THE MODERATING ROLE OF RELIGION IN THE RELATIONSHIP BETWEEN

ATTITUDES TOWARD PORNOGRAPHY AND

MENTAL HEALTH OUTCOMES

A DISSERTATION IN

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DOCTOR OF PHILOSOPHY

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ABSTRACT

Using the framework of Cognitive Dissonance Theory (CDT; Festinger, 1957), the current study examined whether religiosity buffered or enhanced the effects of attitudes toward pornography and the psychological outcomes of depression, anxiety, and life satisfaction among a sample of adult men. Participant responses were obtained from Amazon's Mechanical Turk website. Previous studies have rarely accounted for attitudes toward pornography or social desirability, which is surprising given that pornography has, and continues to remain highly stigmatized (Romito & Beltramini, 2011; Zillmann & Bryant, 1986). Consequently, social desirability was assessed as a covariate and attitudes toward pornography were a primary variable of interest in relation to pornography consumption, religiosity, and mental health outcomes (e.g., depression, anxiety, and life satisfaction). Methodology utilized primarily included analyses for correlations, regression, and moderation (e.g., PROCESS). Main findings indicated that religiosity did not moderate the relationship between negative pornography attitudes (NPA) and depression or anxiety, but

did significantly moderate the relationship between negative attitudes toward pornography and life satisfaction. In other words, at lower levels of religiosity the negative relationship between NPA and life satisfaction was enhanced. This moderation means that for those with low religiosity, life satisfaction dramatically declined as attitudes against pornography increased. Conversely, at higher values of religiosity, the direction of the relationship reversed and was no longer significant. Implications of results are discussed and are intended to help educators, therapists, and other helping professionals effectively work with individuals who may be struggling with the effects of pornography use.

Keywords: attitudes, pornography, religiosity, mental health outcomes, social desirability

APPROVAL PAGE

The faculty listed below, appointed by the Dean of the School of Education, have examined a dissertation titled "The Moderating Role of Religion in the Relationship between Attitudes Toward Pornography and Mental Health Outcomes," presented by James Parker, candidate for the Doctor of Philosophy degree, and certify that in their opinion it is worthy of acceptance.

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CONTENTS

ILLUSTRATIONS

TABLES

CHAPTER 1

INTRODUCTION

Sexually-related content (content that depicts nudity; sex and sex crimes) has had a relatively pervasive presence in America's entertainment industry, social media, and news sources for decades (Bleakley et al., 2011). Since the internet's advent, however, sexually explicit media has burgeoned significantly, as shown by the expansions of the adult entertainment industry increasing by over 1300% from 1970 to 2006 (Carroll et al., 2008; Egan, 2000; Rosser et al., 2012). As of 2006 (Ropelato), this translates into more than 4.2 million sexually explicit websites (12% of total websites on the internet) and an estimated 28,000 individuals consuming sexually explicit material every second. Some estimates suggest that 50% of all internet traffic is related to sex (McNair, 2002).

Overall, it can be surmised that the ubiquitous nature of sexual content in today's society has made it more accessible as a whole. Pornography, (considered both printed and visual content intended to stimulate sexual desire or excitement [Frutos & Merrill, 2017]), has become particularly accessible such that the majority of men report regular viewing of pornography, as well as a growing number of women (Carroll et al., 2008; Hald et al., 2014; Regnerus et al., 2016) and heterosexual couples (Olmstead et al., 2013). Some researchers suggest that online pornography has, in large part, become a normative aspect of technology users (Carroll et al., 2008) that provides many individuals with an outlet to learn about sex (Miller et al., 2018). For example, in contrast to learning about sex through their parents or formal sex education programs, a large proportion of college men have reported that their first exposure to sex was through media outlets (e.g., movies, television, and magazines) instead of sex education (Allen & Lavender-Stott, 2015).

Although accessing sexually-related content may be relatively easy compared to 30 years ago, the topic of sex and pornography, in particular, continues to remain stigmatized, and even aberrant to some (Romito & Beltramini, 2011; Zillmann & Bryant, 1986). For example, Lang and Rosenberg (2017) found that members of the lay public (women in particular) were less willing to even affiliate with someone described as having an addiction to pornography. In addition, Baetz and Carson (1999) attempted to use a local pornography company as a case study for a business studies course, but their institution raised concerns about legitimizing the company and promoting pornography use. Despite its global presence and increased consumption (Voss, 2012), pornography often remains a deviant and taboo topic of conversation (Romito & Beltramini, 2011; Zillmann & Bryant, 1986), and its use is often deemed inappropriate (Rasmussen et al., 2018).

At the same time, pornography use has become relatively commonplace in contemporary society due to its ease of access (D'Orlando, 2011); yet studies have also found that people tend to experience a variety of unintended and negative consequences linked to their consumption (e.g., Bradley et al., 2016; Tseferidi et al., 2017; Willoughby et al., 2018). However, most of these studies have focused on pornography as an addiction (Williams, 2017) or on the negative effects of use on relationships (e.g., Bridges & Morokoff, 2011; Whitfield et al., 2018). Despite the stigma of pornography and the negative consequences often experienced by consumers, the continued use of pornography eludes to some form of dissonance experienced by its users. In other words, for some individuals, viewing pornography may lead to unwanted consequences, yet they continue to engage in the behavior. From a cognitive dissonance standpoint, when a person behaves in ways that are inconsistent with their beliefs and/or morals, they are likely to experience negative effects or

2

psychological discomfort. As the viewing of pornography is often stigmatized and tied to beliefs surrounding deviance and morality (Willoughby et al., 2018), studies have found that religiosity (as well as the lack thereof) may significantly influence a person's feelings of incongruence regarding their behaviors and values (Doran & Price, 2014; Patterson & Price, 2012; Perry, 2016; Perry & Whitehead, 2018). As a result, the role of religiosity (defined by involvement in congregational life and/or the prominence of everyday thoughts, feelings, and behaviors related to religious/spiritual beliefs [Exline et al., 2000; King & Hunt, 1975]) may exacerbate such negative effects due to the stigma attached to pornography use (Griffin et al., 2016; Grubbs et al., 2017; Wilt et al., 2016).

Therefore, the purpose of this study was to use Cognitive Dissonance Theory (Festinger, 1957) as a general framework to explore the connections between attitudes toward pornography, pornography use, and psychological outcomes (i.e., anxiety, depression, and life satisfaction) among a sample of adult men. In addition, given the link between religiosity and pornography use (e.g., Grubbs et al., 2010; Patterson & Price, 2012; Short et al., 2015), I examined the moderating effects of religiosity in the relationship between attitudes towards pornography and psychological outcomes of depression, anxiety, and life satisfaction. Although pornography use among women may be increasing (Carroll et al., 2008; Hald et al., 2014; Regnerus et al., 2016), studies suggest that there is a sizeable gender gap in pornography consumption, such that men are more likely to use pornography compared to women (Albright, 2008; Buzzell, 2005; Carroll et al., 2008; Cooper et al., 2004; Emmers-Sommer et al., 2013; McKee, 2007; Stack et al., 2004) and are more likely to experience negative effects as a result of use (e.g., Bridges & Morokoff, 2011; Whitfield et al., 2018; Maddox et al., 2011; Muusses et al., 2014). Results of the current study are

3

intended to provide a more comprehensive understanding of the relationship between attitudes toward pornography and psychological outcomes associated with use in order to help educators, therapists, and other family professionals in working with individuals who may be struggling with the effects of their use.

History of Pornography Stigma in the United States

To fully understand the degree of cultural stigma associated with pornography in the United States, it is important to briefly discuss some of the historical controversies linked to pornography as well as the role of American government in censorship and anti-pornography movements. By their very nature, court decisions and government-driven commissions implied to the public that the flow and consumption of pornographic materials had potentially deleterious effects such that our national leaders felt were severe enough to warrant regulation, thus contributing to and enhancing the stigma of pornography.

First, some of America's prominent historical leaders (i.e., founding fathers) can be linked to shaping society's attitudes toward sex and more specifically, what has been considered obscene and immoral (Rasmussen et al., 2018; Romito & Beltramini, 2011; Zillmann & Bryant, 1986). In fact, John Adams (who helped draft the Constitution and later became the second U.S. president) stated that the Constitution was created for only a moral and religious people, and that the Constitution was wholly inadequate to govern any other type of people–signifying that any and all laws in our country are to be based on moral considerations (see U.S. Drug Enforcement Administration, 2010). Not surprisingly, sexually-related content continued to be discussed within the context of censoring obscene material. For example, the court case of *Miller v. California* (1973) centered on whether or not individuals could be convicted of obscenity charges if they possessed sexually explicit

materials (e.g., pornographic movies, magazines, and books). In legal terms, obscenity refers to a narrow category of pornography–one that violates contemporary standards of a given community and has no significant artistic, literary, scientific, or political value (Hudson, 2009). Ultimately, possession of sexually explicit materials was not deemed legally "obscene." The Supreme Court made a big step towards further defining obscenity in the Miller case (Gould, 2010), which resulted in the creation of the Miller test–which essentially determines whether or not pornographic materials can be labeled as obscene. The Miller test is now used as the standard for legal cases related to obscenity in the United States (Hudson, 2009).

Second, the U.S. government has formed several commissions to address the negative consequences believed to result from pornography use. The formation of and purpose behind these commissions suggest that the government has inadvertently helped facilitate and enhance stigmatized views of pornography (Gould, 2010). For example, President Lyndon Johnson formed the Commission on Obscenity and Pornography in 1967. The commission's purpose involved several main tasks, including evaluating and recommending definitions for obscenity and pornography, how it is distributed and how much, studying its effects on the public, and recommending actions to regulate the flow of such materials without interfering with constitutional rights (Gould, 2010).

In addition, historians have pointed out that these commissions were often comprised of individuals with intentions of incorporating religion into the development of our laws and policies regarding pornography (Gould, 2010). For example, in addition to Johnson, a Protestant (Billington, 1987), three of the 18 individuals commissioned were prominent religious leaders (Gould, 2010). These three individuals included Reverend Morton A. Hill, a

Jesuit Priest who was one of the founders of Morality in Media; Rabbi Irving Lehnnan, who had been the rabbi in Miami Beach, Florida, at Temple Emanu-El, and also served on the boards of numerous national Jewish organizations; and Reverend Winfrey C. Link, who was an administrator for a United Methodist church retirement home (Gould, 2010).

In 1985, President Ronald Reagan formed the Attorney General's Commission on Pornography (often called the Meese Commission; Gould, 2010). The commission's purpose was slightly different than the 1967's Commission on Obscenity and Pornography in that it focused on the effects of pornography on children. In particular, the commission focused on the ways that courts, medicine, and law enforcement handled the issue of pornography, and were tasked with making recommendations to the Attorney General regarding effective ways to contain the spread of pornography (see Gould, 2010). In President Reagan's Attorney General's Commission on Pornography, one of the 11 members on the commission was a well-known clergyman named Reverend Bruce Ritter, who was the founder of an international agency that operated short-term crisis centers for children (Gould, 2010).

Among the many options of politicians, attorneys, researchers, or others that could have been chosen for either of these commissions, it seems significant that individuals whose expertise was within a religious role. This choice of commission members appears to portray how religious values may have been laced throughout the forming of perceptions of pornography in U.S. laws and society, given that many religious worldviews encourage people to repress sexual desires (Muris et al., 1996) and that the effects of religiosity on sexuality and pornography consumption are stigmatic in nature or prohibitive (Ahrold et al., 2011). However, it is important to recognize and acknowledge that different religions can be extremely diverse and that some religious denominations may be more comfortable with

6

pornography than others. Although this is not intended to suggest that the few religious individuals on either commission solely caused the perception of pornography to be a certain way, but that it was possible that such an influence may have contributed to such perceptions.

Furthermore, psychological research has largely examined pornography within the context of pathology or deviance such as addictive behaviors (Williams, 2017), sexual assault and rape myths (Allen et al., 1995; Wright et al., 2015), violence and aggression (Allen et al., 1995), and sexual dysfunction (Park et al., 2016). Although differing amounts of pornography use have been suggested as constituting addictive behavior, Williams (2017) labeled this difficult task of defining addictive pornography use as elusive. (As an example of those in favor of labeling it as an addiction, see Grubbs and Perry [2019], who make an attention-grabbing statement about how they perceive the addictive nature of pornography. In essence, they state that, inasmuch as all addictions likely imply some level of distress, dysregulation, and dysfunction, they are unaware of any other type of addiction for which a notion of dissonance and personal morality seems to have such a meaningful role in its capacity to predict self-perceived compulsivity or problems.) In contrast, others have argued that pornography is not an addictive behavior, but can also have positive results from use (Daneback et al., 2009; Lofgren-Mårtenson & Månsson, 2010; Weinberg et al., 2010). Short and colleagues (2016) suggest that attaching a label or pathological diagnosis to pornography use is not always necessary, and may also be counter-therapeutic for those who seek counseling services as a result of their use.

Cognitive Dissonance Theory (CDT) and Connection to Pornography Use

General Description of CDT

Within the field of psychology, it is widely accepted that when a person behaves in ways that are inconsistent with their beliefs and/or morals, they are likely to experience negative mental health outcomes (Shreve-Neiger & Edelstein, 2004; Siev et al., 2017). The theory of cognitive dissonance was created by Professor Leon Festinger to help explain the mental state experienced by people when holding contradictory values, beliefs, or ideas (1957). "Dissonance," as Festinger refers to it, is the result of a circumstance in which the presence of an inconsistency creates psychological discomfort. In other words, dissonance is the existence of relations or connections that are inconsistent with a person's cognitions. The term *cognition* refers to any opinion, knowledge, or belief about oneself, one's behavior, or the environment (Festinger, 1957). Cognitive dissonance can be viewed as an antecedent condition that motivates a person to eliminate, compensate for, or rationalize perceived inconsistencies in order to reduce feelings of discomfort. For example, when a person is asked to form an opinion or a decision, some degree of dissonance is almost unavoidably created between the cognition(s) related to the action taken and any opinions or knowledge that tend to point to a different possible action than the one taken. Two main principles act as the foundation of CDT. The first states that the existence of dissonance will motivate a person to try and reduce the psychological discomfort and achieve *consonance* (i.e., consistency). The second principle states that when dissonance occurs, in addition to efforts to reduce it, the person will actively attempt to avoid information and situations that would likely increase the amount of dissonance experienced (Festinger, 1957).

To help explain the process of CDT, Festinger (1957) often used the example of a habitual cigarette smoker, Phil, who has just learned that smoking is bad for his health. As brand new knowledge, this information will likely be dissonant with Phil's cognitions and behaviors if he continues to smoke. Based on the previously described principle, Phil will experience pressure to reduce this dissonance and will likely engage in either two broad types of compensatory behaviors: (a) attitude change and/or (b) behavioral change. Given that behavioral changes are more difficult to implement and take more effort than attitude changes (Leippe, & Eisenstadt, 1999), CDT would assume that in effort to reduce dissonance, Phil would be more likely to change his attitudes instead of changing behavior; however, CDT also suggests that this tendency (to more readily change attitudes before behaviors) reverses as the magnitude of dissonance increases (Festinger, 1957). In other words, the more severe the discomfort from dissonance becomes, the more likely a person is to change behaviors compared to attitudes.

Returning to our example of Phil and what he might do next–he might change his behaviors related to smoking by quitting, or, he might challenge his "knowledge" about the effects of smoking. He may choose to believe that smoking has no deleterious effects on his health. Understandably, Phil might find it difficult to change his behavior or challenge his knowledge, which is precisely why his feelings of dissonance will likely persist. Phil may find that quitting smoking is too painful or difficult. He may try to support his desire by seeking opinions or facts that are more consistent with his thoughts and behaviors (e.g., smoking is not harmful to his health). But these attempts may fail, meaning that Phil will remain in a situation where he continues to smoke despite knowing that his choice to smoke

is harmful to his health. As a result, his cognitive dissonance, and therefore, his efforts to reduce discomfort, will not cease.

Connection to Pornography Use

Since its inception, cognitive dissonance has been discussed in the psychological literature to help explain the negative effects of pornography consumption. In a literature review on pornography use, Grubbs and Perry (2019) concluded that experiencing moral incongruence (dissonance) as a result of consuming pornography is both common and distressing for the individual. This association is more than theoretical. For example, in a nationally representative longitudinal study, Perry (2018) found that pornography consumption was associated with increased depressive symptoms over a six-year period–but, only among men who reported moral disapproval of pornography use (as opposed to those who did not morally disapprove of pornography use). In other words, individuals who viewed pornography were more likely to experience higher levels of depression over time, but only if they reported moral disapproval of it (Perry, 2018). This finding suggests that the dissonance itself appears to play a significant role in relation to symptoms of psychological distress.

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Research on Pornography Consumption

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Psychological research on pornography use has primarily concentrated on examining the effects of pornography use particularly among men who are in heterosexual relationships. It is important to mention that a great deal of scholarship has been concerned with accurately defining pornography and measuring its use (Newstrom & Harris, 2016) as well as whether pornography use should be considered an addiction (Williams, 2017); however, such debates

are not particularly relevant to the current investigation and are beyond the scope of this study.

Predictors and Correlates of Pornography Consumption

Gender. Researchers have suggested that as many as half of all men will have been exposed to pornography before age 13, almost all will use it occasionally for masturbation, and roughly 46% use pornography weekly (Regnerus et al., 2016; Sun et al., 2016). In comparison, women report significantly less use of pornography (Campbell & Kohut, 2017; Carroll et al., 2008; Regnerus et al., 2016). Carroll and colleagues (2017) described these gender differences as a pornography gap and that men typically experience more negative effects as a result of its use. To further this idea, other scholars have boldly suggested that even the "majority" of men report regularly viewing pornography (Carroll et al., 2008; Hald et al., 2014; Regnerus et al., 2016). As a whole, this and other previously mentioned findings in the literature show that a better understanding of the use and effects of pornography on individual men is justified and needed.

Political affiliation. In terms of the research on pornography use and political affiliation, studies suggest that people who identify as more conservative tend to hold beliefs associated with the moral disapproval of pornography (Carroll et al., 2008; Lambe, 2004). Furthermore, in an analysis with over 11,300 adults, Frutos and Merrill (2017) found that pornography use was higher among non-Republicans and non-conservatives. Other researchers suggest that more liberal stances often indicate greater acceptance of diverse sexual orientations and practices, which has been linked to greater likelihood of pornography use (Doran & Price 2014; MacInnis & Hodson, 2015; Tokunaga et al., 2014; Wright & Bae 2013; Wright et al., 2013; Yang, 2016).

Attitudes toward pornography. Despite very few studies having found an empirical connection between attitudes towards pornography and mental health outcomes, a note should be made as rationale for including attitudes towards pornography in this study– specifically as predictors of depression, anxiety, and life satisfaction. Regardless of the specific outcomes being examined, most of the research concerning the effects of pornography has either ignored, or at best, has simply controlled for attitudes regarding pornographic content (Willoughby et al., 2018). One study looked at permissive sexual attitudes and online pornography and found significant correlations between attitudes and both depression and life satisfaction (Ma, 2018). Compared to non-consumers of pornography, male pornography consumers have been found to endorse beliefs toward things related to permissive sexual attitudes, including adult premarital sex, extramarital sex, and teenage sex (Wright & Vangeel, 2019), suggesting that permissive sexual attitudes and attitudes towards pornography are similar in nature. These findings help establish a potential relationship between attitudes towards pornography and psychological outcomes.

