THE EFFECT OF SOLO-MASTURBATION AND MORAL DISAPPROVAL ON THE

RELATIONSHIP BETWEEN INTERNET PORNOGRAPHY USE, RELIGIOUS

STRUGGLES, SEXUAL SHAME, AND DEPRESSION:

A MODERATED MEDIATION MODEL

by

Ken Derance Miller

Liberty University

A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree

Doctor of Philosophy

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ABSTRACT

Recently, the topics of Internet pornography use and masturbation have received increased attention among researchers, even though there is a cultural reluctance to discuss the common sexual behavior. This reticence is particularly true for religious and moral communities that have stigmatized the behavior and have historically viewed masturbation as taboo and morally offensive. Similarly, many religious groups morally disapprove of sexually explicit media. Despite morally disapproving of viewing pornography, the nearly universal availability of Internet pornography has resulted in an unprecedented increase in religious individuals viewing Internet pornography. Researchers have found a connection between the moral incongruence associated with Internet pornography use and psychological distress. Recent findings suggest a strong association between pornography use, depression, and masturbation. Although there is a recent surge in the study of masturbation and its relationship with psychological distress, no studies have investigated the effects of masturbation and moral disapproval on psychological distress. This study explores the effects of solo-masturbation and moral disapproval on the relationship between Internet pornography use, religious struggles, sexual shame, and depression. Using an online sample of religious participants (N = 804) that reported viewing pornography in the last month, the present study examined the conditional direct and indirect effects of solo-masturbation and moral disapproval on the hypothesized Internet pornography use-moral religious struggles-sexual shame-depression causal sequence. The results indicated a strong association between Internet pornography use, religious struggles, sexual shame, and depression, with moral disapproval moderating those relationships. Solo-masturbation did not significantly moderate any relationships in the model.

Keywords: Internet pornography use, moral disapproval, masturbation, religious struggles, sexual shame, depression, moral incongruence

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Internet Pornography Use (IPU)

CHAPTER ONE: INTRODUCTION

Internet pornography use (IPU) is at the fingertips of modern society. Mobile devices (tablets, smartphones) and virtual private networks provide instantaneous access to internet pornography with anonymity and at little or no cost to the viewer (Cooper, 1998; Putnam et al., 1999; Wéry & Billieux, 2017; Zhou, Paul, Malic, & Yu, 2019). With over half of the global population having Internet access (Kemp, 2020), IPU has become commonplace (McNabney et al., 2020) and has precipitated a growing body of IPU research.

In a broad sense, IPU research explores the effects of IPU on intrapsychic distress (Abu-raiya et al., 2015; Exline, 2013; Grubbs et al., 2015b, 2015c; Maddox et al., 2019; Perry, 2018), dyadic relationships (Bridges & Morokoff, 2011; Brown et al., 2017; Carroll et al., 2008; Kohut & Campbell, 2019; Perry, 2019; Volk et al., 2016, 2019, 2020), sexual behavior and satisfaction (Bőthe et al., 2019; Das, 2007; Leonhardt & Willoughby, 2019; Wright et al., 2017, 2019), and how religiosity affects IPU correlates (Dezutter et al., 2006; Grubbs et al., 2015; Leonhardt et al., 2018; Murray et al., 2007; Perry, 2016; Short et al., 2015; Vaillancourt-Morel & Bergeron, 2019; Volk et al., 2016, 2019, 2020). Previous studies examine the correlation between IPU and depression (Guidry et al., 2020; Leonhardt et al., 2019; Maddox et al., 2019; Perry & Whitehead, 2019; Perry, 2018c, 2019), IPU and moral religious struggles (Grubbs et al., 2017; McConnell et al., 2006; Wilt et al., 2016), IPU and sexual shame (Chisolm & Gall, 2015; Gilliland et al., 2011; Gordon, 2018; Kyle, 2013; Volk et al., 2019), and moral incongruence (morally disapproving of a behavior while still engaging in the behavior; Grubbs et al., 2015; 2018; Grubbs & Perry, 2019; Perry, 2017, 2018; Volk et al., 2019, 2020; Walton, 2019). Recently, the relationship between IPU and masturbation has received increased attention in the research literature (Jiao et al., 2019; Ley, 2019; Osadchiy et al., 2020; Patton, 1985; Perry, 2018c; Regnerus et al., 2017), with some

calling for more research regarding the potential moderating, mediating, or etiological role of solo-masturbation in pornography use (Ley, 2019; Perry, 2018b, 2018c; Prause, 2017; 2019).

Background of the Problem

Masturbation continues to receive little research attention (Hillman, 1966; Perry, 2018c; Prause, 2017) while being referred to as a "linchpin to the rest of the sexual attitudes in society" (Patton, 1985, p.140). Although solo-masturbation is widely practiced by men and women (Franic & Franic, 2011; Nechay, Ross, Stephenson, & O'Regan, 2004), it is rarely accounted for in IPU studies (Carvalheira et al., 2015). The reticence for discussing masturbation, emanating from longstanding cultural and religious stigma (Carvalheira et al., 2015; Haus & Thompson, 2019; Hillman, 1966), may factor into the omission of the construct from IPU research. A brief overview of the historical masturbation stigma is discussed in the next chapter.

Scholars are pushing through cultural and religious stigma and investigating the effect of masturbation on women's guilt and shame (Hungrige, 2016), its effect on partnered sex (McNabney et al., 2020; Regnerus et al., 2017), and hypersexuality (Zimmer & Imhoff, 2020). This study explores masturbation as a moderating construct in response to scholarly contention that masturbation should be controlled for in all IPU studies (Prause, 2017; Perry, 2018b). To that end, masturbation as a moderator is studied in conjunction with existing IPU correlations to address an existing research problem.

