number of different topics in their relationship. Some topics tend to be very specific, such as reminding your partner to put their toothbrush in the correct spot. Other topics tend to be broad, such as political views. For each topic listed below, please rate the degree to which you view it as specific versus broad, using a scale from 1 (very specific) to 7 (very broad).



1. How much money to spend
2. Completing responsibilities on time
3. How often to engage sexual activity
4. Partner's tone of voice while communicating
5. How much time to spend with family
6. Pornography use
7. Balance between work and personal life
8. Paying bills on time
9. How much time to spend together
10. Use of drugs
11. Division of household chores
12. How much money to save
13. Style of communication
14. How much time to spend with friends
15. Use of alcohol

Appendix K

Topic Avoidance Questionnaire

Below are different topics that couples discuss with each other. For each topic, please indicate on a scale from 1 to 7 (a) to what extent you would purposefully refrain from discussing that topic with your current partner and (b) how difficult it would be to discuss that topic with your current partner.

1. How much money to spend

a) To what extent you would purposefully refrain from discussing *how much money to spend* with your current partner

1-----4-----7

I would <u>never</u> purposefully refrain from discussing	I would <u>sometimes</u> purposefully refrain from discussing	I would <u>always</u> purposefully refrain from discussing
---	---	--

b) How difficult it would be to discuss *how much money to spend* with your current partner

1-----4-----7

Not at all difficult	Somewhat difficult	Very difficult
-------------------------	-----------------------	-------------------

2. How much money to save

a) To what extent you would purposefully refrain from discussing *how much money to save* with your current partner

1-----4-----7

I would <u>never</u> purposefully refrain from discussing	I would <u>sometimes</u> purposefully refrain from discussing	I would <u>always</u> purposefully refrain from discussing
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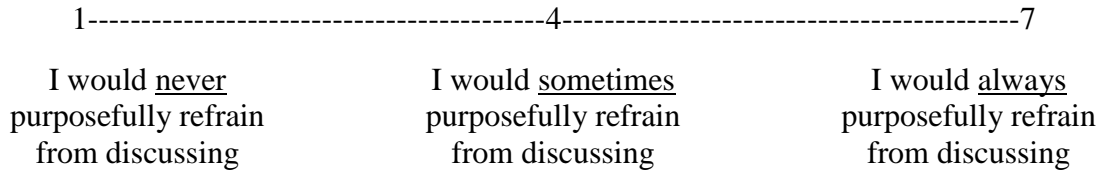
b) How difficult it would be to discuss *how much money to save* with your current partner

1-----4-----7

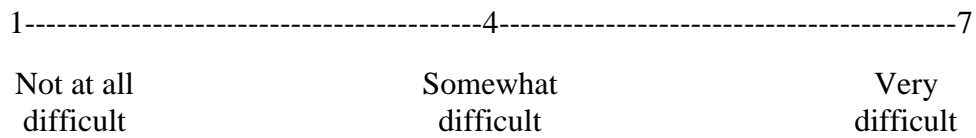
Not at all difficult	Somewhat difficult	Very difficult
-------------------------	-----------------------	-------------------

3. How often to engage sexual activity

a) To what extent you would purposefully refrain from discussing *how often to engage sexual activity* with your current partner

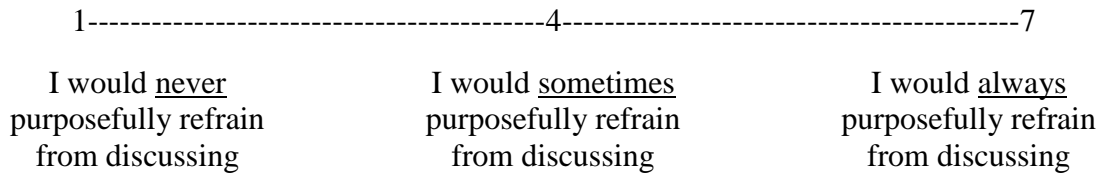


b) How difficult it would be to discuss *how often to engage sexual activity* with your current partner

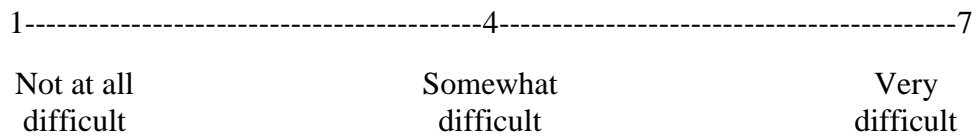


4. How much time to spend with family

a) To what extent you would purposefully refrain from discussing *how much time to spend with family* with your current partner

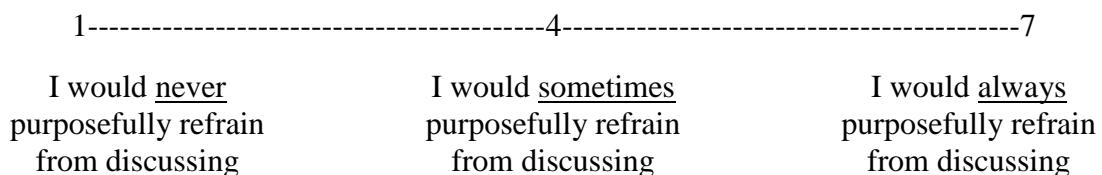


b) How difficult it would be to discuss *how much time to spend with family* with your current partner



5. Partner's tone of voice while communicating

a) To what extent you would purposefully refrain from discussing *partner's tone of voice while communicating* with your current partner



b) How difficult it would be to discuss *partner's tone of voice while communicating* with your current partner

1-----4-----7

Not at all difficult	Somewhat difficult	Very difficult
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6. Use of alcohol

a) To what extent you would purposefully refrain from discussing *use of alcohol* with your current partner

1-----4-----7

I would <u>never</u> purposefully refrain from discussing	I would <u>sometimes</u> purposefully refrain from discussing	I would <u>always</u> purposefully refrain from discussing
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b) How difficult it would be to discuss *use of alcohol* with your current partner

1-----4-----7

Not at all difficult	Somewhat difficult	Very difficult
-------------------------	-----------------------	-------------------

7. Pornography use

a) To what extent you would purposefully refrain from discussing *pornography use* with your current partner

1-----4-----7

I would <u>never</u> purposefully refrain from discussing	I would <u>sometimes</u> purposefully refrain from discussing	I would <u>always</u> purposefully refrain from discussing
---	---	--

b) How difficult it would be to discuss *pornography use* with your current partner

1-----4-----7

Not at all difficult	Somewhat difficult	Very difficult
-------------------------	-----------------------	-------------------

8. Division of household chores

a) To what extent you would purposefully refrain from discussing *division of household chores* with your current partner

1-----4-----7

I would <u>never</u> purposefully refrain from discussing	I would <u>sometimes</u> purposefully refrain from discussing	I would <u>always</u> purposefully refrain from discussing
---	---	--

b) How difficult it would be to discuss *division of household chores* with your current partner

1-----4-----7

Not at all difficult	Somewhat difficult	Very difficult
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