Social desirability. It is important to note that obtaining reliable data on a subject such as pornography consumption may prove difficult given both the stigma surrounding it and the private nature of its use (Perry & Snawder, 2017). Like any other provocative topic, people may not be overly forthcoming about the degree and nature of their pornography use, which may also suggest that people may underreport the negative effects of their pornography use in effort to positively self-present (Rasmussen et al., 2018). For example, people may be more comfortable with discussing the use and effects of pornography in general, but may be less willing to admit to their own use and the negative effects on their lives (Lo & Wei, 2002). Again, with regards to religion in particular, Grubbs and Perry

(2019) stated that many individuals who disapprove of pornography are actually consuming it themselves. In terms of social desirability and pornography use, there has been a particular interest in comparing the reports and use of pornography among those who identify as religious versus those who do not. Regnerus (2007) discussed how there is a lingering societal stigma against those who consume pornography, especially among religious organizations. Rasmussen and colleagues (2018) stated that prior to their research, only one other study to date had reported explicit associations between pornography consumption and measures of social desirability (see Barak et al., 1999).

Overall, there is little research on pornography use that has accounted for social desirability. Of the existing research, Barak and colleagues (1999) utilized a social desirability measure in their study exploring the effects of Internet pornography and attitudes toward women. Results revealed non-significant correlations between social desirability and attitudes towards woman. However, Rasmussen and colleagues (2018) found evidence that social desirability biases in pornography-related self-reports do indeed exist, and further assert that their (Rasmussen et al., 2018) efforts remain the best available assessment of social desirability bias within the context of pornography-related measures.

Consequences of Use

    Positive consequences. Despite that the majority of research on pornography use has focused on negative consequences, there is some evidence indicating there may be positive outcomes for consumers of pornography. For example, researchers have found that as a result of pornography consumption, some individuals report increased levels of sexual openness and knowledge (Weinberg et al., 2010). Others have found pornography use lead to enhanced sexual intimacy among couples that can potentially contribute to more sexual enjoyment

(Lofgren-Mårtenson & Månsson, 2010), or increased openness in the specific sexual environments and/or climates that people create in their personal relationships (Daneback et al., 2009). Although pornography use has traditionally been linked to negative consequences, this research provides a very different perspective–that not every person experiences negative effects as a result of consuming pornographic materials.

Negative consequences. Although researchers have identified both positive and negative consequences of pornography consumption, most studies have investigated the negative effects of use on relationships and mental health outcomes. As the co-director of the Sexual Trauma and Psychopathology Program at the University of Pennsylvania's Center for Cognitive Therapy, Mary Anne Layden called pornography the "most concerning thing to psychological health that I know of existing today" (Wired, 2017). More specifically within the realm of mental health, pornography consumption has been found to have varying effects on individuals regarding depression, anxiety, and life satisfaction.

A myriad of studies have sought to understand the effects of pornography consumption on mental health and well-being among diverse populations that vary by age, sexual orientation, gender, and religious/spiritual beliefs. For example, exposure to online pornography has been linked with depressive symptoms among adolescents (Willoughby et al., 2018; Janis Wolak et al., 2007) as well as college students (Willoughby et al., 2014). In addition, studies that examined personal patterns of pornography use found that higher rates of consumption were associated with increased levels of depression particularly among heterosexual men (Bridges & Morokoff, 2011) as well as among gay and bisexual men (Whitfield et al., 2018).

In addition, studies suggest that problems related to pornography use typically manifest in intimate and sexual relations/relationships (Daneback et al., 2006). A qualitative study of 15 heterosexual men who identified themselves as having problematic pornography use found that most reported experiencing shame in their relationships (Sniewski & Farvid, 2019). When considering whether or not to disclose their use to romantic partners, participants reported feelings of unease and embarrassment as a result of their consumption. One participant described his experience with strong words by saying that, even after agreeing with his wife that he would tell her when he viewed, the thought of sharing that information with her was "unbearably shameful" (p. 5). For some, these feelings related to shame were experienced due to religious beliefs, whereas for others, religion was not a factor but the concern was more out of fear that their romantic partner would find out about their pornography use.

Intersection of Religion in Pornography Research

Among religious people who view pornography, higher levels of distress have been found in both psychological (Grubbs et al., 2010; Patterson & Price, 2012) and religious/spiritual functioning (Short et al., 2015). In addition to reporting more negative attitudes toward pornography (Hardy et al., 2013), religious individuals have been found to report perceptions of pornography as being both addictive and negatively impactful (Grubbs et al., 2015; MacInnis & Hodson, 2016). Yet, at the same time, non-religious individuals may also experience distress over their use (Bradley et al., 2016), especially given that pornography is still highly stigmatized (Romito & Beltramini, 2011; Zillmann & Bryant, 1986).

Several studies have examined pornography use among religious individuals and have found various/mixed results. Examples range from suggestions that pornography use may enhance religiousness (i.e., increased reliance on a higher power to resist consumption; Perry, 2017), or that it may threaten religious socialization (Perry, 2015; Perry & Hayward, 2017), or increase religious and spiritual difficulties (Griffin et al., 2016; Grubbs, Exline, et al., 2017; Wilt et al., 2016). In addition, recent research has argued that the negative association of frequent pornography use and low marital quality is particularly strong for people who are embedded in religious communities, likely resulting from the greater stigma and shame associated with viewing pornography in these cultures (Perry & Snawder, 2017). Other researchers have found that feelings of shame and scrupulosity may lead adherents to distance themselves from their family and friends as a result of frequent violations of the religious-moral stigma against the use of pornography (Short et al., 2012). However, other findings suggest that nonreligious individuals may also experience negative consequences as a result of pornography consumption, even if not to the same degree as religious individuals (Bradley et al., 2016). When examining associations between pornography use, religiosity, and happiness levels, Patterson and Price (2012) found that religious individuals who consumed pornography reported lower levels of subjective happiness. After examining the perceptions of pornography addiction regarding religiosity (assessed by evaluating what religious affiliation individuals had, if any, and the extent to which their religion was important to them) and relationship anxiety, Leonhardt and colleagues (2018) found that higher amounts of pornography consumption were associated with heightened relationship anxiety, especially when individuals perceived themselves as addicted to pornography.

Previous studies regarding pornography use have shown that including religiosity as a moderator can help clarify the effect that religiosity may have in the lives of pornography users. For example, Rasmussen and colleagues (2018) found significant levels of social desirability biases and increased perceptions of negative consequences of pornography use among the highly religious, but not among the less religious. In addition, King (2016) examined the moderating effects of religious commitment on the link between pornography consumption and negative outcomes (e.g., likelihood to rape, coercive behavior with sexual fantasies). Although the majority of findings from this study suggested that self-reported religiosity did not moderate associations between the age of first exposure to pornography and adult psychosexual outcomes, there was one exception to this finding: participants with high levels of religiosity were more likely to report hypersexual behaviors when their first exposure to pornography was later in life. For both of these studies (Rasmussen et al., 2018; King, 2016), including religiosity as a moderator led to further clarification of their findings regarding the effects of pornography use.

For the purpose of this study, political affiliation and political philosophy will be included in this investigation in attempt to provide a more comprehensive understanding of factors that may play a role in the effect of pornography use on consumers in order to help guide treatment for any educational or health professionals who may work with such clientele.

Study Purpose and Implications

It has been suggested that pornography will become more a part of mainstream culture as well as a more prominent feature in decision-making concerning dating and courtship–and as a result, a better understanding of common patterns that emerge related to

pornography will enable educators, therapists, and other family professionals to better provide relevant and meaningful guidance for those facing difficulties with pornography (Carroll et al., 2017). In other words, there is a clear and present need for more empirical studies assessing the myriad of means by which pornography users may develop and/or experience problems (Grubbs & Perry, 2019).

Of the existing research on pornography use, studies have largely focused on behaviors that constitute pornography addiction (Williams, 2017) and the negative effects of pornography use on mental health outcomes (e.g., Bridges & Morokoff, 2011; Whitfield et.al, 2018). A review of the extant literature revealed that studies have rarely accounted for attitudes toward pornography or social desirability, which is surprising given that pornography has, and continues to remain highly stigmatized (Romito & Beltramini, 2011; Zillmann & Bryant, 1986). In short, utilizing CDT as a framework is intended to help provide more context for the psychological outcomes commonly associated with pornography use since it accounts for general attitudes toward pornography and helps explain the dissonance that people can experience. Therefore, based on the framework of CDT (Festinger, 1957), this study will take an exploratory approach in examining the connections between attitudes toward pornography, pornography use, and the psychological outcomes of anxiety, depression, and life satisfaction among a sample of adult men while also accounting for social desirability.

Studies have also suggested that religious individuals tend to report more severe negative consequences as a result of pornography use (Grubbs et al., 2010; Patterson & Price, 2012). In essence, the dissonance experienced from viewing pornography while simultaneously holding negative attitudes about pornography can make continued

pornography consumption difficult to understand, especially for religiously-identified individuals (Regnerus, 2007). Because religiosity has been found to have connections to pornography use and its effects, religiosity will act as a moderator in this study in order to assess whether it enhances or decreases associations expected to be found between attitudes towards pornography, actual use, and reported levels of depression, anxiety, and life satisfaction. To my knowledge, no studies have explicitly assessed political affiliations in relation to pornography use except for one, which asked for similar responses to identify participants' political affiliation (see Frutos & Merrill, 2017).

Research Questions and Hypotheses

Given that men tend to be the primary consumers of pornography (Carroll et al., 2008; Hald et al., 2014; Regnerus et al., 2016), yet also tend to experience negative consequences related to their use (Willoughby et al., 2014; Bridges & Morokoff, 2011; Whitfield et al., 2018), it seems important to explore factors to help explain the extent to which certain individuals may experience consequences of pornography use. Therefore, among a sample of adult men, a general aim of the current study was to further explore the relationships between pornography use and psychological outcomes. Despite the provocative and stigmatized nature of pornography, however, studies have rarely accounted for attitudinal influence in explaining some of the consequences of pornography use. Therefore, to help extend this area of research on pornography use, I used the general framework of CDT to account for attitudinal influences. Given that most of the existing research has focused on the negative implications of pornography use, I posed the following hypotheses involving negative pornography attitudes:

H1a: Negative pornography attitudes would positively correlate with depression and anxiety, and negatively correlate with life satisfaction.

H1b: Pornography use would positively correlate with depression and anxiety, and negatively correlate with life satisfaction.

H2a: When controlling for social desirability, negative pornography attitudes would significantly relate to depression, anxiety, and life satisfaction scores.

H2b: When controlling for social desirability, pornography use would account for a significant degree of variance in depression, anxiety, and life satisfactions scores above

and beyond negative pornography attitudes.

H3: Religiosity would moderate the relationship between negative pornography attitudes and the outcomes of depression, anxiety, and life satisfaction such that higher levels of religiosity would significantly enhance the relationship between negative pornography attitudes and the three psychological outcomes.

Since little is known about positive pornography attitudes, the following research questions were posed:

1. To what degree would positive pornography attitudes relate to social desirability, pornography use, religiosity, depression, anxiety, and satisfaction with life?

2. When controlling for social desirability, to what degree would positive pornography attitudes relate to the three outcomes of depression, anxiety, and life satisfaction?

3. When controlling for social desirability, to what degree would pornography use account for a significant degree of variance in depression, anxiety, and life satisfaction above and beyond positive pornography attitudes?

CHAPTER 2

REVIEW OF THE LITERATURE

Abbreviated Literature Review

Although accessing sexually-related content may be relatively easy compared to 30 years ago, the topic of sex and pornography, in particular, continues to remain stigmatized, and even aberrant to some (Romito & Beltramini, 2011; Zillmann & Bryant, 1986). For example, Lang and Rosenberg (2017) found that members of the lay public (women in particular) were less willing to even affiliate with someone described as having an addiction to pornography. In addition, Baetz and Carson (1999) attempted to use a local pornography company as a case study for a business studies course, but their institution raised concerns about legitimizing the company and promoting pornography use. Despite its global presence and increased consumption (Voss, 2012), pornography often remains a taboo topic of conversation (Romito & Beltramini, 2011), and its use is often deemed inappropriate (Rasmussen et al., 2018).

At the same time, pornography use has become relatively commonplace in contemporary society due to its ease of access (D'Orlando, 2011); yet studies have also found that people tend to experience a variety of unintended and negative consequences linked to their consumption (e.g., Bradley et al., 2016; Tseferidi et al., 2017; Willoughby et al., 2018). However, most of these studies have focused on pornography as an addiction (Williams, 2017) or on the negative effects of use on relationships (e.g., Bridges & Morokoff, 2011; Whitfield et al., 2018). Despite the stigma of pornography and the negative consequences often experienced by consumers, the continued use of pornography eludes to some form of dissonance experienced by its users. In other words, for some individuals,

22

viewing pornography may lead to unwanted consequences, yet they continue to engage in the behavior. From a cognitive dissonance standpoint, when a person behaves in ways that are inconsistent with their beliefs and/or morals, they are likely to experience negative effects or psychological discomfort. As the viewing of pornography is often stigmatized and tied to beliefs surrounding deviance and morality (Willoughby et al., 2018), studies have found that religiosity (as well as the lack thereof) may significantly influence a person's feelings of incongruence regarding their behaviors and values (Perry, 2016; Perry & Whitehead, 2018). As a result, the role of religiosity (defined by the prominence of religiosity/spirituality in everyday thought and feelings; Exline et al., 2000) may exacerbate such negative effects due to the stigma attached to pornography use (Griffin et al., 2016; Grubbs et al., 2017; Wilt et al., 2016).

Therefore, the purpose of this study was to use Cognitive Dissonance Theory (Festinger, 1957) as a general framework to explore the connections between attitudes toward pornography, pornography use, and psychological outcomes (i.e., anxiety, depression, and life satisfaction) among a sample of adult men. In addition, given the link between religiosity and pornography use (e.g., Grubbs et al., 2010; Patterson & Price, 2012; Short et al., 2015) I examined the moderating effects of religiosity on the relationship between attitudes towards pornography and psychological outcomes of depression, anxiety, and life satisfaction. Although pornography use among women may be increasing (Carroll et al., 2008; Hald et al., 2014; Regnerus et al., 2016), studies suggest that there is a sizeable gender gap in pornography consumption, such that men are more likely to use pornography compared to women (Carroll et al., 2008; McKee, 2007) and are more likely to experience negative effects as a result of use (e.g., Bridges & Morokoff, 2011; Whitfield et al., 2018;

Muusses et al., 2014). Results of the current study are intended to provide a better understanding of the relationship between attitudes toward pornography and psychological outcomes associated with use in order to help educators, therapists, and other family professionals work with individuals who may be struggling with the effects of their use.

General Description of CDT

Within the field of psychology, it is widely accepted that when a person behaves in ways that are inconsistent with their beliefs and/or morals, they are likely to experience negative mental health outcomes (Shreve-Neiger & Edelstein, 2004; Siev et al.,2017). The theory of cognitive dissonance was created by Professor Leon Festinger to help explain the mental state experienced by people when holding contradictory values, beliefs, or ideas (1957). "Dissonance," as Festinger refers to it, is the result of a circumstance in which the presence of an inconsistency creates psychological discomfort. In other words, dissonance is the existence of relations or connections that are inconsistent with a person's cognitions. Cognitive dissonance can be viewed as an antecedent condition that motivates a person to eliminate, compensate for, or rationalize perceived inconsistencies in order to reduce feelings of discomfort. Two main principles act as the foundation of CDT. The first states that the existence of dissonance will motivate a person to try and reduce the psychological discomfort and achieve *consonance* (i.e., consistency). The second principle states that when dissonance occurs, in addition to efforts to reduce it, the person will actively attempt to avoid information and situations that would likely increase the amount of dissonance experienced (Festinger, 1957).

Since its inception, cognitive dissonance has been discussed in the psychological literature to help explain the negative effects of pornography consumption. In a literature

review on pornography use, Grubbs and Perry (2019) concluded that experiencing moral incongruence (dissonance) as a result of consuming pornography is both common and distressing for the individual. This association is more than theoretical. For example, in a nationally representative longitudinal study, Perry (2018) found that pornography consumption was associated with increased depressive symptoms over a six-year period–but, only among men who reported moral disapproval of pornography use (as opposed to those who did not morally disapprove of pornography use). In other words, individuals who viewed pornography were more likely to experience higher levels of depression over time, but only if they reported moral disapproval of it (Perry, 2018). This finding suggests that the dissonance itself appears to play a significant role in relation to symptoms of psychological distress.

Research on Pornography Consumption

Psychological research on pornography use has primarily concentrated on examining the effects of pornography use, particularly among men who are in heterosexual relationships. It is important to mention that a great deal of scholarship has been concerned with accurately defining pornography and measuring its use (Newstrom & Harris, 2016) as well as whether pornography use should be considered an addiction (Williams, 2017); however, such debates are not particularly relevant to the current investigation and are beyond the scope of this study.

Attitudes toward pornography. Despite very few studies having found an empirical connection between attitudes towards pornography and mental health outcomes, a note should be made as rationale for including attitudes towards pornography in this study– specifically as predictors of depression, anxiety, and life satisfaction. Regardless of the

specific outcomes being examined, most of the research concerning the effects of pornography has either ignored, or at best, has simply controlled for attitudes regarding pornographic content (Willoughby et al., 2018). One study looked at permissive sexual attitudes and online pornography and found correlations between attitudes and both depression and life satisfaction (Ma, 2018). Compared to non-consumers of pornography, male users have been found to endorse beliefs toward things related to permissive sexual attitudes, including adult premarital sex, extramarital sex, and teenage sex (Wright & Vangeel, 2019), suggesting that permissive sexual attitudes and attitudes towards pornography are similar in nature. These findings help establish a potential relationship between attitudes towards pornography and psychological outcomes.

  Social desirability. It is important to note that obtaining reliable data on a subject such as pornography consumption may prove difficult given both the stigma surrounding it and the private nature of its use (Perry & Snawder, 2017). Like any other provocative topic, people may not be overly forthcoming about the degree and nature of their pornography use, which may also suggest that people may underreport the negative effects of their pornography use in effort to positively self-present (Rasmussen et al., 2018). For example, people may be more comfortable with discussing the use and effects of pornography in general, but may be less willing to admit to their own use and the negative effects on their lives (Lo & Wei, 2002). In terms of social desirability and pornography use, there has been some interest in comparing the reports and use of pornography among those who identify as religious versus those who do not. Regnerus (2007) discussed how there is a lingering societal stigma against those who consume pornography, especially among religious organizations. Rasmussen and colleagues (2018) stated that prior to their research, only one

study to date had reported explicit associations between pornography consumption and measures of social desirability (see Barak et al., 1999).

Overall, there is little research on pornography use that has accounted for social desirability. Of the existing studies, Barak and colleagues (1999) utilized a social desirability measure when exploring the effects of Internet pornography and found non-significant correlations between social desirability and attitudes towards woman. However, Rasmussen and colleagues (2018) found evidence that social desirability does influence self-reported use of pornography, and further asserts that their (Rasmussen et al., 2018) efforts remain a strong assessment of social desirability bias within the context of pornography research.