Statement of the Problem

IPU is correlated with religious struggles (Grubbs et al., 2017; Wilt et al., 2016), sexual shame (Chisolm & Gall, 2015; Phillips et al., 2019; Volk et al., 2016, 2019, 2020), and depression (Borgogna et al., 2019; Guidry et al., 2020; Perry, 2018; Willoughby et al., 2019). Moral incongruence amplifies the relationship between IPU, moral religious struggles, and

sexual shame (Maddock et al., 2019; Volk et al., 2019, 2020), with IPU having a direct relationship with depression as well (Volk et al., 2019). Perry (2020) suggests a significant relationship between IPU, depression, and masturbation, and that IPU is statistically insignificant when masturbation is excluded. This supports previous hypotheses (Perry, 2019; Prause, 2019) and the current study's hypotheses that IPU and masturbation are inextricable from each other in theory and practice.

The problem is that there are no studies that factor in the inextricability of solo-masturbation (SM) and IPU by accounting for SM as a potential moderator or mediator in their models. Additionally, there is no extant research that accounts for religiosity and masturbatory practices related to depression. Since the statistical relationship between IPU and depression is significant and IPU and SM appear to be statistically inseparable, exploring SM as a moderator or mediator related to IPU and depression is warranted.

Purpose of the Study

This study explores the relationship between IPU and depression, how moral religious struggles and sexual shame impact it, and how the ensuing relationships are potentially moderated by solo-masturbation and moral incongruence. This study extends the research and understanding of constructs delineated by Volk and colleagues (2019, 2020) and answers the call of Perry (2020) and Prause (2019) by exploring the potential moderating or mediating effect of SM on the IPU/depression relationship. Most importantly, this research provides greater understanding to clinicians regarding the underlying constructs of those that present in counseling sessions for IPU associated with depression.

Research Questions

The first research question for this study is, what is the relationship between IPU and depression, and will it be affected by SM and moral disapproval? This question builds on construct connections previously established between IPU and depression (Perry, 2020; Volk et al., 2019, 2020) and introduces a potential and unresearched moderating relationship of SM on existing constructs. It is anticipated that the relationship of IPU with depression will be impacted by SM's variance. Given the historical and cultural stigma inherent in SM, we anticipate that moral disapproval will primarily moderate the relationships between SM on the IPU/depression relationship.

The second research question for this study is, how will the relationship between IPU and moral religious struggles be affected by SM and moral disapproval? This question is congruent with past research that establishes a relationship between IPU and moral religious struggles (Grubbs et al., 2017; Volk et al., 2019, 2020; Wilt et al., 2016) and introduces SM as a potential moderator (Perry, 2019; Prause, 2019). It is anticipated that the IPU/moral religious struggle relationship will vary significantly, primarily moderated by moral disapproval.

The third research question for this study is, what relationships will religious struggles have with sexual shame and depression? Subsequently, what will be the relationship between sexual shame and depression? These questions are congruent with Volk and colleagues' (2019, 2020) research that establishes a relationship between IPU, moral religious struggles, and sexual shame (Grubbs et al., 2017; Wilt et al., 2016),as well as literature linking shame/shame-proneness and depression (e.g., Ashby et al., 2006; Bilevicius et al., 2018; Kim et al., 2011; Orth et al., 2006; Tangney et al., 1992; Tian et al., 2018)

The fourth research question for this study looks at how solo-masturbation and moral disapproval conditionally effect pornography use, moral religious struggles, and depression. Specifically, with the indirect effect of pornography use on depression through moral religious struggles will be conditional on levels of solo-masturbation? Further, will levels of moral disapproval moderated the conditional indirect effect on pornography use, moral religious struggles, and depression? These research question is grounded in previous research associating moral religious struggles with psychological distress and depression (Grubbs & Perry, 2019; Vaillancourt-Morel et al., 2017; Volk et al., 2019). This question is conceptually feasible as there is evidence for SM to be a potential moderator due to its statistical inextricability with IPU (Perry, 2020).

The fifth research question for this study addresses if solo-masturbation and moral disapproval persist throughout the model. Will the indirect effect between pornography use and depression through moral struggles and sexual shame be conditional on levels of solo-masturbation? Will he indirect effect between pornography use and depression through moral struggles and sexual shame be conditional on levels of moral disapproval? These question are warranted by both research that indicates shame is directly affected by moral religious struggles when moderated by moral incongruence (Volk et al., 2016, 2020), and the extant correlations in the research between shame and depression (Ashby et al., 2006; Bilevicius et al., 2018; Kim et al., 2011; Orth et al., 2006; Tangney et al., 1992; Tian et al., 2018), moral incongruence and depression (Guidry et al., 2020; Perry, 2018; Volk et al., 2019), and moral incongruence and shame (Chisolm & Gall, 2015; Volk et al., 2016, 2019). It is anticipated that depression levels will increase as moral religious struggles and sexual shame vary when moderated in a two-way interaction each by moral disapproval and SM.

The proposed research model, found in its final form in Figure 1, builds on construct correlations in previous studies. The constructs investigated in the model advance current IPU research by synthesizing and integrating related constructs. The proposed research model fills a gap in the literature that has implications in both theory and clinical practice (see Figure 2).

Assumptions and Limitations

This study uses Amazon's Mechanical Turk (MTurk) as the means to recruit participants and administer an experience-related clinical survey (Mullinix et al., 2015; Redmiles et al., 2019) while providing diverse and high quality data (Kennedy et al., 2018). This study employs catch trial methods to identify random responses that may inhibit the external validity of the study (Rouse, 2015).