Consequences of Use

Positive consequences. Despite that the majority of research on pornography use has focused on negative consequences, there is some evidence indicating there may be positive outcomes for consumers of pornography. For example, researchers have found that as a result of pornography consumption, some individuals report increased levels of sexual openness and knowledge (Weinberg et al., 2010). Others have found pornography use lead to enhanced sexual intimacy among couples that can potentially contribute to more sexual enjoyment (Lofgren-Mårtenson & Månsson, 2010), or increased openness in the specific sexual environments and/or climates that people create in their personal relationships (Daneback et al., 2009). Although pornography use has traditionally been linked to negative consequences, this research provides a very different perspective–that not every person experiences negative effects as a result of consuming pornographic materials.

Negative consequences. Most studies, specifically within the realm of mental health, have investigated the negative effects of use on relationships and mental health outcomes. A

myriad of studies have sought to understand the effects of pornography consumption on mental health and well-being among diverse populations that vary by age, sexual orientation, gender, and religious/spiritual beliefs. For example, exposure to online pornography has been linked with depressive symptoms among adolescents (Willoughby et al., 2018) as well as college students (Willoughby et al., 2014). In addition, studies that examined personal patterns of pornography use found that higher rates of consumption were associated with higher depression, particularly among heterosexual men (Bridges & Morokoff, 2011) as well as gay and bisexual men (Whitfield et al., 2018).

Further, studies suggest that problems related to pornography use typically manifest within intimate and sexual relations/relationships (Daneback, Ross, & Månsson, 2006). A qualitative study of 15 heterosexual men who identified themselves as having problematic pornography use found that most reported experiencing shame in their relationships (Sniewski & Farvid, 2019). When considering whether or not to disclose their use to romantic partners, participants reported feelings of unease and embarrassment as a result of their consumption. One participant described his experience with strong words by saying that, even after agreeing with his wife that he would tell her when he viewed, the thought of sharing that information with her was "unbearably shameful" (p. 5). For some, these feelings related to shame were experienced due to religious beliefs, whereas for others, religion was not a factor but the concern was more out of fear that their romantic partner would find out about their pornography use.

Intersection of Religion in Pornography Research

Among religious people who view pornography, higher levels of distress have been found in both psychological (Grubbs et al., 2010; Patterson & Price, 2012) and

religious/spiritual functioning (Short et al., 2015). In addition to reporting more negative attitudes toward pornography (Hardy et al., 2013), religious individuals have been found to report perceptions of pornography as being both addictive and negatively impactful (Grubbs et al., 2015). Yet, at the same time, non-religious individuals may also experience distress over their use (Bradley et al., 2016), especially given that pornography is still highly stigmatized (Romito & Beltramini, 2011).

Several studies have examined pornography use among religious individuals and have found various/mixed results. Examples range from suggestions that pornography use may enhance religiousness (i.e., increased reliance on a higher power to resist consumption; Perry, 2017), or that it may threaten religious socialization (Perry, 2015; Perry & Hayward, 2017), or increase spiritual difficulties (Griffin et al., 2016; Wilt et al., 2016). In addition, studies have argued that the negative association of frequent pornography use and low marital quality is particularly strong for people who are embedded in religious communities, likely resulting from greater stigma and shame associated with viewing pornography (Perry & Snawder, 2017; Short et al., 2012). However, other findings suggest that nonreligious individuals may also experience negative consequences as a result of pornography consumption, even if not to the same degree as religious individuals (Bradley et al., 2016). When examining links between pornography use, religiosity, and happiness, Patterson and Price (2012) found that religious individuals who used pornography reported lower levels of subjective happiness. After examining the perceptions of pornography addiction regarding religiosity (assessed by evaluating what religious affiliation individuals had, if any, and the extent their religion was important to them) and relationship anxiety, Leonhardt and colleagues (2018) found that higher amounts of pornography consumption was linked with

heightened relationship anxiety, especially when individuals viewed themselves as addicted to pornography.

Previous studies regarding pornography use have shown that including religiosity as a moderator can help clarify the effect that religiosity may have in the lives of pornography users. For example, Rasmussen and colleagues (2018) found that among the highly religious, individuals reported higher levels of social desirability bias and were more likely to associate negative consequences with pornography use than the less religious. In addition, King (2016) examined the moderating effects of religious commitment on the link between pornography consumption and negative outcomes (e.g., likelihood to rape, coercive behavior with sexual fantasies). Although the study results suggested that self-reported religiosity did not moderate associations between the age of first exposure to pornography and adult psychosexual outcomes, there was one exception to this finding: participants with high levels of religiosity were more likely to report hypersexual behaviors when their first exposure to pornography was later in life. For both of these studies (Rasmussen et al., 2018; King, 2016), including religiosity as a moderator led to further clarification of their findings regarding the effects of pornography use.

Study Purpose and Implications

Of the existing research on pornography use, studies have largely focused on behaviors that constitute pornography addiction (Williams, 2017) and the negative effects of pornography use on mental health outcomes (e.g., Bridges & Morokoff, 2011; Whitfield et.al, 2018). A review of the extant literature revealed that studies have rarely accounted for attitudes toward pornography or social desirability, which is surprising given that pornography has, and continues to remain highly stigmatized (Romito & Beltramini, 2011).

In short, utilizing CDT as a framework was intended to help provide more context for the psychological outcomes commonly associated with pornography use since it accounts for general attitudes toward pornography and helps explain the dissonance that people can experience. Therefore, based on the framework of CDT (Festinger, 1957), this study took an exploratory approach in examining the links between attitudes toward pornography, pornography use, and the psychological outcomes of anxiety, depression, and life satisfaction among a sample of adult men while also accounting for social desirability. In addition, given that studies have found that religious individuals tend to report more severe negative consequences as a result of pornography use (Grubbs et al., 2010; Patterson & Price, 2012), I also examined the moderating effects of religiosity to assess whether it enhanced or decreased associations between attitudes towards pornography and reported levels of depression, anxiety, and life satisfaction.

Research Questions and Hypotheses

Given that men tend to be the primary consumers of pornography (Carroll et al., 2008; Hald et al., 2014; Regnerus et al., 2016), yet also tend to experience negative consequences related to their use (Willoughby et al., 2014; Whitfield et al., 2018), it seems important to explore factors to help explain the extent to which certain individuals may experience consequences of pornography use. Therefore, among a sample of adult men, a general aim of the current study was to further explore the relationships between pornography use and psychological outcomes. Despite the provocative and stigmatized nature of pornography, however, studies have rarely accounted for attitudinal influence in explaining some of the consequences of pornography use. Therefore, to help extend this area of research on pornography use, I used the general framework of CDT to account for

31

attitudinal influences. Given that most of the existing research has focused on the negative implications of pornography use, I posed the following hypotheses involving negative pornography attitudes:

H1a: Negative pornography attitudes would positively correlate with depression and anxiety, and negatively correlate with life satisfaction.

H1b: Pornography use would positively correlate with depression and anxiety, and negatively correlate with life satisfaction.

H2a: When controlling for social desirability, negative pornography attitudes would significantly relate to depression, anxiety, and life satisfaction scores.

H2b: When controlling for social desirability, pornography use would account for a significant degree of variance in depression, anxiety, and life satisfactions scores above

and beyond negative pornography attitudes.

H3: Religiosity would moderate the relationship between negative pornography attitudes and the outcomes of depression, anxiety, and life satisfaction such that higher levels of religiosity will significantly enhance the relationship between negative pornography attitudes and the three psychological outcomes.

Since little is known about positive pornography attitudes, the following research questions were posed:

4. To what degree would positive pornography attitudes relate to social desirability, pornography use, religiosity, depression, anxiety, and satisfaction with life?

5. When controlling for social desirability, to what degree would positive pornography attitudes relate to the three outcomes of depression, anxiety, and life satisfaction?

6. When controlling for social desirability, to what degree would pornography use account for a significant degree of variance in depression, anxiety, and life satisfaction above and beyond positive pornography attitudes?

CHAPTER 3

METHODOLOGY

Participants

An a priori power analysis was conducted using G*power 3.1.9.2 (Faul et al., 2009) in order to determine the minimum number of participants needed for a small effect size (.02; Cohen, 2013), assuming an effect exists within the sample. Other studies about pornography use have typically observed small effect sizes (e.g., Bradley et al., 2016; Grubbs et al., 2015; Grubbs et al., 2018; Hardy et al., 2019; King, 2016; Miller et al., 2018; Willoughby et al., 2018; Willoughby & Busby, 2016), as will be done in the current study. The power analysis revealed that a sample size needed in order to obtain a small effect size ($f^2 = 0.02$) for a multiple regression analysis (fixed model, increase in R^2) with five predictors at the alpha coefficient level of 0.05 and power of .80 was 264 participants. In the attempt to obtain enough full and complete participant responses, I aimed to obtain 300 to 350 responses of participants who reported having viewed pornography in the past 6 months. After data collection, there were 420 complete participant responses that were used for analyses. There was no determined number of participants needed for those who reported not having viewed pornography in the previous 6 months. As a descriptive note of this sample, which will be discussed later in the counseling implications section, data indicated that 129 out of the 400 (32.25%) participants who reported pornography use in the current study also reported having sought out counseling services as a result of their pornography use. All sample characteristics are presented in Table 1.

Table 1
Sample Characteristics

Characteristic	Percent	Sample Frequency
Political Leaning		
Democrat	52.4	(220)
Other	17.4	(73)
Republican	30.2	(127)
Ideological Leaning		
Liberal	42.9	(180)
Independent	39.0	(164)
Conservative	18.1	(76)
Philosophical Leaning		
Authoritarian	38.3	(161)
Libertarian	61.2	(257)
Age		
Mean (SD)	33.73 (10.97)	
Race/Ethnicity		
White/European American	62.4	(262)
Black/African American	5.0	(21)
Asian/Asian American	21.2	(89)
Hispanic/Latino(a)	7.4	(31)
American Indian/Alaskan Native	2.6	(11)
Biracial or Multiracial	1.0	(4)
Other Not Specified	.5	(2)
Sexual Orientation		
Heterosexual	81.9	(344)
Gay	5.5	(23)
Bisexual	10.7	(45)
If not listed, please specify	1.0	(4)
Current Relationship Status		
Single	34.0	(143)
In a relationship	17.1	(72)
Married/Partnered	46.2	(194)
Divorced	2.1	(9)
Widowed	.2	(1)
Highest Level of Education		
Middle School and below	.14	(6)
High School	18.3	(77)
Associate's Degree	12.9	(54)
Bachelor's Degree	49.8	(209)
Master's Degree	16.4	(69)
Doctoral or Professional	1.2	(5)
Attended Counseling Porn Use		
Yes	32.25	(129)
No	62.4	(262)
Not applicable to me	6.9	(29)

Note. Numbers outside parentheses are percentages; inside parentheses are sample numbers, with the exception of Age.

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35

Procedure

All recruitment and data collection took place online. Before posting the survey on MTurk, I obtained approval from the Social Sciences Institutional Review Board at the University of Missouri-Kansas City. I relied on data collection via a web-based Qualtrics survey, sampled from the Amazon Mechanical Turk (MTurk) Website (https://www.mturk.com). MTurk is a website specifically dedicated to those looking for online labor, employing "workers" from around the world to complete specific tasks. Recently, scholars have noted that MTurk samples are very similar to the diversity of other behavioral research samples (Leonhardt et al., 2018). In addition, several scholars have been able to replicate previous research findings on MTurk as evidence for the validity of the sample (Paolacci et al., 2010; Schleider & Weisz, 2015). One purpose in using MTurk for participant responses was to allow for a much broader exploration of attitudes and perceptions of pornography compared to only sampling college students or people from a specific geographic location (see Rasmussen et al. 2018).

For the current study, a job (HIT) was posted inviting participants to complete a survey about pornography that took approximately 10 minutes. All MTurk workers were able to view the initial HIT description, which once accessed further indicated that participants must meet study criteria and would be re-directed to a Qualtrics survey to answer the initial screening questions. Participants were asked to respond to screening questions to ensure that they met the following criteria: English speaking adult men (over age 18) and needing to have been U.S. citizens for at least 10 years. Once participants clicked on the Qualtrics link to the survey, an additional screening intervention was utilized by having participants first mark their identified gender (i.e., "male," "female," "trans male," "trans female," or "if not

listed, please specify"). In the event that a participant marked "female or "trans female,"–whether the participant did not thoroughly read the eligibility requirements or tried to get compensated for the survey when not qualified to take it–the Qualtrics survey ended and redirected the individual back to the MTurk website. The cut off of 10 years as U.S. citizens resulted from wanting to increase the likelihood that participants had lived in the country long enough to be familiar with societal attitudes towards pornography and its presence. It seems that being a citizen less than 10 years may not act as ample exposure and time in U.S. culture regarding attitudes toward and use of pornography. If participants met the eligibility requirements, they were re-directed to a separate page that briefly described the study purpose, informed participants of their rights, and provided additional informed consent information (see Attachments 1 and 2 in Appendix). At the bottom of the informed consent page, participants were given the option to continue on to the survey portion of the study. Participants who did not meet study criteria were thanked for their interest and informed that they did not meet the screening criteria for participation in the current study and were re-directed back to MTurk.

Upon completion of the survey, participants were thanked for their time and compensated with $0.25 within three days of completing the survey, a rate similar to other comparable tasks on the MTurk Website (Leonhardt et al., 2018; Willoughby & Busby, 2016).

Measures

Participants were asked to complete the following surveys: 2 items assessing for amounts of pornography consumption in the last 6 months; Pornography-Related Attitudes Scale; Depression Anxiety Stress Scale; Satisfaction With Life Scale; two sets of items

measuring religiosity; Marlowe-Crowne Social Desirability Scale; political affiliation; and basic demographic information. To minimize the potential for low quality responses due to fast and cheap data (Mason & Suri, 2012; McCreadie et al., 2010), I inserted three validity questions throughout the survey (e.g., *to make sure that you're paying attention, please choose 6=strongly agree for this response*).

Attitudes toward pornography. The Pornography-Related Attitudes Scale (Rasmussen et al., 2018) was used to assess attitudes related to pornography use. The Pornography-Related Attitudes Scale consists of two subscales: Positive Attitudes and Negative Attitudes. The first subscale, Positive Attitudes toward pornography ($n = 4$) was considered the degree to which individuals believe consumption of pornography to be normal and morally acceptable (e.g., "*To what extent do you think that it is normal for a man to view pornography online?*"). The second subscale, Negative Attitudes toward pornography ($n = 7$) measured the degree to which participants perceived pornography as immoral (e.g., "*Viewing pornography violates my personal morals," and "Viewing pornography defiles me.*").

For the Positive Attitudes scale, participants were asked to respond to each item using a rating scale from 1 (*not at all*) to 7 (*completely*). For the Negative Attitudes scale, participants were asked to respond to each item ranging from 1 (*Strongly Disagree)* to 7 *(Strongly Agree).* For both subscales, scores were added together and ranged from 4 to 28 for the Positive Attitudes subscale where higher scores indicated beliefs that viewing pornography was normal and morally acceptable. For the Negative Attitudes subscale, scores ranged from 7 to 49 where higher scores indicated beliefs that viewing pornography was immoral and violated religious beliefs. This scale was initially used among a sample of over 4,000 college students in the Midwestern United States, with the average age of participants

being 19 years old. Reliability for the first subscale was high ($\alpha = .90$) and similarly for the second subscale ($\alpha = .96$). Given that these scales were created to be used in the original study by Rasmussen and colleagues (2018), validity evidence had not been further assessed by other studies. However, it was found in the original study that the Positive Attitudes scale significantly and positively correlated with exposure to pornography, use of pornography over the previous 6 months, and perceived positive consequences of pornography use.

The Positive Attitudes scale was also significantly and negatively correlated with negative attitudes toward pornography, perceptions of pornography addiction, and perceived negative consequences of pornography use (Rasmussen et al., 2018). Similarly, the Negative Attitudes scale was found to be significantly and positively correlated with perceived pornography addiction and perceived negative consequences of pornography use. This same Negative Attitudes scale was also found to be significantly and negatively correlated with pornography use over the previous 6 months and perceived positive consequences of pornography consumption. To restate, given the recent creation of these scales and no further validity assessments regarding them, these correlative findings in the original study would suggest that scores on both the Positive and Negative Attitudes scales hold validity in actually measuring attitudes towards pornography. Reliability for the current study was high for both scales (.90 for PPA and .91 for NPA).

Pornography consumption. Pornography use was assessed in a manner consistent with prior research on pornography use and consumption (see Rasmussen et al., 2018; Leonhardt et al., 2018; Poulsen et al., 2013; Willoughby et al., 2016; Daneback et al., 2009; Lambert et al., 2012; Perry, 2017; Carroll et al., 2017). Specifically, pornography use was assessed with a general question about pornography use: "*Within the past 6 months, how*

many times have you viewed pornography?" Participants were asked to respond by choosing from the following 7 response options: (1) Never; (2) Almost Never; (3) Less than Once a Month; (4) 1–3 Times Per Month; (5) 1–2 Times Per Week; (6) 3–4 Times Per Week; (7) About Once a Day; (8) More than Once a Day. In addition, participants were asked to estimate the number of hours they used pornography throughout an average week and were provided an open-text box to fill in the number of hours.

Depression and anxiety. Depression and anxiety were assessed with the Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995), which is a screening tool commonly used in community settings to assess symptoms of depression, anxiety, and stress (Tran et al., 2013). The DASS-21 was created as an abbreviated 21-item version of the original 42 item measure (Lovibond & Lovibond, 1993) and consists of three subscales: Depression (e.g., "*I felt that life was meaningless*"), Anxiety (e.g., "*I felt I was close to panic*"), and Stress (e.g., "*I found it difficult to relax*"); however, for the purpose of the current study, only the Depression and Anxiety subscales were used. Participants were asked to indicate how much each statement on the questionnaire applied to them over the past week, with responses for all three subscales ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much or most of the time*). Higher scores indicated higher levels of depression and anxiety respective to each subscale. Each subscale consisted of 7 items and was scored by summing the responses for each (from 0 to 21) and then multiplying by 2. In the original measure, different cutoff levels are used to indicate the level of severity for each subscale (severity levels include normal, mild, moderate, severe, and extremely severe). For example, normal severity levels are scores from 0-9 for depression and 0-7 for anxiety; extremely severe levels are scores of 28 or higher for depression and 20 or higher for anxiety

Scores on the DASS-21 have been found to possess impressive psychometric properties for large samples drawn from general adult populations aged 15 to 91 years old (Crawford & Henry, 2003). Subscale scores for the DASS-21 have demonstrated acceptable estimates of reliability (.94 for depression, .87 for anxiety) in a nonclinical sample of adults (Antony et al., 1998). The DASS-21 was found to be an excellent measure to assess features of depression, hyperarousal, and tension in nonclinical groups (Antony et al., 1998). Further, the DASS-21 appears to have several advantages compared to the 42-item version in that it includes fewer items, has a cleaner factor structure, and has smaller interfactor correlations (Antony et al., 1998).

Satisfaction with life. Life satisfaction was assessed with the Satisfaction With Life Scale (SWLS; Diener et al., 1985). This scale was developed to provide an overall judgment of a person's life in order to assess life satisfaction (Diener et al., 1985). The SWLS has 5 items (e.g., "*In most ways my life is close to my ideal*"). Participants responded to each item on a scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Total scores were summed and ranged from 5 to 35, where lower scores indicated lower levels of satisfaction with life, and vice versa for higher scores.