Figure 1

Proposed Research Model
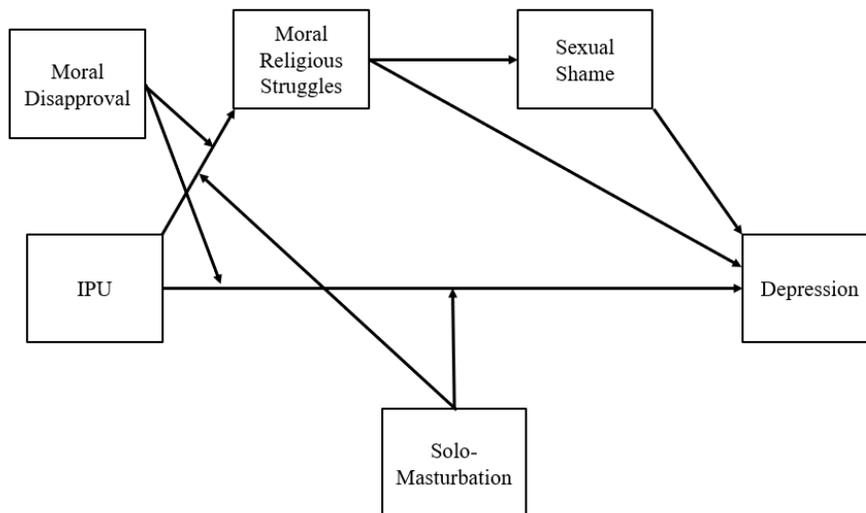
There are a few limitations to this study. The correlational design and cross-sectional sampling prohibit testing of causal relationships between the variables of the proposed model. Although a robust and widely used data collection platform, MTurk respondents may not be representative of Internet pornography users. This study is not an experimental design and

therefore may not provide a pristine pathological picture of the participants and the accompanying adverse effects of IPU.

Definition of Terms

Internet pornography use, for the purpose of this study, is defined as pornographic images viewed through electronic devices via the Internet. Specifically, it is the viewing of videos or other sexually explicit material depicting nudity and sexual behavior. This definition is congruent and reflects its use in recent studies (Busby et al., 2020; Campbell & Kohut, 2017; Grubbs et al., 2015; Leonhardt et al., 2019; Miller et al., 2019; Reid et al., 2011; Willoughby et al., 2018; Volk et al., 2016).

Depression is a psychological distress construct consisting of mood states that include hopelessness, decreased interest, self-deprecation, and anhedonia (American Psychiatric Association, 2013; Lovibond & Lovibond, 1995). This study uses questions from the Depression Anxiety Stress Scale – 21 (DASS-21) short version, which asks questions specific to the mood states above. The seven questions of the DASS-21 focus on the psychological distressors of depression rather than physiological states associated with depression (e.g., insomnia/hypersomnia, fatigue, weight gain/loss). Depression and psychological distress are associated with moral religious struggles (Ellison & Lee, 2010).

Moral religious struggles are an individual's guilt and worry concerning offenses perceived as wrong by the self in an effort to follow moral principles (Exline et al., 2014). When individuals fail in their attempts to follow moral principles, severe guilt ensues (Smith et al., 2002), and the perceived conflict between a person's behavior and their moral values results in psychological distress (Grubbs et al., 2017). Moral religious struggles is an established correlate (Exline et al., 2014; Grubbs et al., 2017; Wilt et al., 2016; Volk et al., 2020). Psychological

distressors, including sexual shame (Grubbs et al., 2017; Wilt et al., 2016), are linked with

spiritual struggles across the literature (Guidry et al., 2020; McConnell et al., 2006; Volk et al.,

2020).

Sexual shame is the devaluation of an individual's sexual thoughts, behaviors, or

experiences by self or others (Kyle, 2013). The moral and cognitive dissonance associated with

the self-devaluation of sexual shame can create feelings of unworthiness and loss of integrity

(Murray et al., 2007). The distress of sexual shame permeates an individual's identity, causing

them to adopt a negative evaluation of self and their sexual life (Gordon, 2018). Elevated levels

of sexual shame are related to higher levels of moral disapproval and moral incongruence

(Gordon, 2018; Volk et al., 2016).

Moral incongruence occurs when an individual morally disapproves of a behavior but

still chooses to participate in the disapproved behavior (Grubbs et al., 2019; Perry, 2018a, 2018b;

Volk et al., 2020). Religious people are prone to psychological distress when they engage in

behaviors they deem to be incongruent with their moral values, especially IPU (Grubbs & Perry,

2019; Volk et al., 2020). Moral incongruence is a common phenomenon in religious actors that

engage IPU (Grubbs & Perry, 2019). The interaction of religion and pornography, causing moral

incongruence, is emerging in IPU literature and is an important construct in understanding the

relationship between sexual behavior and psychological distress (Grubbs et al., 2020b).

Solo-masturbation is the self-stimulation of an individual's genitals (Bullough, 2002;

Hillman, 1966). Masturbation, also referred to as solo-masturbation, has been reported as early

as two months of age (Yang et al., 2005). Solo-masturbation is widely prohibited by world

religions, due in large part to Tissot's (1766) writings, who attributed a diversity of physical

maladies and even insanity to masturbation. This study adds to other research to study the impact of solo-masturbation on sexual behavior and psychological distress.

Significance of the Study

This study extends the research in three significant ways. First, this study extends the research that explores the effect of IPU on psychological distress, investigating how IPU interacts with depression through the clinical antecedents of moral religious struggles and sexual shame. Second, this study looks at the construct of moral incongruence and how it impacts and drives psychological distress. Third, the study responds to a gap in the literature calling for researchers to investigate the strongly associated but rarely addressed sexual behavior of solo-masturbation as a moderator, mediator, or possible replacement independent variable in IPU research.

This study is important to IPU research, in that it builds on previously correlated constructs and explores a new model that will assist researchers and clinicians alike. Clinicians will obtain new data that may provide insight into how to provide evidence-based interventions with clients presenting with moral incongruence, IPU, and sexual behavior issues. This study provides religious institutions and counseling organizations like the Association for Spiritual, Ethical, and Religious Values in Counseling (ASERVIC) with information helpful for those they serve while addressing a stigmatized issue with scientific rigor.