The SWLS has proven to have good reliability and validity scores. When initially created, the Cronbach's alpha was .87 and the 2-month test-retest correlation coefficient was .82 among a sample of participants ranging from college students to 75-year-old retirees, where approximately half of participants were men (Diener et al., 1985). Later testing for reliability resulted in test-retest reliabilities that ranged from .83 (2 weeks) to .54 (4 years); alpha coefficients have ranged from .79 to .89 (Pavot & Diener 1993; Pavot et al., 1991). It is now one of the most frequently used instruments for measuring life satisfaction (Silva et al.,

2015) and its utility for research purposes has been emphasized (Pavot &

Diener 1993; 2008). Further, it has been found to correlate well with differing psychological

variables and has been subjected to multiple cross-cultural comparisons (Pavot & Diener,

2003). The SWLS has been found to have good divergent validity for constructs such as

anxiety, depression, and psychological distress (Pavot & Diener, 2008), as well as convergent

validity with other measures concerning subjective well-being (Pavot & Diener, 2009). It has

been found to be well suited for use with a wide range of participants, including men (Pavot

et al., 1991).

Religiosity. Religiosity (defined by involvement in congregational life and/or the

prominence of everyday thoughts, feelings, and behaviors related to religious/spiritual

beliefs; King & Hunt, 1975; Exline et al., 2000) was measured by combining items from two

different measures that have been used in tandem with each other in previous studies

regarding pornography use and religiosity (e.g., Exline et al., 2000; Rasmussen et al., 2018),

totaling 9 items. Multiple studies regarding pornography use and religiosity have utilized the

same or very similar items to the Blaine and Crocker (1995) measure described below to

assess for the importance of religion in people's lives (e.g., Wilt et al., 2016; Grubbs et al.,

2015; MacInnis & Hodson, 2016), whereas others have used items that assess religiosity

more in terms of behavior, such as frequency of religious service attendance and/or prayer

(e.g., Rasmussen & Kohut, 2019; Perry, 2018; Perry & Snawder, 2017; Leonhardt et al.,

2018). To my knowledge, fewer studies have assessed religiosity in this way, which is what

was done with this study in the attempt to gain a more comprehensive understanding of the

role of religiosity in participants' lives. This assessment strategy has been done and

successfully used in prior studies (e.g., Exline et al., 2011; Grubbs et al., 2015). To ensure

that the appropriate items loaded on the expected constructs of religiosity, I also conducted an exploratory factor analysis on both religiosity subscales.

The first three items come from Blaine and Crocker's (1995) measure that assesses religious belief salience and were modified (from King and Hunt's [1975] Religiosity Salience-Cognition scale) to include spirituality in addition to religiosity (*"Being a religious or spiritual person is important to me," "My religious or spiritual beliefs provide meaning and purpose to my life," and "My religious or spiritual beliefs are what lie behind my whole approach to life."*). These first three items are rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores ranged from 3 to 21. Higher scores indicated a stronger salience of religion and/or spirituality in an individual's life.

The other six items came from an abbreviated version of the questionnaire used by Exline et al. (2000), which assesses behavioral participation in religious activities. The items and permission for their use were given by Dr. Exline. These items asked about the number of times that someone has participated in certain religious activities over the previous month (e.g., prayer, reading sacred texts, attending religious services). Responses ranged from 1 (*not at all)* to 6 *(more than once a day)*. Scores ranged from 6 to 36. Higher scores indicated higher levels of behavioral participation with religious and/or spiritual activities. To assess religiosity as a whole, I averaged individual scores and standardized the items from both sets of items in order to aggregate all 9 items into a single index of religiosity.

The Cronbach's alpha for the first 3 items mentioned for this scale was .96 in a sample by Exline et al. (2000). As reported by these authors (Exline et al., 2000), the first 3 items from Blaine and Crocker's (1995) measure of religious belief salience came from two other well-validated measures (King and Hunt's Religiosity Salience-Cognition scale, 1975,

and Allport and Ross' Intrinsic subscale of the Religious Orientation Scale, 1967). The second set of items that measured behavioral religious/spiritual participation were also found to have high reliability ($\alpha = .91$; Rasmussen et al., 2018). In a conversation with Dr. Exline, the abbreviated version of this questionnaire that was utilized for this study had not had official validation testing completed on it as a single instrument, but she reported that it has been used for years in her studies, has high internal consistency, and correlates very highly with the religious belief salience items from Blaine and Crocker (1995). At Dr. Exline's suggestion, I conducted an exploratory factor analysis to ensure that a total score for religiosity was appropriate to use.

Social desirability. Social desirability was assessed with the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). A primary use of the Marlowe-Crowne scale is to assess the impact of social desirability on measures of self-report (Reynolds, 1982) and has been found to accurately identify individuals who engage in impression management or dishonest behavior (Lambert, Arbuckle, & Holden, 2016). The original scale consisted of 33 items, but a shortened form (n = 13) has been developed and has compared favorably with the reliability of the original scale (Reynolds, 1982). I utilized this 13-item scale for the present study (e.g., *"I'm always willing to admit it when I make a mistake," "I am always courteous, even to people who are disagreeable,"* and *"I have never deliberately said something that hurt someone's feelings"*; Reynolds, 1982).

The 13-item short form of the Marlowe-Crowne Social Desirability Scale had good reliability (.76) with a sample of college students ranging in age from 17 to 54 years, with approximately 40% of them being men (Reynolds, 1982). Reynolds (1982) examined concurrent validity of the 13-item short-form via correlations between six total shortened

versions of the Marlowe-Crowne scale, each with differing numbers of items. He found that the 13-item version correlated most highly with the standard 33-item Marlowe-Crowne scale. Concurrent validity for the short form scale was assessed via product-moment correlation coefficients with the standard 33-item scale as well as the Edwards Social Desirability Scale (Edwards, 1957) and was found to be significant for both (Reynolds, 1982). In summary, the 13-item form has been recommended as a viable short form for assessing social desirability response tendencies (Reynolds, 1982) and similar findings suggest that this measure is psychometrically sound in more recent, similar

samples (Ventimiglia & MacDonald, 2012; Vésteinsdóttir et al., 2017).

Political affiliation. In the initial phases of planning the present study, it was first proposed that political affiliation would be measured similar to previous studies, where participants were asked to identify as either democrat/liberal, republican/conservative, or independent/other (e.g., Frutos & Merrill, 2017). Upon further discussion by the current dissertation committee of how to assess this concept, it was discussed and agreed that three items would be used to measure political affiliation by asking participants to identify their political leanings (Democrat, Other, or Republican), ideological leanings (Liberal, Independent, or Conservative), and their philosophical leanings (Authoritarian or Libertarian).

Demographic information. In order to provide more descriptive information about my sample, the final section of the survey asked participants several basic demographic questions: age; race/ethnicity; sexual orientation; relationship status (single, married, in a relationship); education level; and if they had ever attended counseling services as a result of their pornography use.

CHAPTER 4

RESULTS

Data Screening

Initially, 843 responses were received from participants who accessed the online

survey. Of the 843 responses, a total of 423 were not used for analyses. Among these, 422

were excluded due to not meeting at least one of the eligibility requirements (e.g., English

speaking man, age 18 or older, and lived in the United States for at least 10 years), and 1 was

deleted as a result of not answering a large number of items for a particular questionnaire. It

is important to note that after the informed consent was shown on the online survey, the

second webpage asked participants to answer questions that screened for eligibility. If

participants answered any of the eligibility questions incorrectly, they were automatically

exited from the survey and were not able to answer further survey items. The 422

participants' data who did not meet eligibility requirements were stored in the Qualtrics data,

but were excluded immediately from consideration for analyses. Among the 423 responses

not utilized, 395 responses were excluded because the participants identified as women or

trans women, where only those who identified as men or trans men were eligible to

participate in the study. Further, 3 respondents were omitted as they indicated that they were

not English speaking, which was required. Another 24 cases were deleted because they

indicated that they had not been U.S. citizens for at least 10 years. Lastly, 1 case was deleted

because only 2 of the 13 items for the Social Desirability scale were completed. After

excluding and deleting all of these cases (423 in total), there were 420 responses used for

analyses. A missing values analysis was conducted and no remaining cases were missing

more than 1% of the data for any single item. To address this small percentage of missing

data, the mean was calculated to score each scale rather than the sum (with several added steps for the religiosity index scale, as described below in the description regarding the EFA for the religiosity index.). In other words, mean imputation was utilized to account for the small amount of missing data. All sample characteristics are presented in Table 1.

Data screening indicated that distributions for all variables were normal (e.g., both question for pornography use, religiosity, social desirability, negative pornography attitudes, positive pornography attitudes, satisfaction with life, depression, and anxiety). In particular, Little's MCAR test was statistically significant (X^2 = 1806.62, df = 1638, p = .002), indicating that any missing data were potentially missing in a systematic fashion, or not at random. However, the normality of the residuals for each regression analysis appeared normal, based on examinations of the histograms and scatter plots of each regression. In addition to the extremely low percentage of missing values previously mentioned, these results indicate a high likelihood that any missing data were actually missing completely at random, and therefore no imputation was needed. Histograms, skewness, and kurtosis scores were generated for all variables and found to be within normal limits. Calculated Z-scores did not show any univariate outliers above the |3.29| cutoff. The calculated Mahalanobis D score also indicated no multivariate outliers. Bivariate scatter plots for each pair of variables indicated no violations of homoscedasticity. Most of the bivariate correlations between each predictor and outcome variable were significant (see Table 2).

Table 2

Bivariate Correlations, Means, SD, Skewness, and Kurtosis of Study Variables (N = 420)

	1	2	3	4	5	6	7	8	9	10
1. Past 6 months Use										
2. Average Weekly Use	.28†									
3. Religiosity	-.28†	.10*								
4. PPA	.47†	.12*	-.33†							
5. NPA	.25†	-.07	-.54†	.51†						
6. Life Satisfaction	-.08	.03	.39†	.04	-.20†					
7. Anxiety	-.10*	.26†	.54†	.03	-.27†	.18†				
8. Depression	-.05	.27†	.48†	.10	-.21†	.04	.88†			
9. Social Desirability	-.10	-.05	.02	-.15†	.02	.17†	-.19†	-.24†		
10. Sought Therapy?	-.03	-.37†	-.34†	-.12*	.17†	-.16†	-.55	-.55†	.14†	
Chronbach's Alpha	--	--	.95	.90	.91	.87	.92	.94	.63	
Minimum	1	0	-1	1	1	1	1	1	0	1
Maximum	8	28	2	7	7	7	4	4	1	3
Mean	4.78	3.32	0	5.09	4.44	4.74	1.94	2.04	.48	1.78
SD	1.76	4.45	.95	1.55	1.63	1.35	.88	.91	.21	.88
Skewness	-.25	2.94	-.28	-.71	-.16	-.73	.43	.29	.12	.45
Kurtosis	-.49	9.98	-1.18	-.12	-.89	-.01	-1.23	-1.30	-.21	-1.57

Note. PPA = Positive Pornography Attitudes Scale. NPA = Negative Pornography Attitudes Scale.
*p < .05. †p < .01.

Preliminary Results

EFA. The two scales utilized to measure religiosity had been used together in previous studies (e.g., Exline et al., 2000), but no analyses had been published regarding formal validation. In order to calculate a single religiosity index score from the 9 items used, I standardized the total summed score for both the religious/spiritual beliefs salience score (3 items) as well as the religious/spiritual participation score (6 items), thus creating a variable that had a Z score with a mean of 0 and a standard deviation of 1 (*n* = 420). I then calculated the mean of those two Z scores to create a single religiosity index score.

To ensure that the appropriate items loaded on the expected constructs of religiosity, an exploratory factor analysis (EFA) was conducted with the principle axis factoring method for both religiosity subscales. The results indicated that the two subscales used together had sufficient construct validity. No correlations between individual items were above .80, meaning there was no concern of issues with multicollinearity among the individual items. The Kaiser-Meyer-Olkin measure of sampling adequacy for assessment of the items' suitability for analysis was .94, which is significantly above an acceptable cut off level for further factor analysis (Kim & Mueller, 1978). Bartlett's test of sphericity was also acceptable ($X^2 = 3821.92$, $df = 36$, $p<.001$; Pett, Lackey, & Sullivan, 2003). The scree plot resulting from this EFA showed that only one factor with an Eigenvalue of 1 or higher, where the total variance explained by this one factor was 73.63%. Overall, the results from the EFA indicate that these items together represent one factor and that the items were appropriate to use as one construct of religiosity in further analyses.

Group differences. MANOVAs were used to assess mean differences in the variables of interest according to participants' political leanings, race/ethnicity, sexual orientation, and education level. Since MANOVAs require having more cases per cell than dependent variables (Tabachnick et al., 2007), the sample size for each subgroup was assessed to see if certain subgroups of the aforementioned demographic variables needed to be restricted in comparing them to other variables. However, no such sample sizes were found, meaning that the number of groups for each demographic item was not lower than the number of cases within each subgroup. Results revealed significant multivariate effects for sexual orientation, $F(9, 411)= 2.30$, $p=.015$, Pillai's Trace=.06. Post-hoc tests revealed that bisexual participants (M=2.68, SD=.80) showed higher levels of depression than heterosexual

participants ($M =1.97$, $SD=.91$), and that gay participants ($M =1.95$, $SD=.59$) reported higher depression levels than heterosexual participants.

The current study aimed to obtain a more thorough measurement of political affiliation by assessing political leanings (Democrat, Other, or Republican), ideological leanings (Liberal, Independent, or Conservative), and philosophical leanings (Authoritarian or Libertarian) compared to previous studies that typically assessed political affiliation with one item asking participants to identify as either democrat/liberal, republican/conservative, or independent/other (e.g., Frutos & Merrill, 2017). Although it was hoped to obtain significance in findings related to pornography use and political affiliation as an interest area of exploration based on a few previous studies that assessed political affiliation (e.g., Frutos & Merrill, 2017; Yang, 2016), no significant differences were found between groups with any of the three items used in the current study regarding political affiliation.

Correlations. Correlations were conducted between study variables of interest. Significant relationships were found between negative attitudes toward pornography and depression ($r = -.18$, $p < .01$), anxiety ($r = -.22$, $p < .01$), and life satisfaction ($r = -.19$, $p < .01$); pornography use over the past 6 months and anxiety ($r = -.10$, $p < .05$); and average weekly pornography use and depression ($r = .27$, $p < .01$) and anxiety ($r = .26$, $p < .01$). The correlations between predictor and outcome variables that were not significant were between pornography use over the past 6 months and depression ($r = -.05$, $p > .05$) and life satisfaction ($r = -.08$, $p > .05$); as well as average weekly pornography use and life satisfaction ($r = .03$, $p > .05$).

Primary Results

      Hypothesis 1a. Hypothesis 1a proposed that negative pornography attitudes would significantly and positively correlate with depression and anxiety scores, and negatively correlate with life satisfaction. The bivariate correlations between NPA and depression scores were significant and negative ($r = -.21$, $p < .001$), as they were with anxiety scores ($r = -.27$, $p < .001$), indicating that participants who reported more negative attitudes toward pornography also reported higher depression and anxiety scores. Therefore, the hypothesis that NPA would have a significant and positive correlation with depression and anxiety was not supported. In addition, NPA was significantly and negatively related to satisfaction with life scores ($r = -.20$, $p < .001$). Overall, hypothesis 1a was partially supported.

      Hypothesis 1b. Hypothesis 1b proposed that pornography use (i.e., over past 6 months and average weekly hourly use) would significantly and positively correlate with depression and anxiety scores, and negatively correlate with life satisfaction scores. The bivariate correlation between pornography use over the past 6 months and depression scores was not significant ($r = .05$, $p = .30$), but pornography use over the past 6 months was negatively significant with anxiety score ($r = -.10$, $p = .04$). Pornography use over the past 6 months was not significantly correlated with satisfaction with life scores ($r = .08$, $p = .12$). This negative correlation between pornography use over the past 6 months and anxiety indicates that participants who reported higher amounts of viewing pornography in the past 6 months reported lower levels of anxiety, which was contrary to the original hypothesis. The bivariate correlations between average weekly pornography use and depression scores ($r = .27$, $p < .001$) and anxiety scores ($r = .26$, $p < .001$) were both positively significant, but average weekly use was not significantly correlated with satisfaction with life scores ($r = .03$,

p = .61). These findings suggest that participants who reported higher averages of weekly pornography use also reported higher levels of depression and anxiety, partially supporting hypothesis 1b. The lack of a significant correlation between pornography use over the past 6 months with depression and life satisfaction does not support hypothesis 1b, nor does the negative correlation between pornography use over the past 6 months and anxiety. However, support of the hypothesis was found when examining the average weekly pornography use as it relates to the psychological outcomes of depression and anxiety.

Given that a separate regression was run for each psychological outcome (3 total for each hypothesis), a Bonferroni correction was applied when examining all related statistical regression results below in order to decrease the chance of a type 1 error occurring (*p* =.017). Also, from this point going forward, only standardized results will be reported. Information regarding the unstandardized coefficients and other results can be found in the indicated tables.

Hypothesis 2a. Hypothesis 2a proposed that when controlling for social desirability, negative pornography attitudes would significantly relate to the three separate outcomes of depression, anxiety, and life satisfaction scores. For this hypothesis, as well as any further hypothesis and research questions that involved running a separate regression model for each outcome variable, a Bonferroni correction was utilized to account for multiple analyses being conducted.

First, with depression scores as the outcome variable, social desirability was entered in step 1 of the hierarchical regression, followed by NPA in step 2. Step 1 accounted for a significant degree of variance in depression, $F(1, 418) = 26.03$, $p<.001$, $R^2 = .06$, such that social desirability was negatively related to depression, $\beta= -.24$ $t(418) = -5.10$, $p<.001$, $pr^2 =$

.06. Step 2 included NPA scores, which also accounted for a significant degree of variance in depression scores above and beyond social desirability, $F(1, 417) = 23.48$, $p < .001$, $\Delta R^2 = .043$. In Step 2, negative pornography attitudes were significantly related to depression, $\beta = -.21$ $t(417) = -4.45$, $p<.001$, $pr^2 = .05$. These findings support hypothesis 2a such that, when controlling for social desirability, NPA significantly related to depression scores.

With anxiety scores as the outcome variable, social desirability and pornography use over the past 6 months were entered in the first step of the hierarchical regression as covariates, followed by NPA scores into Step 2. Step 1 accounted for a significant degree of variance in anxiety scores, $F(2, 417) = 11.01$, $p<.001$, $R^2 = .05$, such that social desirability was negatively related to anxiety, $\beta = -.20$, $t(417) = -4.20$, $p<.001$, $pr^2 = .04$; as was pornography use over the past 6 months, $\beta = -.12$, $t(417) = -2.48$, $p=.01$, $pr^2 = .01$. Step 2 also accounted for an added significant degree of variance in anxiety, $F(1, 416) = 17.26$, $p < .001$, $\Delta R^2 = .061$, such that negative pornography attitudes was negatively related to anxiety, $\beta = -.25$, $t(416) = -4.20$, $p<.001$, $pr^2 = .06$. These findings support hypothesis 2a in that NPA was significantly related to anxiety scores. as it relates to anxiety.

The final analysis for hypothesis 2a examined the relationship between NPA with satisfaction with life scores after controlling for social desirability. Step 1 accounted for a significant degree of variance in satisfaction with life scores, $F(1, 418) = 12.56$, $p<.001$, $R^2 = .03$, such that social desirability was positively related to satisfaction with life, $\beta = .17$, $t(418) = 3.54$, $p<.001$, $pr^2 = .03$. Step 2 accounted for an added significant degree of variance in life satisfaction, $F(1, 417) = 15.86$, $p < .001$, $\Delta R^2 = .042$, such that NPA was negatively related to satisfaction with life, $\beta = -.20$, $t(417) = -4.32$, $p<.001$, $pr^2 = .04$. In summary, all of the analyses supported all three parts of hypothesis 2a such that negative pornography attitudes

would significantly relate to depression, anxiety, and life satisfaction scores. (Other

information for statistical results related to hypothesis 2a can be found in Tables 3 a, b, and

c.)

Table 3a (Hypothesis 2a)

Hierarchical Regression Coefficients for Social Desirability and Negative Pornography Attitudes as related to Depression (N = 420).

	Depression				
	B	SE	β	sr^2	ΔR^2
Step 1					
Social Desirability	-1.05***	.21	-.24	.06	
					.06***
Step 2					
Social Desirability	-1.04***	..20	-.24	.06	
NPA	.-.12***	.03	-.21	.05	
					.04***

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Table 3b (Hypothesis 2a)

Hierarchical Regression Coefficients for Social Desirability, Past 6 month Pornography Use, and Negative Pornography Attitudes as related to Anxiety (N = 420).

	Anxiety				
	B	SE	β	sr^2	ΔR^2
Step 1					
Social Desirability	-.85***	.20	-.20	.04	
Past 6 month Use	-.06*	.02	-.12	.01	
					.05***
Step 2					
Social Desirability	-.80***	.20	-.19	.04	
Past 6 month Use	-.03	.02	-.05	.003	
NPA	-.14***	.03	-.25	.06	
					.06***

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Table 3c (Hypothesis 2a)

Hierarchical Regression Coefficients for Social Desirability and Negative Pornography Attitudes as related to Life Satisfaction (N = 420).

	Life Satisfaction				
	B	SE	β	sr^2	ΔR^2
Step 1					
Social Desirability	1.12***	.31	.17	.03	
					.03***
Step 2					
Social Desirability	1.13***	.31	.18	.03	
NPA	-.17***	.04	-.20	.04	
					.04***

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Hypothesis 2b. Hypothesis 2b proposed that higher reports of pornography use/consumption would contribute to a significant degree of variance in depression, anxiety, and life satisfaction levels above and beyond NPA. For the separate regression analyses conducted with depression, anxiety, and life satisfaction as outcomes for hypothesis 2b, social desirability was entered in Step 1 as a covariate for each regression.

First, with depression scores as the outcome variable, NPA scores were entered into Step 2 followed by both pornography use scores (e.g., use over past 6 months and average weekly use) in Step 3. Results of Step 1 revealed that social desirability accounted for a significant degree of variance in depression scores, $F(1, 417) = 26.48$, $p<.001$, $R^2 = .06$, such that social desirability was negatively related to depression, $\beta= -.24$, $t(417) = -5.15$, $p<.001$, $pr^2 = .06$. Step 2 indicated that NPA accounted for an added significant degree of variance above and beyond social desirability with depression as the outcome, $F(1, 416) = 23.81$, $p < .001$, $\Delta R^2 = .043$, such that NPA was also negatively related to depression, $\beta= -.21$, $t(416) = -4.47$, $p<.001$, $pr^2 = .05$.. Step 3 that added pornography use also accounted for an additional significant degree of variance in depression, $F(2, 414) = 21.68$, $p<.001$, $\Delta R^2 = .071$. A look at the coefficients revealed that average weekly pornography use was positively related to depression, $\beta= .28$, $t(414) = 5.92$, $p<.001$, $pr^2 = .08$. Pornography use over the past 6 months was close to being significantly related to depression, but was not due to missing the cut off for the Bonferroni correction ($p=.025$). These findings indicate that those who reported higher average weekly amounts of pornography also reported higher levels of depression, supporting hypothesis 2b that pornography use would significantly relate to depression above and beyond NPA.

Anxiety scores were the outcome variable in the next regression, with the same variables entered for steps 2 and 3 as before (e.g., NPA in Step 2 and both scores for pornography use in Step 3). Step 1 accounted for a significant degree of variance in anxiety scores, $F(1, 417) = 16.17$, $p<.001$, $R^2 = .04$, such that social desirability was negatively related to anxiety, $\beta= -.19$, $t(417) = -4.02$, $p<.001$, $pr^2 = .04$. Step 2 that included NPA accounted for an added significant degree of variance in anxiety, $F(1, 416) = 25.66$, $p < .001$, $\Delta R^2 = .073$, such that NPA was negatively related to anxiety, $\beta= -.27$, $t(416) = -5.82$, $p<.001$, $pr^2 = .08$. Step 3 that added pornography use also accounted for an added significant degree of variance in anxiety, $F(2, 414) = 22.53$, $p<.001$, $\Delta R^2 = .069$. Specifically, average weekly pornography use was positively related to anxiety $\beta= .27$, $t(414) = 5.79$, $p<.001$, $pr^2 = .08$; whereas pornography use over the past 6 months was negatively related to anxiety, $\beta= -.14$, $t(414) = -2.84$, $p=.005$, $pr^2 = .02$. Similar to the findings related to depression and pornography use, this finding indicates that participants who reported higher average weekly amounts of pornography use also reported higher levels of anxiety, which also supports hypothesis 2b.

With satisfaction with life scores as the outcome variable and the same steps as before (e.g., NPA in Step 2 and both scores for pornography use in Step 3), Step 1 accounted for a significant degree of variance in life satisfaction, $F(1, 417) = 12.77$, $p<.001$, $R^2 = .03$, such that social desirability was significantly and positively related to life satisfaction, $\beta= .17$, $t(417) = 3.57$, $p<.001$, $pr^2 = .03$. Step 2 that included NPA also accounted for an added significant degree of variance in life satisfaction, $F(1, 416) = 15.91$, $p < .001$, $\Delta R^2 = .041$ such that NPA was negatively related to life satisfaction, $\beta= -.20$, $t(416) = -4.30$, $p<.001$, $pr^2 = .04$. However, Step 3 did not account for an added significant degree of variance in life

satisfaction, $F(2, 414) = 8.00$, $p = .862$, $\Delta R^2 = .001$, indicating that the two forms of

pornography use were not related to life satisfaction. In contrast to the results of the previous

two analyses (with depression and anxiety as outcome variables), pornography use did not

contribute a significant degree of incremental variance in life satisfaction scores and

therefore, the results do not support hypothesis 2b. (Other information for statistical results

related to hypothesis 2b can be found in Tables 4 a, b, and c.)

Table 4a (Hypothesis 2b)

Hierarchical Regression Coefficients for Social Desirability, Negative Pornography Attitudes, and Pornography Use as related to Depression (N = 420).

	Depression				
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	-1.06***	.21	-.24	.06	
					.06***
Step 2					
Social Desirability	-1.05***	.20	-.24	.246	
NPA	-.12***	.03	-.21	.05	
					.04***
Step 3					
Social Desirability	-1.03***	.20	-.24	.06	
NPA	-.09**	.03	-.16	.03	
Past 6 month Porn Use	-.06*	.03	-.11	.01	
Average Weekly Use	.06***	.01	.28	.08	
					.07***

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Table 4b (Hypothesis 2b)

Hierarchical Regression Coefficients for Social Desirability, Negative Pornography Attitudes, and Pornography Use as related to Anxiety (N = 420).

	Anxiety				
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	-.81***	.20	-.19	.04	
					.04***
Step 2					
Social Desirability	-.79***	.19	-.19	.04	
NPA	-.14***	.03	-.27	.08	
					.07***
Step 3					
Social Desirability	-.79***	.19	-.19	.04	
NPA	-.12***	.03	-.22	.05	
Past 6 month Porn Use	-.07**	.02	-.14	.02	
Average Weekly Use	.05***	.01	.27	.08	
					.07***

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Table 4c (Hypothesis 2b)

Hierarchical Regression Coefficients for Social Desirability, Negative Pornography Attitudes, and Pornography Use as related to Life Satisfaction (N = 420).

	B	SE	B	sr^2	ΔR^2
			Life Satisfaction		
Step 1					
Social Desirability	1.12***	.31	.17	.03	
					.03***
Step 2					
Social Desirability	1.14***	.31	.18	.03	
NPA	-.17***	.04	-.20	.04	
					.04***
Step 3					
Social Desirability	1.14***	.31	.18	.03	
NPA	-.16***	.04	-.20	.04	
Past 6 month Porn Use	-.01	.04	-.02	.0001	
Average Weekly Use	.01	.02	.03	.001	
					.001

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Hypothesis 3. Hypothesis 3 proposed that religiosity would moderate the relationship between NPA and the three outcome variables of depression, anxiety, and life satisfaction. Three separate regression models were tested for each outcome. The same variables were entered as the same steps in each of the three regressions as follows. In Step 1, the following variables were entered as covariates: social desirability, pornography use over the past 6 months, and average weekly pornography use. Step 2 included NPA and religiosity, followed by the interaction term of NPA x Religiosity in Step 3 to test for the hypothesized moderator effect (Frazier et al., 2004).

With depression scores as the outcome variable, Step 1 accounted for a significant degree of variance in depression, $F(2, 416) = 30.29$, p<.001, $R^2 = .13$, such that average

weekly pornography use was positively related to depression, β= .26, t(416) = 5.67, p<.001, pr^2 = .07; whereas social desirability was negatively related to depression, β= -.23, t(416) = -5.04, p<.001, pr^2 = .06. Step 2, which included NPA and religiosity, accounted for a significant degree of variance in depression, $F(2, 414)$ = 53.39, p<.001, ΔR^2 = .213; however, only religiosity was significantly (and positively) related to depression, β= .50, t(414) = 10.54, p<.001, pr^2 = .21. Results of Step 3, which added the interaction term of NPA x Religiosity, did not account for any additional variance in depression scores (due to the Bonferroni correction cut off), $F(1, 413)$ = 43.89, p = .040, ΔR^2 = .007. These findings indicate that religiosity did not have a significant moderating effect on depression as an outcome variable, thus not supporting hypothesis 3.

With anxiety scores as the outcome variable, results of step 1 accounted for a significant degree of variance in anxiety, $F(3, 415)$ = 21.84, p<.001, R^2 = .14. All three covariates accounted for a significant degree of variance in anxiety, such that average weekly pornography use, β= .30, t(415) = 6.40, p<.001, pr^2 = .09 was positively related to anxiety; whereas pornography use over the past 6 months, β= -.20, t(415) = -4.24, p<.001, pr^2 = .04, and social desirability, β= -.20, t(415) = -4.29, p<.001, pr^2 = .04, were negatively related to anxiety. The addition of NPA and religiosity in Step 2 also resulted in a significant degree of variance in anxiety, $F(2, 413)$ = 49.37, p<.001, ΔR^2 = .24, such that religiosity was positively significantly related to anxiety, β= .54, t(413) = 11.35, p<.001, pr^2 = .24. Step 3, which added the interaction term of NPA x Religiosity, did not account for a significant degree of variance in anxiety, $F(1, 412)$ = 41.71, p = .115, ΔR^2 = .004. Similar to the findings regarding depression, religiosity did not moderate the relationship between NPA and anxiety, thus not supporting hypothesis 3.

The final regression for hypothesis 3 proposed that religiosity would moderate the relationship between NPA and life satisfaction. With life satisfaction scores as the outcome variable, Step 1 accounted for a significant degree of variance in life satisfaction, $F(1, 418) = 12.56$, $p<.001$, $R^2 = .03$. In particular, social desirability was significantly related to life satisfaction, $\beta= .17$, $t(418) = 3.54$, $p<.001$, $pr^2 = .03$. Step 2 also accounted for a significant degree of variance in life satisfaction, $F(2, 416) = 29.63$, $p < .001$, $\Delta R^2 = .147$, such that religiosity was positively related to anxiety, $\beta= .39$, $t(416) = 7.29$, $p<.001$, $pr^2 = .11$. Step 3 which included the interaction term of NPA x Religiosity also accounted for a significant degree of variance in life satisfaction, $F(1, 415) = 25.13$, $p=.002$, $\Delta R^2 = .019$, such that the interaction was significantly and negatively related to life satisfaction $\beta= -.14$, $t(415) = -3.12$, $p=.002$, $pr^2 = .02$. The findings of this third step indicated that religiosity did have a significant moderating effect on the relationship between NPA and life satisfaction levels. (Other information for statistical results related to hypothesis 2b can be found in Tables 5 a, b, and c.)

Table 5a (Hypothesis 3)

Hierarchical Regression Coefficients for Pornography Use, Social Desirability, NPA, Religiosity, and the Interaction (NPA x Religiosity) as related to Depression (N = 420).

	Depression				
	B	SE	B	sr^2	ΔR^2
Step 1					
Average weekly Use	.05***	.01	.26	.07	
Social Desirability	-1.01***	.20	-.23	.06	
					.13***
Step 2					
Average Weekly Use	.04***	.01	.21	.06	
Social Desirability	-1.06***	.17	-.24	.08	
NPA (c)	.05	.03	.08	.01	
Religiosity (c)	.48***	.05	.50	.22	
					.21***
Step 3					
Average Weekly Use	.04***	.01	.22	.07	
Social Desirability	-1.06***	.17	-.24	.08	
NPA (c)	.04	.03	.08	.01	
Religiosity (c)	.46***	.05	.48	.19	
NPA x Religiosity (c)	.05*	.02	.09	.01	
					.01*

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale.
(c) = Mean-centered.
*p < .05, ** p < .01, *** p < .001.

Table 5b (Hypothesis 3)

Hierarchical Regression Coefficients for Pornography Use, Social Desirability, NPA, Religiosity, and the Interaction (NPA x Religiosity) as related to Anxiety (N = 420).

	Anxiety				
	B	SE	B	sr^2	ΔR^2
Step 1					
Average Weekly Use	.06***	.01	.30	.09	
Past 6 Month Use	-.10***	.02	-.20	.04	
Social Desirability	-.83***	.19	-.20	.04	
					.14***
Step 2					
Average Weekly Use	.04***	.01	.21	.06	
Past 6 Month Use	-.02	.02	-.03	.001	
Social Desirability	-.82***	.17	-.20	.06	
NPA (c)	.03	.03	.05	.003	
Religiosity (c)	.50***	.04	.54	.24	
					.24***
Step 3					
Average Weekly Use	.04***	.01	.21	.06	
Past 6 Month Use	-.02	.02	-.03	.001	
Social Desirability	-.82***	.16	-.20	.06	
NPA (c)	.02	.03	.04	.002	
Religiosity (c)	.78***	.05	.52	.22	
NPA x Religiosity (c)	.03	.02	.06	.01	
					.004

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale.
(c) = Mean-centered.
*p < .05, ** p < .01, *** p < .001.

Table 5c (Hypothesis 3)

Hierarchical Regression Coefficients for Pornography Use, Social Desirability, NPA, Religiosity, and the Interaction (NPA x Religiosity) as related to Life Satisfaction (N = 420).

			Life Satisfaction		
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	1.12***	.31	.17	.03	
					.03***
Step 2					
Social Desirability	1.07***	.29	.17	.03	
NPA (c)	.01	.04	.01	.01	
Religiosity (c)	.55***	.08	.39	.11	
					.15***
Step 3					
Social Desirability	1.09***	.29	.17	.03	
NPA (c)	.01	.04	.02	.0003	
Religiosity (c)	.61***	.08	.43	.13	
NPA x Religiosity (c)	-.12**	.04	-.14	.02	
					.02**

Note. NPA = Negative Pornography Attitudes from Pornography-Related Attitudes Scale.
(c) = Mean-centered.
*p < .05, ** p < .01, *** p < .001.

Given that the interaction term of NPA x Religiosity was significantly related to life satisfaction, a test of simple slopes was conducted to plot the magnitude and strength of the relationship between NPA and life satisfaction at different levels of religiosity (e.g., +/- 1 SD from the mean). Test of simple slopes revealed that the relationship between NPA and life satisfaction for participants with lower religiosity was negative and significantly different from zero ($t = -5.95$, $p < .001$); whereas the slope of the regression for participants with higher religiosity was positive, and not significantly different from zero ($t = 0.05$, $p = .96$; see Figure 1).

Figure 1

Test of Simple Slopes for relationship between NPA and Life Satisfaction at different levels of religiosity (e.g., +/- 1 SD from the mean)
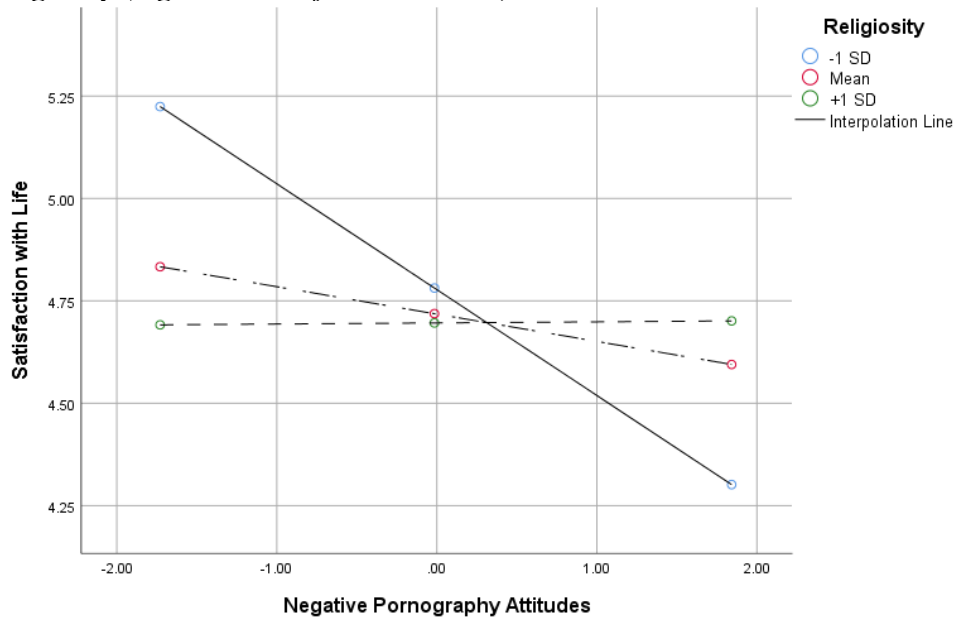
The relationship between NPA and life satisfaction was previously negative, but the religiosity moderator enhanced that relationship. This suggests that those with lower religiosity scores had a significant decrease in satisfaction with life scores the more they had negative attitudes toward pornography, which supports hypothesis 3 of the study. However, the effect of pornography appeared to be neutralized for participants with higher levels of religiosity, where their life satisfaction levels remained somewhat consistent regardless of their attitudes toward pornography.