Organization of the Remaining Chapters

The second chapter is an in-depth exploration and synthesis of the extant literature on topics that provide a theoretical foundation for the study. Chapter 2 introduces IPU and current pornography use models that inform this study's model, and provides definitions of sexually explicit media. Next, the constructs of the proposed model are explored, and the connections and

correlations are delineated in sections that synthesize and group the constructs that explicate the proposed model: pornography use and psychological distress, religiosity and mental health, and the relationship between moral incongruence, moral religious struggles, and psychological distress. The next section of Chapter 2 includes a discussion of sexual shame and the relationship between moral incongruence, sexual shame, and depression, and continues with an exploration of the correlations between moral incongruence and depression, masturbation, IPU, and depression; masturbation and IPU; masturbation and depression; and ends with a discussion of solo-masturbation models extant in the literature. The second chapter concludes with a detailed discussion of the research questions, the hypotheses, and the resulting theoretical model.

The third chapter describes the research method. This includes the method of data collection, measures that were used, and data analysis procedures. The fourth chapter focuses on the study's results, including an explanation of how the data was obtained and how the hypotheses were tested using statistical analyses. Any supplemental analyses will be described in this section. Lastly, the fifth chapter explores the findings of this study. This includes a summary of the results, an interpretation of these results, how these findings relate to previous research, and the implications of the findings. Limitations of this study and areas for future research are also discussed.

Summary

People that seek out counseling for IPU often present with psychological distress and commonly have religious leanings. Research suggests that the relationship between IPU and depression is affected by the impact of moral incongruence on moral religious struggles and sexual shame. These relationships have not been studied in the proposed configuration; this study seeks to investigate those relationships. Included in this study is the introduction of solo-

masturbation as a potential moderator in these relationships. The research goal is to provide

researchers and clinicians with sound research and information that leads to successful clinical

interventions. The next chapter reviews the literature about the constructs mentioned above,

providing an overview and synthesis of previous and current research.

CHAPTER TWO: REVIEW OF THE LITERATURE

The study explores a proposed etiological shift in the study of the effects of IPU on depression (Leonhardt et al., 2019; Perry, 2018c; 2019; Prause, 2019). The proposed shift suggests that solo-masturbation may moderate, mediate, or confound current research that explores the cognitive and moral effects of IPU on depression, or it may function as the independent variable (Perry, 2019, 2020; Prause, 2019). This shift in etiological focus is the result of recent studies that reveal a weak positive correlation between Internet pornography use and relationship satisfaction apart from the moderating effect of high levels of moral disapproval (Guidry et al., 2020; Grubbs et al., 2019; Volk et al., 2020) and a strong, negatively correlated relationship with solo-masturbation and depression (Perry, 2020).

This chapter presents a review and synthesis of extant literature pertaining to Internet pornography use and the relationship between moral incongruence and depression, emerging pornography use models, and current research that explores a potential shift in etiological directionality. The synthesis presented in this chapter results in the study's research questions and a research model that further explores a potential shift in pornography use's causal directionality.

Internet Pornography Use

Erotic images designed for public consumption have evolved from erotic acts depicted in the Turin Erotic Papyrus 55001 (1292–1075 B.C.E.; O'Connor, 2001) to the proliferation, in current times, of sexually explicit images and videos available to the 4.5 billion people with access to the Internet (Kemp, 2020). Three of the fifteen most visited websites in the United States are adult sites ("Top Websites Ranking," 2020), making it unmistakable that Internet pornography has, for some time, been affordable, accessible, and relatively anonymous (Cooper,

1998). The explosion of IPU and the resultant increase in IPU research has led to little agreement among researchers regarding the categorization and definition(s) of sexual media (Campbell & Kohut, 2017; Short et al., 2012; Solano et al., 2020). The lack of categorical clarity and agreement among researchers may be due to how pornography viewers rate sexual media on a moral disapproval spectrum (Willoughby & Busby, 2016). Given a moral disapproval spectrum that ranges from scrupulosity (Borgogna et al., 2018) to shared concordant viewing (Carroll et al., 2016; Kohut, Fisher, & Campbell, 2017; Kohut et al., 2018; Poulsen, Busby, & Galovan, 2013), it is necessary to briefly explore emerging pornography use models and their impact on current research.

Emerging Internet Pornography Use Models

Research on the effect of pornography on spirituality (Griffin et al., 2016; Murray et al., 2007), differences in gender use (Borgogna et al., 2019; Perry, 2016), couples (Grov et al., 2011; Grubbs et al., 2015b; Volk et al., 2020), and psychological distress (Grubbs et al., 2015; Guidry et al., 2020; Perry, 2018; Wilt et al., 2016) has burgeoned in the last two decades (Fisher & Kohut, 2020). Though research has increased, there has been little consensus on the definition of pornography (Short et al., 2012; Willoughby et al., 2019) or how sexual media use is measured (Kohut et al., 2019; Willoughby et al., 2016). Until recently, there were no extant models for researchers to use as frameworks for their interpretation of findings (Leonhardt et al., 2019; Perry, 2017; Wright, 2011). Researchers are striving to establish a model that encompasses the body of research that finds both a negative and positive influence of IPU on relationships and individuals (Kohut & Campbell, 2019). A brief review of five recent models that inform the proposed serial mediation model of this study follows.

3AM Model. The advent of the Internet, coupled with the instantaneous access of sexually explicit media, led Wright (2011) to explore and then delineate how mass media consumption of sexually explicit media affected the sexual scripts played out in the lives of young people's sexual behaviors. Building on the work of Huesmann (1986) and Bandura (2001), Wright theorizes that the cognitive scripts that are enacted by young people are the result of a complex interaction between the *acquisition, activation, and application* (3AM) of sexually explicit media. This model's strength is that it accounts for the multifaceted and intricate interplay between content, audience, and situational factors across all three phases of the model. While the 3AM model is a comprehensive heuristic, it focuses primarily on the antecedents of psychological distress.