Research Questions

Research question 1. The purpose of research question 1 was to examine the degree to which positive attitudes toward pornography would relate to social desirability, pornography use, religiosity, depression, anxiety, and satisfaction with life. The bivariate

correlations were significant and positive between positive pornography attitudes and pornography use over the past 6 months ($r = .47$, $p < .01$), as well as average weekly pornography use ($r = .12$, $p < .05$). Positive pornography attitudes were significant and negatively related to religiosity ($r = -.33$, $p < .01$) and social desirability ($r = -.15$, $p < .01$). However, the bivariate correlations were not significant between positive pornography attitudes and the three psychological outcomes: depression ($r = .10$, $p > .05$), satisfaction with life ($r = .04$, $p > .05$), and anxiety ($r = .03$, $p > .05$). (See Table 2.)

Research question 2. Research question 2 addressed to what degree would positive pornography attitudes relate to the three outcomes of depression, anxiety, and life satisfaction when controlling for social desirability. Again, due to these analyses being run with the three different outcomes, a Bonferonni correction was used to assess statistical significance for each regression model and coefficients considered ($p = .017$). For each regression conducted, social desirability was the only covariate entered in Step 1, followed by positive pornography attitudes in Step 2.

First, with depression scores as the outcome variable, Step 1 accounted for a significant degree of variance in depression, $F(1, 418) = 26.03$, p<.001, $R^2 = .06$, such that social desirability was negatively related to depression, $\beta = -.24$, t(418) = -5.10, p<.001, $pr^2 = .06$. Step 2 included positive attitudes scores and did not account for a significant degree of variance in depression scores, $F(1, 417) = 13.82$, p=.211, $\Delta R^2 = .004$. These findings indicate that positive pornography attitudes did not significantly relate to depression scores.

With anxiety scores as the outcome variable, step 1 accounted for a significant degree of variance in anxiety scores, $F(1, 418) = 15.69$, p<.001, $R^2 = .04$, such that social desirability was negatively related to anxiety, $\beta = -.80$, t(418) = -3.96, p<.001, $pr^2 = .04$.

However, step 2 did not account for a significant degree of variance in anxiety scores, $F(1, 417) = 7.83$, p = .99, ΔR^2 = .00. These findings also indicate that positive attitudes toward pornography did not significantly relate to anxiety.

With life satisfaction scores as the outcome variable, step 1 accounted for a significant degree of variance in life satisfaction, $F(1, 418) = 12.56$, p<.001, R^2 = .03, such that social desirability was positively related to life satisfaction, β= .17, t(418) = 3.54, p<.001, pr^2 = .03. Step 2 which included positive pornography attitudes did not account for a significant degree of variance in life satisfaction scores, $F(1, 417) = 7.16$, p=.188, ΔR^2 = .004. Overall, the findings regarding research question 2 suggest that positive pornography attitudes have no significant relation to life satisfaction as an outcome. (See Tables 6 a, b, and c for further statistical information related to research question 2.)

Table 6a (Research Question 2)

Hierarchical Regression Coefficients for Social Desirability and Positive Pornography Attitudes as related to Depression (N = 420).

	Depression				
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	-1.05***	.21	-.24	.06	
					.06***
Step 2					
Social Desirability	-1.01***	.21	-.23	.05	
PPA	.04	.03	.06	.004	
					.004

Note. PPA = Positive Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Table 6b (Research Question 2)

Hierarchical Regression Coefficients for Social Desirability and Positive Pornography Attitudes as related to Anxiety (N = 420).

	Anxiety				
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	-.80***	.20	-.19	.04	
					.04***
Step 2					
Social Desirability	-.80***	.20	-.19	.03	
PPA	.00	.03	.001	.00	
					.00

Note. PPA = Positive Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Table 6c (Research Question 2)

Hierarchical Regression Coefficients for Social Desirability and Positive Pornography Attitudes as related to Life Satisfaction (N = 420).

	Life Satisfaction				
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	1.11***	.31	.17	.03	
					.03***
Step 2					
Social Desirability	1.17***	.32	.18	.03	
PPA	.06	.04	.06	.004	
					.004

Note. PPA = Positive Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Research question 3. Research question 3 addressed the degree to which

pornography use (e.g., past 6 months use and average weekly pornography use) accounted

for a significant degree of variance in depression, anxiety, and life satisfaction above and

beyond positive pornography attitudes when controlling for social desirability. In each regression, social desirability was entered in Step 1 as a covariate.

With depression scores as the outcome variable, Step 1 accounted for a significant degree of variance in depression scores, $F(1, 417) = 26.48$, $p<.001$, $R^2 = .06$, such that social desirability was negatively related to depression, $\beta= -.24$, $t(417) = -5.15$, $p<.001$, $pr^2 = .06$. Step 2, which added positive attitude scores, did not account for a significant degree of variance in depression, $F(1, 417) = 26.48$, $p<.001$, $\Delta R^2 = .004$. Step 3, which added the two forms of pornography use, accounted for a significant degree of variance in depression above and beyond positive pornography attitudes, $F(2, 414) = 19.98$, $p<.001$, $\Delta R^2 = .099$. Specifically, average weekly pornography use was positively related to depression, $\beta= .31$, $t(414) = 6.51$, $p<.001$, $pr^2 = .09$, whereas pornography use over the past 6 months was negatively related to depression scores $\beta= -.22$, $t(414) = -4.08$, $p < .001$, $pr^2 = .04$. These findings suggest that as reports of average weekly pornography use increase, depression scores also increase. Results also indicate that as participants reported higher amounts of pornography consumption over the past 6 months, depression scores decreased.

The next regression examined the relationship between positive pornography attitudes completed with anxiety scores as the outcome variable. Step 1 accounted for a significant degree of variance in anxiety scores, $F(1, 417) = 16.17$, $p<.001$, $R^2 = .04$, such that social desirability was negatively related to anxiety, $\beta= -.81$, $t(417) = -4.02$, $p<.001$, $pr^2 = .04$. The second step did not account for a significant degree of variance in anxiety, $F(1, 416) = 8.07$, $p=.98$, $\Delta R^2 = .00$. Step 3, which included the two forms of pornography use, accounted for a significant degree of variance in anxiety, $F(2, 414) = 16.97$, $p<.001$, $\Delta R^2 = .10$. Specifically, average weekly pornography use, $\beta= .31$, $t(414) = 6.43$, $p<.001$, $pr^2 = .09$, was positively

related to anxiety and pornography use over the past 6 months was negatively related to anxiety, β= -.12, $t(414)$ = -4.46, $p<.001$, pr^2 = .05. These findings appear to indicate the same results as those with depression as the outcome variable, in that as reports of average weekly pornography use increased, anxiety scores also went up. However, as the amount of reported pornography use over the past 6 months increased, anxiety levels decreased.

Lastly, the same steps were followed as above to see if pornography use accounted for a significant degree of variance in life satisfaction above and beyond positive pornography attitudes, after controlling for social desirability. Step 1 accounted for a significant degree of variance in life satisfaction scores, $F(1, 417)$ = 12.77, $p<.001$, R^2 = .03, such that social desirability was positively related to life satisfaction, β= .17, $t(417)$ = 3.57, $p<.001$, pr^2 = .03. Step 2 did not account for a significant degree of variance in life satisfaction, $F(1, 416)$ = 7.26, $p=.191$, ΔR^2 = .004 nor did Step 3 $F(2, 414)$ = 5.10, $p=.057$, ΔR^2 = .013. Contrary to the previous findings regarding depression and anxiety as outcome variables, pornography use did not appear to significantly relate to reported levels of life satisfaction. (See Tables 7 a, b, and c for further statistical information related to research question 3.)

Table 7a (Research Question 3)

Hierarchical Regression Coefficients for Social Desirability, Positive Pornography Attitudes, and Pornography Use as related to Depression (N = 420).

	Depression				
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	-1.06***	.21	-.24	.06	
					.06***
Step 2					
Social Desirability	-1.03***	.21	-.24	.05	
PPA	.04	.03	.06	.004	
					.004
Step 3					
Social Desirability	-1.00***	.20	-.23	.06	
PPA	.07*	.03	.13	.01	
Past 6 Month Use	-.11***	.03	-.22	.04	
Average Weekly Use	.06***	.01	.31	.09	
					.10***

Note. PPA = Positive Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Table 7b (Research Question 3)

Hierarchical Regression Coefficients for Social Desirability, Positive Pornography Attitudes, and Pornography Use as related to Anxiety (N = 420).

	Anxiety				
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	-.81***	.20	-.19	.04	
					.04***
Step 2					
Social Desirability	-.81***	.21	-.19	.04	
PPA	.001	.03	.001	.00	
					.00
Step 3					
Social Desirability	-.79***	.19	-.19	.04	
PPA	.04	.03	.08	.01	
Past 6 Month Use	-.12***	.03	-.24	.05	
Average Weekly Use	.06***	.01	.31	.09	
					.10***

Note. PPA = Positive Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

Table 7c (Research Question 3)

Hierarchical Regression Coefficients for Social Desirability, Positive Pornography Attitudes, and Pornography Use as related to Life Satisfaction (N = 420).

	Life Satisfaction				
	B	SE	B	sr^2	ΔR^2
Step 1					
Social Desirability	1.12***	.31	.17	.03	
					.03***
Step 2					
Social Desirability	1.18***	.32	.18	.03	
PPA	.06	.04	.06	.004	
					.004
Step 3					
Social Desirability	1.17***	.32	.18	.03	
PPA	.10*	.05	.12	.01	
Past 6 Month Use	-.10*	.04	-.13	.01	
Average Weekly Use	.02	.02	.06	.003	
					.013

Note. PPA = Positive Pornography Attitudes from Pornography-Related Attitudes Scale. *p < .05, ** p < .01, *** p < .001.

CHAPTER 5

DISCUSSION

Using the framework of Cognitive Dissonance Theory (CDT), the current study examined whether religiosity buffered or enhanced the effects of attitudes toward pornography and the psychological outcomes of depression, anxiety, and life satisfaction among a sample of adult men. Previous research concerned with pornography use has largely focused on behaviors that constitute pornography addiction (Williams, 2017) and the negative effects of pornography use on mental health outcomes (e.g., Bridges & Morokoff, 2011; Whitfield et.al, 2018). Despite the provocative nature of pornography, few studies have examined the role of attitudes toward pornography in relation to use or mental health outcomes, which is surprising given that pornography has, and continues to remain highly stigmatized (Romito & Beltramini, 2011; Zillmann & Bryant, 1986). Given this level of stigma along with research linking pornography use to negative outcomes (Perry, 2018; Willoughby et al., 2014), the focus of this study was on the role of attitudes toward pornography and psychological outcomes using the framework of CDT. According to CDT, individuals who engage in actions deemed inconsistent with their beliefs and/or morals (e.g., cognitions or attitudes) are likely to experience a state of psychological dissonance or discomfort (Festinger, 1957). In effort to explore whether cognitive dissonance may play a role in the relationship between pornography use and perceived effects or consequences of use, this study drew from the work of Rasmussen and colleagues (2018) who recently examined attitudes toward pornography as an outcome variable in relation to social desirability, self-reported use of pornography, and religiosity. The authors found that Positive Pornography Attitudes (PPA) was significantly (and positively) related to use and negatively

75

correlated with social desirability and religious participation, whereas Negative Pornography Attitudes (NPA) was positively related to religious participation and negatively related to use (Rasmussen et al., 2018).

Therefore, using the framework of CDT, this study considered the role of religiosity in relation to use and attitudes toward pornography, but also included psychological constructs as outcomes, given that prior research suggests that a person's religious beliefs may also facilitate feelings of incongruence or dissonance between conflicting behaviors and/or values (Doran & Price, 2014; Patterson & Price, 2012; Perry, 2016; Perry & Whitehead, 2018). In particular, it was expected that a person's level of religiosity (defined by the prominence of religiosity/spirituality in everyday thought and feelings; Exline et al., 2000; King & Hunt, 1975) would enhance the ways that attitudes would relate to negative psychological outcomes given that pornography is often linked to discussions about deviance and morality (Willoughby et al., 2018). Study results are intended to help educators, therapists, and other helping professionals effectively work with individuals who may be struggling with the effects of pornography use.

General Findings

As a general preface regarding the following findings, it is important to note for interpretation of effect sizes that an f^2 score of .02, .15, and .35 represent a small, medium, and large effect size for multiple regression results, respectively (Cohen, 2013). Many studies concerning pornography use have typically observed small effect sizes (e.g., Bradley et al., 2016; Grubbs et al., 2015; Grubbs et al., 2018; Hardy et al., 2019; King, 2016; Miller et al., 2018; Willoughby et al., 2018; Willoughby & Busby, 2016).

Negative pornography attitudes. Based on prior studies that have found a connection between greater pornography consumption and negative mental health outcomes (Bridges & Morokoff, 2011; Ma, 2018; Willoughby et al., 2014; Willoughby et al., 2018), it was expected that NPA would positively correlate with depression and anxiety scores, and negatively correlate with life satisfaction (H1). Correlational findings indicated that participants who reported stronger NPA also reported lower levels of depression and anxiety, as well as lower levels of life satisfaction. Although the negative and significant relationship with life satisfaction was expected, study participants who endorsed stronger negative beliefs about pornography also expressed lower symptoms of depression as well as anxiety. Even when social desirability was added to the model (H2a), NPA continued to negatively and significantly relate to depression, anxiety, and life satisfaction above and beyond social desirability effects. In retrospect, it seems more reasonable to have assumed that NPA would correlate negatively with depression and anxiety, as shown in the current findings. When initially considering what to expect regarding the relationship between NPA and depression and anxiety based off of previous research, I mistakenly viewed attitudes toward pornography as having the same effect on outcomes as pornography use, which resulted in the original hypothesis that NPA would positively relate to depression and anxiety (just as use had in past research; Rasmussen et al., 2018). The main mistake in this situation was not realizing that that using the concept of *negative* pornography attitudes would presumably imply the opposite effect on outcomes compared to actually consuming it–which was the case in the current findings.

When considering the relation between negative attitudes toward pornography and consumption of it, there was a medium to large effect size with depression as the outcome variable ($f^2 = .20$), as there was with anxiety as the outcome variable ($f^2 = .22$).

Although higher use of pornography has been linked with negative psychological outcomes in prior research (Bridges & Morokoff, 2011; Ma, 2018), these studies did not consider whether participants held negative or positive attitudes toward pornography. Rasmussen et al. (2018) found that as NPA went up, pornography consumption went down; and that as NPA increased, so did the perception that pornography was addictive. Other studies have concluded that as perceived addiction to pornography increased, shame and guilt did as well (Sniewski & Farvid, 2019)–which is the essence of psychological dissonance/discomfort described by CDT (Festinger, 1957). Consequently, the current study showed that not only did including attitudes toward pornography account for a significant amount more variance in pornography use and its effects, but also that the connection between attitudes and perceived addiction to pornography is significant for future studies. According to Wilt et al. (2016), attitudes and perceived addiction to pornography may be more relevant to mental health outcomes than the actual consumption of pornography, which is consistent with other studies (Grubbs et al., 2017; Grubbs, Exline et al., 2015; Grubbs, Volk et al., 2015).

In addition, the current study found that, when controlling for social desirability, higher NPA was related to lower levels of depression and anxiety. Multiple regression results that examined attitudes toward pornography and its relation to both depression and anxiety as outcome variables neared a medium effect size ($f^2 = .12$ for both). According to Perry (2018), individuals who view pornography may be more likely to experience more negative mental

health outcomes (e.g., depression), but only if they have beliefs/attitudes against it and morally disapproved of it. The moral disapproval of a behavior, yet still engaging in it, is important to consider given that the basis of CDT is that psychological discomfort occurs when people's behavior(s) are contradictory to their values, beliefs, or ideas (Festinger, 1957). This concept suggests that the dissonance itself appears to play a significant role in relation to symptoms of psychological distress.

Lastly, as participants' NPA increased, their overall life satisfaction went down. Further, similar analyses with life satisfaction as the outcome and its relation to attitudes towards pornography, the effect size was between small and medium in strength ($f^2 = .08$). The finding that increased NPA lead to lower levels of life satisfaction appears contrary to what CDT (Festinger, 1957) would suggest in that higher/stronger negative attitudes toward pornography would result in a positive relationship with life satisfaction (assuming the individual was not using pornography). If an individual had strong negative attitudes toward pornography, yet was also viewing it, this dissonance would likely cause psychological discomfort–in which case, a negative relationship between stronger negative attitudes and life satisfaction would be expected, as the current study found.

In addition, NPA continued to negatively and significantly relate to depression, anxiety, and life-satisfaction even when pornography use (both within the last six months and over the past week) was added to the hierarchical regression model (H2b). More specifically, NPA continued to negatively and significantly relate to depression, anxiety, and life satisfaction regardless of participants' social desirability concerns and their use of porn over the past week and six months. These results are particularly notable given that pornography consumption has been linked with lower levels of life satisfaction (Peter & Valkenburg,

2011) and depressive symptoms among adolescents (Willoughby et al., 2018; Janis Wolak et al., 2007), college students (Willoughby et al., 2014), and adult heterosexual (Bridges & Morokoff, 2011), gay and bisexual men (Whitfield et al., 2018). Relative to pornography use, these results may speak to the unique role that attitudes toward pornography may have on mental health outcomes. It is possible that the stigma associated with pornography (Perry & Snawder, 2017) may be amplified for some individuals regardless of the frequency in which they consume it. One idea as to why stigma might be amplified is because it is not so much an issue of when or how frequently someone viewed pornography, but more so that they experience psychological discomfort as a result of use at all in relation to their negative attitudes about pornography (Festinger, 1957), such as feelings of shame or guilt for their consumption (Sniewski & Farvid, 2019).

     Religiosity as a moderator. Hypothesis three tested whether religiosity moderated the relationship between NPA and the three outcome variables, such that higher religiosity was expected to significantly enhance the relationship between NPA and the three psychological outcomes of depression, anxiety, and life satisfaction. Results of the regression analyses indicated that religiosity did not moderate the relationship between NPA and depression, nor the relationship between NPA and anxiety, as the interaction term (NPA x Religiosity) did not significantly relate to either outcome. However, results revealed significant moderating effects of religiosity on the relationship between NPA and life satisfaction. More specifically, the interaction term of NPA x Religiosity was significantly related to life satisfaction, indicating that the relationship between NPA and life satisfaction varied at different levels of religiosity. Post-hoc analyses indicated that at lower levels of religiosity, the negative relationship between NPA and life satisfaction was enhanced;

whereas, at higher values of religiosity, the direction of relationship reversed and was no longer significant. As a reminder, NPA and life satisfaction were already negatively related. When religiosity was added as a moderator, the negative relationship between NPA and life satisfaction was greatly enhanced for those who identified religiosity to be less important in their lives. In other words, for those with low religiosity, life satisfaction dramatically declined as attitudes against pornography increased. Conversely, participants with high religiosity did not report the same effects. For those with high religiosity, the relationship was reversed (although not significant) in that life satisfaction slightly increased as attitudes against pornography got stronger. That is to say that there was very little change in life satisfaction regardless of negative attitudes about pornography for those who were highly religious.