Antecedent-Context-Effects (ACE) Model. Campbell and Kohut (2017) offer a less complicated pornography use model, hoping that researchers will adopt their model as a guide for future research, primarily in dyadic research. The ACE model narrows down the list of use antecedents significantly (e.g., gender, culture, individual differences, life experiences) and classifies the effects of IPU to positive, negative, and neutral results (p. 8). The contexts of use are the least defined of the model's constructs and provide the researcher with flexibility in design. The authors call upon the research community to adopt a standardized definition of pornography, but they do not offer one. The ACE model is strong on theory but lacks potential pathways of IPU for researchers to explore. Leonhardt and colleagues (2019) provide both an organizational framework for IPU research and definitions.

Sexual Quality Model. The Sexual Quality Model (SQM) synthesizes the 3AM and ACE models to account for the disparate harms and benefits of IPU research (Leonhardt et al., 2019). A primary distinction of the SQM is the development of a typology of sexual media

content. Leonhardt and colleagues synthesize previous research to create three sexual media categories: suggestive, explicit, and paraphilic. These categories are discussed at length in the following section. The consumption of sexual content is moderated by sexual scripting sources (family, peers, and romantic partners; p. 2241) and applied to behaviors according to known scripts of each SEM category. Couple congruency then moderates the applied scripts and affects long-term and short-term sexual quality (p. 2235). The SQM model goes into intricate detail of potential congruence moderators, including sexual communal strength, communication, intimacy technique, arousal, and openness (p. 2238). The model is well-reasoned and articulate; as a result, it has become a target article of some discussion.

A primary strength of the SQM lies within its attempt to provide researchers with a refined pornography typology that may lead religious communities to move away from an over-simplified and generalized definition of sexual media (Douglas & Moore-Keish, 2019), though others note concerns that strict classifications were problematic in this stage of research (Kohut & Campbell, 2019). The SQM also provides valuable insight into pathways of IPU, short- and long-term sexual quality (Grubbs et al., 2019), and sexual scripting (Willoughby et al., 2019). Other researchers and clinicians, while applauding the SQM as a framework to interpret the complexity of IPU, contend the SQM fails to adequately address IPU and masturbation (Ley, 2019; Perry, 2019; Prause, 2019) and also does not adequately allow for the presence of sexual satisfaction across the three types of media described in the SQM model (Kohut & Campbell, 2019). The authors of SQM responded with a simplified version that addresses many of the researcher's concerns but is unable to adequately address the emergent construct of moral incongruence (Leonhardt et al., 2019).

Pornography Problems Due to Moral Incongruence Model. The Pornography Problems Due to Moral Incongruence Model (PPMI) was created to explore and more accurately assess the level of moral incongruence when an individual engages in IPU while morally disapproving of the behavior (Grubbs et al., 2019). For the PPMI authors, moral incongruence is a use pathway distinct from a dysregulation pathway, where dysregulation is a by-product of emotional impairment, inability to cope, impulsivity, and sensation-seeking (p. 399). Further, the PPMI model proposes a shift away from the language of perceived addiction of pornography to moral incongruence to describe the aggregate effect of moral disapproval on religious IPU participants. Grubbs and colleagues contend that PPMI may be a significant predictor of psychological distress beyond self-perceived addiction to pornography. PPMI is also strongly associated with moral religious struggles (Guidry et al., 2020; McConnell et al., 2006; Grubbs et al., 2017a; Wilt et al., 2016; Volk et al., 2020) and sexual shame (Volk et al., 2020). These empirical associations stand as a cornerstone of the theoretical framework of the model proposed in this study.

Sexual Media Types

Researchers are beginning to draw a line between erotica and pornography (Bridges & Morrokoff, 2011; Leonhardt & Willoughby, 2017) to better account for the divergent results achieved in IPU studies (Kohut et al., 2017; Leonhardt et al., 2019; Perry & Hayward, 2017). The divergent results are due in large part to the wide-ranging values of participants' sexual media (Masters et al., 2013; Willoughby & Busby, 2016), giving rise to the need to explore a contextual framework of sexual media with more precision (Leonhardt et al., 2019; Ley, 2019). For this study, the contextual framework considers the utilization and selectivity of pornography by gender (Busby et al., 2020) since women use sexual media as part of sexual interaction with

their partner, while men primarily use sexual media for masturbation (Perry, 2019; Prause, 2017).

Further, this study reviews an emerging multidimensional approach that categorizes sexual media

into suggestive/provocative, explicit, and paraphilic (Leonhardt et al., 2019).

Suggestive or provocative. Suggestive or provocative media portrays a person sexually

in a nonexplicit way (Leonhardt & Willoughby, 2019). Nonexplicit sexual media has arousal

potential (Malamuth & Impett, 2001; Wright, 2012), but most researchers omit its measurement

(Leonhardt et al., 2019) and fail to account for its potential relationship to solo-masturbation

(Perry, 2019). Research suggests that suggestive or provocative media may influence sexual

scripts typically associated with explicit pornography use (Dillman & Carpentier, 2016).

Explicit. Sexually explicit media is defined in recent studies as mainstream pornography

explicitly depicting sexual acts, viewed via the Internet (Busby et al., 2020; Leonhardt et al.,

2019; Miller et al., 2019; Willoughby et al., 2018). More precisely, these explicit sexual acts of

mainstream pornography are delineated in the Pornography Usage Measure – Short Version

(PUM-SV) to include heterosexual, homosexual, and multiple partner sexual encounters (Busby

et al., 2020). This definitional shift is a response to a call in the literature to address the

complexity and multidimensionality of sexual media in general, and specifically Internet

pornography (Busby et al., 2020; Leonhardt & Willoughby, 2019). The definition excludes

sexually explicit media consumed via DVD, magazines, or cable television (Solano et al., 2020).