Within the framework of CDT (Festinger, 1957), it would seem that participants with lower levels of religiosity and less negative attitudes about pornography use would experience little or no dissonance if they consumed it, given that their personal beliefs do not strongly go against the viewing of pornography. Or, for example, consider devout conservative Christians who are often taught that pornography directly violates church commands (Perry, 2018) and who have strong negative attitudes toward pornography. Someone with high religiosity who lives according to these teachings would likely not be at risk for experiencing dissonance by abstaining from consuming pornography. In either scenario described, it is assumed that no psychological discomfort would be experienced and the individual would lead a hypothetically happy life with no dissonance in this regard. However, the moderation analysis that looked at life satisfaction as the outcome did not include pornography use as a covariate because it was not originally a significant correlate

with life satisfaction. This lack of correlation is important to note, though, because it demonstrates why interpretation of the moderation results that include these variables is difficult. CDT (Festinger, 1957) would suggest that for dissonance to result in psychological discomfort (i.e., life satisfaction), there needs to exist two ideas or beliefs that do not align with one another. Since pornography use was not significantly correlated with life satisfaction, and therefore not added as another variable in the moderation (alongside attitudes toward pornography), there was no secondary attitude or behavior with which attitudes might misalign to result in dissonance. It was hoped that a significant relation would emerge between attitudes and life satisfaction by adding religiosity as a moderator (i.e., the second variable that may or may not align with attitudes), therefore providing clarification as to how religiosity affects the relationship between attitudes and life satisfaction.

Positive pornography attitudes. Conversely, for the exploratory question of how PPA might relate to depression, anxiety, and life satisfaction, results did not reveal any significant findings. However, it is important to note that participants who held stronger positive attitudes about pornography also reported higher pornography consumption over the past six months, which is consistent with Træen et al. (2004) who found that respondents who expressed positive attitudes toward pornography were more likely to consume it than those who did not express positive attitudes toward it.

Since NPA and PPA were measures of opposing attitudes, it was assumed that PPA would result in opposite correlations of NPA, such that PPA would relate to higher levels of depression and anxiety, and lower levels of life satisfaction. The current findings did not yield significant relations between PPA and mental health outcomes. However, PPA was found to significantly and positively correlate with average weekly pornography use, use

over the past 6 months, and NPA; but PPA was negatively correlated with religiosity. The positive correlation between PPA and NPA was very unexpected, as they measure opposing views. Rasmussen et al. (2018) also found that PPA was positively correlated with recent use over the previous 6 months, but had contradicting findings to the current study in that they found a negative correlation between PPA and NPA. Given that some correlations regarding PPA had similarities and differences compared to Rasmussen and colleagues (2018), it would appear that PPA may be a variable of interest for future studies. On the other hand, the lack of significant findings involving PPA warrants some questions over its usefulness in future research.

Pornography use. It is important to acknowledge that pornography use was operationalized in two different ways and demonstrated different correlational patterns with several variables of interest. More specifically, pornography use was operationalized as the past six months of use and average use over the past week. Similar to Rasmussen and colleagues (2018) who also asked participants to indicate the number of times they used pornography over the past six months, last six months of use was positively linked with positive attitudes toward pornography. However, unlike Rasmussen et al. (2018), who found a negative link between pornography consumption and negative attitudes toward porn, current study participants who consumed more pornography over the past six months also reported stronger negative attitudes toward pornography.

Possible reasons as to why pornography consumption results (measured over the last 6 months of use) may have differed compared to Rasmussen and colleagues' (2018) findings could be a result of perceived addiction and/or religiosity. To demonstrate this idea, it could be the case that individuals who consume pornography have negative views about it and its

effects, but struggle to quit consumption from a perceived addiction to it (Sniewski & Farvid, 2019). Another possibility is that because the current sample was largely religious in varying degrees, individuals may already be in the habit of consuming pornography, but still gain strong negative views about it from religious teachings.

Further, it may be important to consider why pornography consumption in the current study (measured by average weekly use and past 6 month use) did not relate as strongly or consistently to psychological outcomes, like many previously mentioned studies (e.g, Bridges & Morokoff, 2011; Whitfield et al., 2018; Willoughby et al., 2014; Willoughby et al., 2018; Janis Wolak et al., 2007). Current results found that pornography use over the past six months was significantly and negatively related to anxiety, and average weekly use was positively related to anxiety and depression; yet, use over the last 6 months was not related to depression or life satisfaction, nor was average weekly use related to life satisfaction. Despite some significant findings among the psychological outcomes, neither form of pornography use (average weekly use and past six month use) was significantly related to all three outcomes. One idea as to why psychological outcomes may have not been as strong or consistent is because the current study included two variables that have not typically been assessed in past studies: social desirability and NPA. Given that both of these variables consistently and significantly related to all three psychological outcomes, it is likely that the addition of these variables may have taken away from the variance accounted for in previous studies by consumption alone.

The assessment of pornography consumption in pornography-related research may seem obvious, but questioning the method by which pornography has been measured is merited. In reviewing pornography-related literature for the present study, I found that

assessment of actual use of pornography was a major variable in virtually every study reviewed (e.g., Grubbs & Perry, 2019; Leonhardt et al., 2018; Poulsen et al., 2013, Rasmussen et al., 2018; Willoughby et al., 2014), making it what appears to be an understandably vital facet of such research. Of the 420 participants in the current study, over 95% ($n = 400$) reported viewing pornography–which is similar to, if not higher than percentage rates of consumption in other studies that examined pornography use exclusively among men (e.g., Bradley et al., 2016; Grubbs et al., 2017; Rasmussen et al., 2018). This high report rate may be due to the idea that admitting their consumption anonymously to a researcher who is unlikely to render any judgment on their choice of media habits (Rasmussen et al., 2018). However, what may be more important than the high reports of use is a critique of how previous studies have measured pornography use. The majority of studies typically assess pornography consumption with a single item that asks about participants' use between the last 6 to 12 months (e.g., Willoughby et al., 2014; Picone, 2017; Rasmussen et al., 2018; Wright et al., 2014). In addition to asking this question to assess use, the current study also asked the averagely weekly hours that participants viewed pornography, which actually led to differing results in some situations compared to the assessment of use over the past 6 months. Given these differences, it appears that different timelines of use may result in different findings, indicating a potential need to at least assess use within multiple different timelines.

However–despite these high reports of pornography use by men–because pornography has been and continues to remain highly stigmatized (Romito & Beltramini, 2011; Zillmann & Bryant, 1986), it was important to account for the socially desirable way that participants may have responded when reporting how much pornography they view. The

suggestion to account for social desirability was supported by the findings in the current study, as demonstrated by the significant amounts of variance accounted for by including this variable. In most of the regression analyses conducted regrading social desirability, NPA, pornography use, and mental health outcomes, the variable of social desirability accounted for approximately half of the variance in these regressions–indicating the need to include it in future research. Obtaining reliable data on a subject such as pornography consumption may prove difficult given both the stigma surrounding it and the private nature of its use (Perry & Snawder, 2017). This idea was demonstrated by Lo and Wei (2002) in their findings that people may be more comfortable with discussing the use and effects of pornography in general, but may be less willing to admit to their own use and the negative effects on their lives. Like any other provocative topic, people may not be overly forthcoming about the degree and nature of their pornography use, and it is for these reasons that Rasmussen et al. (2018) suggested that people may underreport the negative effects of their pornography use in effort to positively self-present; consequently, they recommended accounting for social desirability when assessing pornography use.

In addition to the suggestion of continuing assessment of social desirability in pornography research, these findings could indicate that despite the high use of pornography (e.g., Grubbs et al., 2017; Leonhardt et al., 2018; Rasmussen et al., 2018)–which one could potentially argue means that stigma associated with its use is decreasing–people still tend to report their use in a socially desirable way (i.e., underreport use). This tendency has been found to be the case especially among religious consumers, who may perceive increased negative consequences of their use as particularly threatening to their own positive self-image (Rasmussen et al., 2018), and therefore underreport their use.

Depression and anxiety as outcome variables. In addition to the statistical significance for several of the findings for this study regarding depression and anxiety as outcome variables, the following is a discussion of the practical significance in how the population used for this study may compare to non-clinical scores of depression and anxiety among the general public. In order calculate scores for any aforementioned analyses, the average scores from the depression and anxiety subscales of the DASS-21 were utilized, as previously described (i.e., utilizing mean computation for missing data). However, other calculations were completed in order to compare general levels of depression and anxiety with this population to the general population.

The DASS-21 instructions direct users of the scale to sum the scores of each subscale and multiply it by two, after which that score can be placed in the provided levels or degrees of depression and anxiety. Per the scoring instructions for the DASS-21, the recommended cut-off scores for conventional severity labels for depression are as follows: normal (0-9), mild (10-13), moderate (14-20), severe (21-27), and extremely severe (28+). For anxiety scores, the cut-off levels are as follows: normal (0-7), mild (8-9), moderate (10-14), severe (15-19), and extremely severe (20+). Using these cut-off levels, the calculated scores of the sample for this study (N = 420) show how it compares to the general public.

For depression scores among the current sample, 41.8% of participants fell within the normal limits, 5.1% in the mild range, 14.9% in the moderate range, 19.6% in the severe range, and 18.7% in the extremely severe range. For anxiety scores with the current sample, 40.5% fell within normal limits, 7.2% in the mild range, 9.3% in the moderate range, 10.5% in the severe range, and 32.5% in the extremely severe range. These percentages not only indicate a wide range of depression and anxiety levels among the current sample, but also

what seems to show practical significance. Given that approximately 43% of this sample had severe or extremely severe depression scores, and approximately 38.3% had severe or extremely severe anxiety scores, these percentages would suggest that NPA and weekly pornography use are associated with not only relatively higher scores on depression and anxiety measures, but with actual severe scores.

Strengths and Limitations

  Strengths. A primary strength of the current study is its inclusion of attitudes toward pornography, given that most of the research concerning the effects of pornography has either ignored, or at best, simply controlled for attitudes regarding pornographic content (Willoughby et al., 2018). To my knowledge, the current study was the first to explicitly consider attitudes toward pornography as a primary variable of interest in relation to mental health outcomes, which is important to consider for several reasons. First, the significant relations between attitudes and mental health outcomes in the current study (and attitudes being significantly related to consumption; Rasmussen et al., 2018) indicate that research that does not assess or account for attitudes may be missing out on information that could provide further clarification on results. In applying this to real life, CDT (Festinger, 1957) indicates the importance of understanding a person's attitudes/beliefs (i.e., attitudes toward pornography) in relation to well-being–not only behaviors (i.e., pornography consumption). The apparent need to include assessment of attitudes toward pornography for professionals working with clients/patients voicing pornography-related concerns appears to be an essential factor to fully understand any psychological discomfort they may be experiencing. Further, through the lens of CDT, essentially any behavioral outcome measured in future studies, or that of mental health outcomes, can be better understood when any type of dissonance is

found between someone's attitude toward something and the physical or mental outcome being examined.

Another strength of this study in comparison to previous research relates to the diversity of underrepresented participant demographics in terms of sexual orientation. It appears that this study had better representation of individuals who identified as bisexual–doubling the percentage of others studies in some instances (e.g., Grubbs et al., 2015). In the current study, there was also a significant difference between bisexual and heterosexual participants, where bisexual participants showed higher levels of depression than heterosexual ones. Given that the vast majority of previous studies looked at heteronormative sexual orientations (i.e., straight men; e.g., Bridges & Morokoff, 2011; Hald, 2006; Miller et al., 2018; Sniewski & Farvid, 2019) and objectification of women (McKee, 2005; Skorska et al., 2018; Vandenbosch & van Oosten, 2017), this difference, and potential other differences between other sexual identities, is interesting to note. There is very limited research that has examined pornography use and related behaviors by sexual identity (Downing et al., 2017). A small number of studies I found that did investigate pornography-related issues on underrepresented sexual orientations examined concepts such as male body attitudes, anxiety, and depression among gay and bisexual men (Whitfield et al., 2015), and consumption rates of pornography and sexual behaviors among men and women of differing sexual orientations (Træen & Daneback, 2013). But, the somewhat surprising observation was made that, to my knowledge, none of these studies assessed the fundamental function or purpose of viewing pornography with individuals who identify as gay, bisexual, or other non-normative sexual orientations.

The focus on heterosexual men (and often accompanying implied attraction to women) in previous research may cause one to wonder if the very construct and function of pornography would be different among non-heteronormative men. It could be contended that pornography has a different function for those who do not identify with heteronormative sexual orientations (i.e., non-White and/or gay and bisexual men). Additionally, it is difficult to compare the current sample demographics to other studies since many did not report any information regarding the sexual orientation of their participants (e.g., Frutos & Merrill, 2017; Patterson & Price, 2012; Perry, 2018; Picone, 2017; Willoughby, 2016; Willoughby et al., 2018; Wilt et al., 2016). If significant group differences indeed exist, it would follow that improved and tailored means to help individuals from groups that may be more severely impacted by pornography consumption is a worthwhile endeavor. In other words, more studies among underrepresented sexual orientations are needed to clarify results in order to better understand the effects of pornography on such individuals, and therefore know if certain groups are at higher or different risks by viewing pornography.

Limitations. Study results should be interpreted within the context of several limitations in this study. These limitations include ideas related to measurement and selective sampling among participants.

One of the primary limitations of this (and other) studies revolves around the idea that the operationalization and measurement of pornography use is problematic. Many (if not the vast majority of) previous studies utilized a single item to assess pornography use (e.g., Leonhardt et al., 2018; Poulsen et al., 2013; Willoughby et al., 2016), often asking some variation of the following question: "Within the past 6 months, how many times have you viewed pornography?" Responses typically include rating scale options ranging from "almost

never" to "more than once a day." Other studies used a somewhat different, but single item for pornography consumption by asking participants if they had viewed an X-rated film in the previous year (e.g., Rasmussen et al., 2018). As the task of defining what even constitutes pornography has been described as elusive (Williams, 2017), as well as the fact that different types/levels of pornography exist (e.g., soft or hard porn; Hirdman, 2007), it appears largely problematic to use only a single item to assess pornography use. In other words, using one question to assess consumption of pornography is not sufficient. Hypothetically, one person may view what has been referred to as "soft" pornography (e.g., Hirdman, 2007), but disagree that it constitutes actual pornography in comparison to "hard" pornography, thereby making such a person's responses to any potential research data different than, and heterogeneous to, others' responses whose definitions of pornography differ.

Despite the attempt in the current study to more accurately assess pornography use with the additional question: "How many hours, on average, do you spend viewing pornography in a given week?", different results were obtained between some mental health outcomes depending on which question was used to assess for pornography use. That is to say, the hope of clarifying pornography with this added assessment question only related to the time frame in which participants reported viewing pornography; it did not, however, provide further insight as to what content participants deemed pornographic or if they believed it to be problematic. As a result, the current findings (and other research on pornography) must be interpreted with the recognition that this common approach to assessing pornography consumption is limited. Given the opposing directions of the current findings, as well as the previously mentioned problems with definitions and types of

91

pornography, a more comprehensive assessment/measure of pornography use would be most welcomed.

Another limitation of the current study regards the scales used to assess attitudes toward pornography. Some items on the PPA subscale ask if participants think that it is normal and morally acceptable for a man to view pornography; other items ask the same question, but if it is normal and morally acceptable for women to view pornography. A potential limitation in the use of these items lies in the idea that participants may change their response based on the gender of the subject in the question. With only four questions used to measure positive attitudes (2 about men and 2 about women), where participant responses may be different depending on the gender of the subject, it might be argued that a more accurate measurement might be obtained if the aspect of gender was removed from the questions. Additionally, the psychometric properties of both the positive and negative attitudes scales have not been confirmed. These scales were created to be used in the original study by Rasmussen and colleagues (2018), in which high reliability scores were reported, but validity evidence was not assessed. That being the case, the results from the current study should be considered with caution until further studies can confirm the validity of these subscales and/or improved and validated measurements of attitudes toward pornography are created. Given this limitation, current study results could be compromised given that overall views of pornography may differ compared to views of it regarding consumption by men or women, as previously noted. Also, all items on both the PPA and NPA scales asked about views toward pornography without any definition of it, or without asking participants how they defined it. Again, as previously discussed, without having a clear definition by which

results can be compared and interpreted, there is always potential for the current findings to be compromised.

A last limitation to mention regrading measurement is the potential for measurement reliability as potentially being responsible for attenuated correlation estimates.

Selective sampling in the current study can also be viewed as a limitation. By only advertising the current study on an online platform, it could be implied that only certain types of people would find or have access to participating in the study. Although some scholars have noted that MTurk samples are very similar to the diversity of other behavioral research samples (Leonhardt et al., 2018), and that some have been able to replicate previous research findings on MTurk as evidence for the validity of the sample (Paolacci et al., 2010; Schleider & Weisz, 2015), the sample for the current study was only obtained by MTurk users. To my knowledge, no studies have investigated whether or not MTurk users are more prone to view pornography than other individuals. Wilt et al. (2016) found that it was clear that college students who viewed pornography regularly also reported a greater intensity in their efforts to access pornography. Although the "Internet literacy," so to speak, of these college students was not assessed, it could be argued that more time spent on the Internet would correlate with a higher savviness of finding things online, including pornography. Since work for MTurk users is always completed online, it could be possible that MTurk users (compared those who do not use MTurk) might be more capable of and willing to search for pornography online. Therefore, it could be possible that the MTurk sample used in this study may have a better general understanding of how to access pornography compared to others, thus leading me to state that selective sampling may have been a factor in the participants for this study and the results.

Suggestions for Future Research

In connecting the current findings and previous studies, multiple suggestions can be made for future research. One main suggestion, as previously discussed in the limitations section for the current study, is that of improving or creating measures that more accurately assess both pornography use and attitudes toward pornography. In addition to obtaining the actual time spent consuming pornography (which has been the primary approach in past research), ideas as to how pornography consumption may be more thoroughly assessed include differing timelines and/or recency of consumption (previously discussed based on current findings), obtaining participants' definition of pornography (see Hirdman, 2007), their beliefs/attitudes as to whether or not it is problematic and/or addictive (see Wilt et al., 2016), their purpose for consuming it (see Lofgren-Mårtenson & Månsson, 2010; Weinberg et al., 2010), and how it is consumed (e.g., watching X-rated films, Rasmussen et al., 2018; versus online photographs or videos, Peter & Valkenburg, 2011).

Another suggestion for future research would be to utilize pornography consumption as a mediator between attitudes and other outcomes rather than a predictor in regression analyses. This suggestion comes from the current findings that NPA was significantly related to each of the three mental health outcomes in the regression on its own (see Tables 4 a, b, and c). Because CDT (Festinger, 1957) suggests that psychological discomfort (as measured by psychological outcomes) can only result when *two* variables (i.e., beliefs about and consumption of pornography) do not align with each other, attitudes alone would not theoretically relate to psychological outcomes without some significant middle factor. In other words, it could be viewed as attitudes (about pornography) lead to behaviors (i.e., pornography consumption), which in turn affects psychological outcomes (i.e., life

satisfaction). NPA would likely lead to less pornography consumption (as found in Rasmussen et al., 2018), which in turn would be assumed to relate to lower depression and anxiety (based on current findings), as well as potentially increased life satisfaction. On the other hand, PPA would presumably lead to more consumption (Rasmussen et al., 2018), which could lead to higher or lower life satisfaction, depending on other potential variables. Therefore, to restate this idea, including pornography use as a mediator may help to better explain why the relationships between these variables occur. Given the significant correlations between NPA and depression, anxiety, and life satisfaction, it could be argued that use is mediating the effect between NPA and the outcomes. It is difficult to know how attitudes relate to mental health outcomes when including use as a predictor in the regression analysis, but more clarity might result by including use as a mediator to keep it included in the analysis, but in a way that is not taking away from the significant relationship between NPA and psychological outcomes.