The goal of employing this definition of pornography is to provide more precise insight into the

scripting effects (Perry, 2017; Sun et al., 2016) and motivations for viewing IPU (Grubbs et al.,

2019; Perry, 2019).

Paraphilic. Paraphilic sexual media are equated with paraphilic sexual disorders (Ley &

Grubbs, 2017), defined in the *Diagnostic and Statistical Manual – 5th Edition* (APA, 2013),

commonly found in forensic diagnoses (First, 2014). Sexual media containing sexual acts associated with paraphilia (voyeurism, exhibitionism, frotteurism, masochism, sadism pedophilia, fetishes, transvestism) are therefore not considered mainstream pornography and are excluded from this study's definition of sexually explicit media. The exclusion of uncommon sexual media (Willoughby & Busby, 2016) is a move towards methodological rigor in this study and in Internet pornography research in general (Grubbs et al., 2019).

Internet Pornography Use and Psychological Distress

Individuals who perceive their IPU as problematic often experience psychological and emotional distress including general anxiety (Borgogna et al., 2018; Grubbs et al., 2014; 2015; Guidry et al., 2020), relationship anxiety (Leonhardt et al., 2018; Tylka, 2015; Volk et al., 2019), depression (Borgogna et al., 2018; Guidry et al., 2020; Levin, Lillis, & Hayes, 2012; Nelson et al., 2010; Perry, 2018; Willoughby et al., 2019; Yonker et al., 2012; Volk et al., 2019), and an inability to control their use (Bőthe et al., 2019; Grubbs et al., 2018, 2020; Kraus & Sweeney, 2019). These psychological stressors are exacerbated by feelings of scrupulosity (violation of religious or moral doctrine; Borgogna et al., 2018) and moral disapproval of IPU (Guidry et al., 2020; Grubbs & Perry, 2019). The roles of religiosity and moral disapproval in the study of pornography are important (MacInnis & Hodson, 2016).

Research indicates that IPU in individuals with higher levels of religiosity and moral disapproval experience more intense moral religious struggles (Exline, 2013: Grubbs et al., 2017; Wilt et al., 2016) and sexual shame (Gilliland et al., 2016; Gordon, 2018; Volk et al., 2016, 2019). The cognitive dissonance and inconsistency between moral belief and moral behavior (Grubbs et al., 2018) exhibit as intrapsychic spiritual and psychological distress (Abu-raiya et al., 2015; Exline, 2013; Grubbs et al., 2015b, 2015c; Perry, 2018). This section of the study reviews

the relationship between religiosity and mental health, IPU, moral incongruence, moral religious struggles, sexual shame, and depression.

Religiosity and Mental Health

Research consistently reveals a positive relationship between religion, spirituality, and well-being (Kim-Prieto & Miller, 2018; Koenig et al., 2012; Van Cappellen et al., 2016). Religion and spirituality indirectly affect the environmental, social, and psychological domains associated with well-being. Conservative Christians hold a more optimistic worldview than their irreligious counterparts (Krause & Hayward, 2014); the literature indicates that church attendance and concurrent time spent with friends and family contribute to their overall sense of well-being (Lim, 2016). Religious devotees turn to spiritual coping strategies to manage stress and life change (Gall et al., 2013; Greenfield & Marks, 2007).

Religious people that literally interpret the religious content of their faith (e.g., fundamentalists, conservatives) are more likely to experience psychological distress (Dezutter et al., 2006; Leonardi & Gialams, 2009). Moreover, those with an extrinsic religious orientation, religious people who use religion for self-justification and social ends (Allport & Ross, 1967), report lower levels of well-being (Dezutter et al., 2006) and higher levels of psychological distress (Salsman & Carlson, 2005). In contrast, those with a highly integrated and mature faith tend to have less psychological distress and higher levels of well-being (Hackney & Sanders, 2004; Hovey et al., 2014). Thus, positive religious coping is beneficial to religious adherents, though this is not the case for those that experience virtuous striving, suffering, social tension, or perceive supernatural evil (Exline & Rose, 2016) and have an extrinsic outlook (Hovey et al., 2014). Religiosity, then, can be intrapsychically harmful and serve as a double-edged enigma

capable of enriching well-being or producing painful intrapsychic religious struggles (Pargament & Lomax, 2013).

Of the four broad categories of religious struggles (suffering, virtuous striving, perceptions of supernatural evil, and social strain), this study focuses on virtuous striving (Exline & Rose, 2016). Virtuous striving is the attempt to meet divine, institutional, and religious community rules and standards while cultivating virtues of a proper religious believer (Exline & Rose, 2016). Individuals that fail to meet divine, institutional, or community rules and standards develop negative religious coping strategies, or moral religious struggles (Exline, 2013). Thus, the negative side of religiosity emanates from moral religious struggles that generate conflict and doubt, resulting in belief-dissonance in God and faith (divine), one's core beliefs/standards/rules (intrapersonal), and one's religious community (intrapersonal; Abu-Raiya et al., 2016; Pargament et al., 2005). The ensuing moral gap created by an individual's belief that their behavior is inconsistent with their moral rules and standards results in moral incongruence, which negatively affects the individual's sense of spiritual self-efficacy (Exline, 2013). A discussion of the intersectionality of moral incongruence, moral religious struggles, and their effect on psychological distress follows.

Moral Incongruence, Moral Religious Struggles, and Psychological Distress

IPU continues to be a morally charged issue for religious individuals (Grubbs et al., 2018; Sherkat & Ellison, 1997; Thomas, 2013) because of the deep inculturation of morality and religiosity in morally conservative communities (Hook et al., 2015; Perry & Whitehead, 2020). Religious individuals tend to adopt the corporate belief system's values (Mannheimer & Hill, 2015) and promote moral disapproval of acts they believe do not conform to the moral standard of the group (Beardsley, 1970; Scheff, 2003). The influence of organized religion on the

development of sexual values (Short et al., 2015) has resulted in censorship discourse (Droubay et al., 2018) and a call to adherents to abstain from IPU (Griffin et al., 2016; Grubbs et al., 2017; Perry, 2018; Perry & Whitehead, 2018; Smith et al., 2002). Despite their belief that viewing explicit sexual media is morally wrong, some individuals still view it and develop self-indignation due to moral incongruence (Beasley, 1970).

Researchers continue to explore what drives religious individuals, especially more conservative religious populations, to engage in IPU (Perry & Whitehead, 2020). Interestingly, states in America with a larger religious population search for internet pornography at a higher rate than others (MacInnis & Hodson, 2015, Perry & Whitehead, 2020); at the same time, individual levels indicate there is a negative association between religiosity and IPU (MacInnis & Hodson, 2015; Perry & Whitehead, 2020). The moral pressure exerted by communities (Mannheimer & Hill, 2015; Perry & Whitehead, 2020; Scheff, 2003), both religious and political, may drive people to a paradoxical solution that is at once a more socially desirable (MacInnis & Hodson, 2015) yet morally deplorable (Mannheimer & Hill, 2015) means of exploring sexuality: covertly engaging IPU.

The spiritual struggles individuals incur with IPU, combined with the moral disapproval of IPU from their moral community, can result in highly distressed users (Grubbs & Perry, 2019; Vaillancourt-Morel et al., 2017) and are positively correlated with spiritual struggles across empirical studies (Guidry et al., 2020; McConnell et al., 2006). Spiritual struggles are strongly associated with somatization, especially those who classify themselves as very religious (Ellison et al., 2013; McConnell et al., 2006). Younger females may incur anxiety associated with spiritual struggles (McConnell et al., 2006) and associate with a broader anxious demographic when illness or injury is present (Abu-raiya et al., 2015; Ellison et al., 2013; Grubbs et al.,

2015c). Moral religious struggles significantly and positively predict an increase in shame when moral disapproval moderates the relationship between moral religious struggles and shame (Volk et al., 2016, 2020). Depression is strongly associated with spiritual struggles and neuroticism (Abu-raiya et al., 2015; Wilt et al., 2017), and is strongly correlated with intra- and interpersonal struggles (Abu-raiya et al., 2015; Volk et al., 2019). Thus, it is plausible that moral disapproval plays a role in moderating a relationship between IPU and moral religious struggles that may subsequently increase sexual shame.

Sexual Shame

Shame is an emotion grounded in morality and social perception (Konstan, 2003), considered by some as the premier self-conscious emotion (Scheff, 2003) and a cornerstone of the intrapsychic cohort of guilt, embarrassment, and pride (Lewis, 1971; Tangney & Tracy, 2012). In contrast to the often-coopted emotion guilt, shame can shape a person's identity (Leeming & Boyle, 2013; Pinto-Gouveia & Matos, 2011), especially when the individual is part of a religious or moral community. Conservative moral communities often serve as an external approval filter of its adherents, exerting a de facto external locus of control (Mannheimer & Hill, 2015) and triggering a perceived or real fear of community humiliation (Robertson et al., 2018) due to non-adherence of community rules, standards, and goals (Barrett et al., 2016). Lewis (1971) provides insight into the negative self-evaluation function of shame, suggesting that painful self-devaluation results in acute powerlessness and hopelessness in individuals. This sense of complete debasement is esteem-related and emanates from global self-evaluation (Barrett et al., 2016), belief that one's character is hopelessly unmodifiable (Janoff-Bulman, 1979), and defensive reactions and interpersonal isolation (Tangney et al., 2007b). Shame can permeate the self and affect any thought or behavior deemed as incongruent with the self or

others (Leeming & Boyle, 2013; Kyle, 2013; Volk et al., 2016), including the sexual domain of both men (Gordon, 2018) and women (Brown, 2006; Murray, Ciarrocchi, & Murray-Swank, 2007). Shame develops when an individual's standards, rules, and goals are incongruent with their behavior (Barrett et al., 2016). Sexual shame develops when one violates their sexual standards, rules, and goals for sex.

Sexual shame, then, is a painful self-conscious emotion driven by a real or perceived devaluation (Lewis, 1971) of an individual's sexual thoughts, behavior, or experiences by self or others (Kyle, 2013). Researchers have found that fundamentalist religiosity (Grubbs et al., 2015; Volk et al., 2016, 2019, 2020), hypersexual behavior (Gilliland et al., 2011, 2016; Reid et al., 2014), childhood sexual abuse (Feiring & Taska, 2005; Pulverman & Meston, 2019), religious and spiritual struggles (Grubbs et al., 2017; Volk et al., 2016, 2019, 2020; Wilt et al., 2016), viewing of sexually explicit media (Floyd et al., 2020; Chisholm & Gall, 2015; Gilliland et al., 2011; Gordon, 2018; Kyle, 2013; Volk et al., 2019; 2020), depression (Volk et al., 2019), and moral incongruence (Volk et al., 2016; 2020) contribute to an individual's feelings of sexual shame. One of the primary factors impacting the extensive intrapsychic pain of sexual shame is the moral disapproval of the devalued sexual thought, behavior, or experience.

Moral Incongruence, Sexual Shame, and Depression

In the context of pornography research, people that experience moral incongruence engage in paradox: viewing explicit sexual media even though they morally disapprove of their actions (Gilliland et al., 2016; Gordon, 2018; Vaillancourt-Morel & Bergeron, 2019; Volk et al., 2016; Volk et al., 2019), while holding tightly to a pornography-averse scrupulosity (Borgogna & McDermott, 2018). The resulting self-conscious disapproval of their moral dissonance (Tangney et al., 1992) is strongly shaped by the moral community in which they find themselves (Heller,

2003; Scheff, 2003). A person's negative global self-assessment is made worse (Tangney, 2007) because the individual's desire to belong and to be esteemed by their moral community (Lewis, 1971) is lost in not only their self-disapproval but the disapproval of others (Scheff, 2003). Self-blame, coupled with moral community blame, fuel a moral incongruence/sexual shame cycle (Vaillancourt-Morel & Bergeron, 2019).