Future research could also focus on obtaining more understanding regarding the demographic components of religious/spiritual beliefs, race, and sexual orientation. The current study did not include assessment of participants' specific religious/spiritual beliefs, nor did it include any assessment regarding the foundational religious/spiritual beliefs of participants about pornography specifically. The focus of this study was more on attitudes towards pornography rather than the particular religions/spiritual beliefs of participants, but religions have often been assessed in past research (e.g., Grubbs et al., 2017, Rasmussen et al., Willoughby et al., 2018), and could be integrated with the focus on attitudes in future studies. There could be significant differences between religions and their spiritual views about pornography, meaning that a deeper assessment of participants' religions/spiritual

beliefs could provide further edification on the subject. Additionally, other demographics that could be more of a focus in future studies include more research on underrepresented groups regarding differing races and sexual orientations. It is difficult to say whether or not previous studies had higher representation of underrepresented populations, given that racial identity was not provided in many of them (e.g., Willoughby, 2016; Perry, 2018) or when small numbers of participants from underrepresented groups were lumped into an "other" category (e.g., Patterson & Price, 2012). A review of the literature revealed that the clear majority of participants in almost every previous study were White, straight individuals (e.g., Rasmussen et al., 2018; Willoughby et al., 2018; Wilt et al., 2016). Striving for a representable sample to the population would be a welcomed, respected effort for individuals of underrepresented groups.

An additional suggestion for further research regards the debate in pornography-related literature as to whether or not pornography is addictive. The application of Cognitive Dissonance Theory appears to act as a solid theoretical approach and lens through which future studies can aim to explore and resolve this debate. Although the addictive nature of pornography was not a focus in this study, the current findings would suggest that pornography indeed has potential to be labeled–or at least perceived by users–as addictive. As was found in the current study, many individuals appear to have strong negative attitudes toward pornography, yet continue to consume it despite potentially negative consequences. CDT could be utilized as a theoretical backbone for understanding attitudes toward and perceptions of pornography use, how people define addiction, and why those who view it continue to do so despite the oft-reported negative consequences. Some people argue that pornography use is addictive in nature (e.g., Grubbs & Perry, 2019; Williams, 2017) and

others argue that it is not (e.g., Daneback et al., 2009; Lofgren-Mårtenson & Månsson, 2010; Weinberg et al., 2010). The current results showed that while many participants had negative attitudes toward pornography–as well as lower/poorer mental health outcomes–they continued to consume pornography regardless. It would seem that such a circumstance would support the definition of something being labeled as addictive, in that an individual may have attitudes/beliefs against certain behaviors, and even a desire to discontinue involvement in said behaviors, yet continues to engage in it. Such cognitions and behaviors fit very well within the theory of cognitive dissonance, where psychological discomfort is the result of an inconsistency between a person's negative thoughts toward pornography and his or her continued viewing of it (Festinger, 1957).

Future research could also be more comparative in its findings between pornography users and non-users, as well as men and women. As was mentioned, over 95% of the participants in this study reported that they had viewed pornography within the last 6 months. Therefore, the remaining 5% did not result in a sample size big enough such that differences between their attitudes and mental health outcomes could be compared to those who had viewed pornography. Additionally, despite literature largely focusing on men, since they tend to view pornography more often than women (Albright, 2008; Buzzell, 2005; Carroll et al., 2008; Cooper et al., 2004; Emmers-Sommer et al., 2013; McKee, 2007; Stack et al., 2004) and are more likely to experience negative outcomes as a result (e.g., anxiety, depression, and lower life satisfaction, as well as others such as negative affect and unrealistic sexual expectations; Bridges & Morokoff, 2011; Whitfield et al., 2018; Maddox et al., 2011; Muusses et al., 2014), pornography use among women may be also be increasing (Carroll et

al., 2008; Hald et al., 2014; Regnerus et al., 2016) and couples sometimes view pornography together (e.g., Carroll et al., 2017; Willoughby & Leonhardt, 2018).

A unique recommendation for future research may also come as a result of the world's current circumstance with the Covid-19 pandemic and pornography use. I was not able to find any published research related to pornography use during the pandemic or its effects on consumers during such a time, but this unprecedented circumstance would likely add a unique factor into play. Any of the aforementioned suggestions for future research could also include the added variable/factor of how pornography consumption and its effects changed and/or were different for individuals during the pandemic compared to before. Considering the many shelter-in-place orders, easy access to the Internet from home, and people potentially having more free time as a result of the pandemic, future research about this topic has potential to be very interesting and informative.

In conclusion to the recommendations for future research, an overarching argument could be made that essentially any significant variable that has been included in previous pornography research concerning consumption and its effects has potential to be further explored *in tandem* with attitudes toward pornography as a primary variable of interest. This study partly focused on mental health outcomes as related to attitudes toward pornography, but many other specific factors discussed from previous literature could be explored in further detail. For example, significant findings on the effect of pornography consumption on romantic relationships (e.g., Willoughby et al., 2016; Willoughby & Leonhardt, 2018), or the effects on women, as compared to men (e.g., Stewart, & Szymanski, 2012) could be further explored with the added element of assessing for attitudes toward pornography.

Counseling Implications

Nationally and internationally, an increasing number of mental health professionals are encountering clientele reporting problems with pornography use (Gola et al., 2016; Kraus et al., 2016; Kraus et al., 2015; Short et al., 2016). Although not a primary focus of the current study, descriptive data indicated that 129 out of the 400 (32.25%) participants that reported pornography use in the current study also reported having sought out counseling services as a result of their pornography use. Of those 129 participants, only three of them indicated "strongly disagree" for the item that asks if being a religious or spiritual person is important to them; not a single one of the 129 responded to the option of "not at all" for the item assessing how often participants prayed or meditated; and only 4 of those same 129 stated that they never attended a religious/spiritual service or meeting.

The ratio of those who sought out psychological services as a result of their pornography use in the current study, as well as those who reported some degree of religiosity in their lives, is notable. Hypothetically, if these numbers were to be generalized to all clients seeking mental health services, approximately one in three clients who identify as men may desire to discuss pornography-related concerns, and a large percentage of them would report some form of religiosity, indicating a need for mental health professionals to be more comfortable with and knowledgeable about this topic. Client disclosure of pornography may create discomfort for therapists, meaning they have to manage their own discomfort while also trying to retain fidelity to treatment (Walters & Spengler, 2016). The potential difficulty in managing this discomfort may especially be the case given that clinicians know little about how individual people think about pornography, how this thinking influences their behavioral decisions, and how both thinking and behavior may moderate associations

99

with individuals' well-being (Willoughby et al., 2018). In agreement with Grubbs and Perry (2019), these findings, and the application of CDT in relation to pornography use, suggest that clinicians who work with such clientele should work to be more curious about and open to the potential role of moral incongruence or dissonance when clients report problematic pornography use. Similarly, it is hoped that the statistic of how many individuals from the current sample reported having viewed pornography may act as a comfort to potential clients in normalizing discussion of it, knowing that they are not alone in their struggles with pornography and its effects.

The topics of pornography and religiosity can sometimes be difficult for both the client and therapist to discuss in therapy. Disclosure of pornography use by clients in therapy can be difficult not only because the therapist is often viewed as being in a position of power, but also because clients may potentially (and understandably) experience feelings of vulnerability and shame when disclosing use to their therapist (Murray, 2017). To make things potentially even more difficult for clients, disclosure of religious or spiritual beliefs in therapy may invoke anxiety for many clients (Brelsford & Ciarrocchi, 2013). Therapists' religious views can also have an influence on the treatment of clients with sexual and pornography-related issues. Past research has found that therapists who are more religious are more likely to diagnose sexual addiction to clients who report more excessive sexual behaviors (Hecker et al., 1995). Similarly, religious therapists are more likely to label any online sexual activity as an addiction (Hertlein & Piercy, 2008). Overall, therapists' religiousness and morality seem to have an influence on how the sexual behaviors of clients are interpreted (Grubbs & Perry, 2019). This can be particularly concerning when considering how perceived moral judgments from clinicians might reduce a client's

willingness to continue in therapy (Harris & Darby, 2009). From a clinical perspective, the current findings suggest that those with low religiosity may already have negative attitudes towards pornography, so any sense or degree of shaming them about their use may lead them to feel even worse, which is not therapeutic or beneficial for the client.

Several clinical implications can be drawn from the findings related to the moderating effect of religion on NPA and mental health outcomes. One such implication would suggest that therapists working with clients whose presenting concerns relate to pornography, *and* who also report that religiosity is of some importance to them, would be for therapists to be very careful about how they explore and discuss client attitudes about pornography in relation to their religious/spiritual beliefs. Any discussion or behavior from the therapist that might suggest that clients should feel shame or embarrassment from their consumption may drastically decrease the client's well-being. For example, a client attending counseling with a goal to quit viewing pornography because of negative emotions experienced after viewing it due to religious beliefs could experience such a decline in well-being if the therapist is not tactful in the approach to discussing this concern. Findings from this study would suggest that discussion of cognitive changes that imply the client should perceive pornography as (more) detrimental or immoral–even in an attempt to provide motivation to quit consumption–could lead the client to experiencing a significant decrease in their well-being. Another implication from these findings would suggest that a therapist working with a similar client, but who endorses high importance on religiosity, may not benefit from discussing the client's religious attitudes toward pornography since current findings do not indicate any change in life satisfaction from such attitudes.

APPENDICES

Attachment 1

**UMKC Department of Counseling Psychology and Counselor Education
MTurk Study Info Sheet**

Study Name: The Moderating Role of Religion in the Relationship between Attitudes toward Pornography and Mental Health Outcomes

Description: You are invited to participate in this online study that examines associations between religiosity (or the lack thereof), attitudes toward and us of pornography, and psychological outcomes. If you agree to take part in this study, you will be completing five main questionnaires and several demographic questions, which will take approximately 10 minutes of your time.

Eligibility (2 requirements): (1) you are an English speaking adult man (age 18 or older) AND (2) you have been a United States citizen for at least 10 years.

Compensation for participation: If you choose to participate in the current study, you will be paid $.25 for your time and completion of the study.

Researcher(s):   James Parker, M.S.; (801) 616-1179
                        Dr. Kimberly Langrehr, Ph.D.; (816) 235-2487

Link to Survey: TBD

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Project Title: The Moderating Role of Religion in the Relationship between Attitudes toward Pornography and Mental Health Outcomes
- James Parker, M.S. & Kimberly J. Langrehr, Ph.D.-

You are being asked to participate in a research study about the role of religion in pornography use and psychological outcomes. This study will be conducted by James Parker, a Counseling Psychology doctoral candidate at the University of Missouri-Kansas City. The faculty adviser for the study is Dr. Kimberly Langrehr, Associate Professor and Training Director in the Counseling Psychology doctoral program at UMKC. This study was exempt from review of the UMKC Institutional Review Board.

You are only eligible to participate if you meet <u>both</u> of the following two conditions: **(1) you are an English speaking adult man (age 18 or older); <u>AND</u> (2) you have been a United States citizen for at least 10 years.**

The purpose of the study is to examine associations between religiosity (or the lack thereof), attitudes toward and us of pornography, and psychological outcomes. If you agree to take part in this study, you will be completing five main questionnaires and several demographic questions, which will take approximately 10 minutes of your time.

Taking part in this research study is voluntary. Participation in this study is voluntary and you can choose to terminate the survey at any time or choose not to answer any question(s). You will not face any consequences for withdrawing.

This research is considered to be minimal risk. That means that the risks of taking part in this research study are not expected to be more than the risks in your daily life. There are no other known risks to you if you choose to take part in this study.

Benefits. Other people may benefit in the future from the information about the relationship between attitudes towards pornography, pornography consumption, religion, and psychological outcomes that result from participation in this study.

Compensation for participation. If you choose to participate in the current study, you will be paid $.25 for your time and completion of the study.

Participation is anonymous and confidential. The results of this research may be published or presented to others. However, only summary data will be reported.

The University of Missouri-Kansas City appreciates people who help it gain knowledge by being in research studies. It is not the University's policy to pay for or provide medical treatment for persons who are in studies. If you think you have been harmed because you were in this study, please call the researcher, Dr. Kimberly Langrehr at 816-235-2487 and James Parker at 801-616-1179. You should contact the Office of UMKC IRB at 816-235-5927 if you have any questions, concerns, or complaints about your rights as a research subject. If you need any counseling services, you may contact the counseling, health and testing center at 816-235-1635.

By clicking the next button below, you are indicating that (1) you have read this form, (2) you agree to participate in this study, and (3) you agree to have the information you share in the study be used for the stated research purposes.

Appendix A

Pornography Consumption

Please respond to the following question. As a reminder, your responses are anonymous. "*Within the past 6 months, how many times have you viewed pornography?*"

1. Never
2. Almost Never
3. Less than Once a Month
4. 1–3 Times Per Month
5. 1–2 Times Per Week
6. 3–4 Times Per Week
7. About Once a Day
8. More than Once a Day

How many hours, on average, do you spend viewing pornography in a given week (please type in your answer in numbers)? ___

Appendix B

Pornography-Related Attitudes Scale (Rasmussen et al., 2018)

Positive Attitudes Scale

Please rate your agreement with the following statements (1 = *Not at all*, 4 = *Somewhat*, 7 = *Completely*)

1. To what extent do you think that it is NORMAL for a man to view pornography?
2. To what extent do you think that it is MORALLY ACCEPTABLE for a man to view pornography?
3. To what extent do you think that it is NORMAL for a woman to view pornography?
4. To what extent do you think that it is MORALLY ACCEPTABLE for a woman to view pornography?

Negative Attitudes Scale

Please rate your agreement with the following statements (1 = *Strongly Disagree*; 2 = *Disagree*, 3 = *Disagree Somewhat*, 4 = *Neutral*, 5 = *Agree Somewhat*, 6 = *Agree*, 7 = *Strongly Agree*):

1. Viewing pornography gives me impure thoughts.
2. Viewing pornography violates my personal morals.
3. Viewing pornography compromises my sexual purity.
4. There is nothing wrong with viewing pornography.
5. Viewing pornography violates what I believe is God's law, nature's laws, or the laws of a higher power.
6. Viewing pornography violates my religious or spiritual beliefs.
7. Viewing pornography defiles me.

Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995)
(Note: Stress items will not be used)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0   Did not apply to me at all
1   Applied to me to some degree, or some of the time
2   Applied to me to a considerable degree or a good part of time
3   Applied to me very much or most of the time

1 (s)	I found it hard to wind down	0	1	2	3
2 (a)	I was aware of dryness of my mouth	0	1	2	3
3 (d)	I couldn't seem to experience any positive feeling at all	0	1	2	3
4 (a)	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 (d)	I found it difficult to work up the initiative to do things	0	1	2	3
6 (s)	I tended to over-react to situations	0	1	2	3
7 (a)	I experienced trembling (e.g. in the hands)	0	1	2	3
8 (s)	I felt that I was using a lot of nervous energy	0	1	2	3
9 (a)	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (d)	I felt that I had nothing to look forward to	0	1	2	3
11 (s)	I found myself getting agitated	0	1	2	3
12 (s)	I found it difficult to relax	0	1	2	3
13 (d)	I felt down-hearted and blue	0	1	2	3
14 (s)	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15 (a)	I felt I was close to panic	0	1	2	3
16 (d)	I was unable to become enthusiastic about anything	0	1	2	3
17 (d)	I felt I wasn't worth much as a person	0	1	2	3
18 (s)	I felt that I was rather touchy	0	1	2	3
19 (a)	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20 (a)	I felt scared without any good reason	0	1	2	3
21 (d)	I felt that life was meaningless	0	1	2	3

Appendix D
Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is: 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = agree, 7 = strongly agree.

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Appendix E
Religiosity Index (Blaine & Crocker, 1995; Exline, Yali, & Sanderson, 2000)

Please provide your response to the the following statements (1 = *Strongly Disagree*; 2 = *Disagree*, 3 = *Disagree Somewhat*, 4 = *Neutral*, 5 = *Agree Somewhat*, 6 = *Agree*, 7 = *Strongly Agree*):

1. Being a religious or spiritual person is important to me.
2. My religious or spiritual beliefs provide meaning and purpose to my life.
3. My religious or spiritual beliefs are what lie behind my whole approach to life.

How often have you participated in each of these activities *in the past MONTH?* Please use the following scale: 1 = not at all, 2 = once or twice, 3 = about once a week, 4 = more than once a week, 5 = daily or almost daily, 6 = more than once a day.

4. Prayed or meditated.
5. Read religious/spiritual books (including sacred texts from your faith tradition).
6. Watched/listened to programs on religious/spiritual topics.
7. Attended religious/spiritual services or meetings.
8. Thought about religious/spiritual issues.
9. Talked to others about religious/spiritual issues.

Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is *true* or *false* as it pertains to you personally.

1. It is sometimes hard for me to go on with my work if I am not encouraged.
2. I sometimes feel resentful when I don't get my way.
3. On a few occasions, I have given up doing something because I thought too little of my ability.
4. There have been times when I felt like rebelling against people in authority even though I knew they were right.
5. No matter who I'm talking to, I'm always a good listener.
6. There have been occasions when I took advantage of someone.
7. I'm always willing to admit it when I make a mistake.
8. I sometimes try to get even rather than forgive and forget.
9. I am always courteous, even to people who are disagreeable.
10. I have never been irked when people expressed ideas very different from my own.
11. There have been times when I was quite jealous of the good fortune of others.
12. I am sometimes irritated by people who ask favors of me.
13. I have never deliberately said something that hurt someone's feelings.

Appendix G
Political Affiliation

1. Please indicate the *political* leaning with which you *most* identify:
   a. Democrat
   b. Other
   c. Republican
2. Please indicate the *ideological* leaning with which you most identify:
   a. Liberal
   b. Independent
   c. Conservative
3. Please indicate the *philosophical* leaning with which you *most* identify:
   a. Authoritarian (state-imposed collectivism)
   b. Libertarian (voluntary regional collectivism)

Appendix H

Demographic Information

1. Please indicate your age:
2. What is your race/ethnicity?
   a. White/European American
   b. Black/African American
   c. Asian/Asian American
   d. Hispanic/Latino
   e. American Indian/Alaskan Native
   f. Biracial or Multiracial
   g. Other not specified _____
3. Please indicate your sexual orientation:
   a. Heterosexual
   b. Gay
   c. Bisexual
   d. If not listed, please specify: _____
4. What is your current relationship status?
   a. Single
   b. In a relationship
   c. Married/Partnered
   d. Divorced
   e. Widowed
5. What is the highest level of education you have received?
   a. No formal schooling
   b. Elementary school
   c. Middle school
   d. High school
   e. Associate's Degree
   f. Bachelor's Degree
   g. Master's Degree
   h. Doctoral or Professional Degree (e.g., Ph.D, MD, etc.)
6. If you reported having viewed pornography in the past 6 months, have you ever attended counseling services (i.e., met with a therapist) as a result of your pornography use?
   a. Yes
   b. No
   c. Not applicable to me

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VITA

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