Sexual shame causes self-blame (Brown, 2006; Tangney et al., 1992) and makes one feel undeserving of approval and devalued by their moral community (Lewis, 1971; Roberston et al., 2018). Religious/moral communities often hold their adherents to strict sexual standards (Mannheimer & Hill, 2014), leading to sexual/religious identities that are more susceptible to sexual shame (Ellison, 2013) and a negative evaluation of self (Gordon, 2018). This negative self-identity may persist, be pervasive (Pinto-Gouveia & Matos, 2011), and determine how a person sees themselves and others sexually (Mollon, 2005; Murray et al., 2007). Self-conscious ruminations, especially thoughts associated with shame, are strongly associated with and can lead to depression (Orth et al., 2006).

Previous research and models indicate there is a relationship between individuals that view internet pornography yet morally disapprove of it (moral incongruence) and sexual shame (Chisolm & Floyd et al., 2020; Gall, 2015; Gilliland et al., 2011; Gordon, 2018; Phillips et al., 2019; Volk et al., 2016. 2019). Similarly, there is a substantial body of research and models that reveal an association with IPU, moral incongruence, and depression (Borgogna et al., 2018; Bradley et al., 2016; Guidry et al., 2020; Nelson et al., 2010; Perry, 2018; Volk et al., 2019). The robust relationship between shame/shame-proneness and depression has been widely reported in the literature (e.g., Ashby et al., 2006; Bilevicius et al., 2018; Kim et al., 2011; Orth et al., 2006; Tangney et al., 1992; Tian et al., 2018), with the associations between moral incongruence and

shame (Chisolm & Gall, 2015; Volk et al., 2016, 2019) and moral incongruence and depression extant in the literature as well (Guidry et al., 2020; Perry, 2018; Volk et al., 2019).

Moral Incongruence and Depression

Perceptions of what type of sexual media is pornographic or morally unacceptable vary widely (Leonhardt et al., 2019), with the research community still attempting to provide a definitive definition or categorization of pornography and explicit sexual media (Solano et al., 2020). Though researchers have yet to provide a definition, moral communities continue to provide their community-specific definitions (Mannheimer & Hill, 2015) that elicit negative overtones for youth (Nelson et al., 2010; Perry, 2018), young adults (Vaillancourt-Morel et al., 2017), and older adults that engage in IPU (Wright, 2013). Moral definitions of the community translate to self-definitions that tend to elevate negative psychological distress (Patterson & Price, 2012). When the individual's self-definition of pornographic differs significantly in explicit content than their values, there is a greater likelihood of developing depressive symptoms (Willoughby et al., 2019). The depressive symptoms related to IPU are more prevalent for men attempting to escape negative emotions (Borgogna, 2018) and women struggling with relational problems due to IPU (Borgogna, 2018), with one study where gender played no role in moderating the IPU/depression relationship (Willoughby et al., 2019). Perry's (2018) findings are consistent with previous research indicating that morally incongruent IPU men, not women, are more prone to experience depressive symptoms.

In the same study by Perry (2018), a cross-sectional and longitudinal study with a large sample ($N = 2,296$), American men who morally approved pornography reported depressive symptoms only when IPU was high. In contrast, depressive symptoms did not increase significantly even as frequency increased in men that believe IPU is always wrong. These

findings led Perry to conclude that moral incongruence predicts depressive symptoms, not IPU.

Similar relationships between moral disapproval, IPU, and depression (moral incongruence)

were found by Guidry and colleagues (2019), showing a statistically significant interaction

between moral incongruence and depression. Their findings differed slightly from the Perry

study, in that higher levels of morally incongruent IPU led to higher levels of depression for

those in relationships with a committed partner. Concordantly, other research of those who

morally disapprove of IPU but still engage in it experience higher levels of depressive symptoms

(Grubbs et al., 2014; Grubbs et al., 2018).

As researchers learn more about the relationship between moral incongruence and

depressive symptoms, more evidence shows that moral disapproval or IPU alone do not predict

depressive symptoms (Grubbs et al., 2015; Guidry et al., 2020; Perry, 2018; Volk et al., 2019).

These findings provide enough evidence to warrant further exploration of the relationship

between moral incongruence and depression and, at the same time, ask a salient question

regarding the non-relationship between IPU and depression: What covariates exist in the

IPU/depression relationship, or what may be confounding researchers' results? Perry (2018) and

Prause (2019) suggest that researchers consider solo-masturbation not only as a moderator but as

a potential motivator for IPU.

Masturbation, Internet Pornography Use, and Depression

Perspectives and attitudes toward masturbation vary considerably (Castellini et al., 2016),

with researchers treating masturbation with scientific objectivity (Carvalheira et al., 2015; Das,

2007; Miller et al., 2019; Perry, 2019; Rowland et al., 2020; Wilkinson & John, 2018), in

contrast with conservative cultures (Das, 2007) and strict religious communities that take a

disparaging or even condemnatory stance toward masturbation (Black, 1995; Patton, 1985; Haus

& Thompson, 2019). Some contend that the historically condemnatory posture of orthodox Christianity towards masturbation began with the etymological formation of the word from the Latin *manus* (hand) and *stupro* (defile), inferring disapproval and stigma of its practice (Bullough, 2002). Scholars credit the Swiss physician Tissot (1766) for much of masturbation's stigmatization to this day; his interpretation of the story of Onan (Genesis 38:9) declared masturbation as morally evil, with accompanying psychological ("masturbatory insanity") and physical (e.g., coughing, fever, pimples, blisters, tumors, constipation) effects (Bullough, 2002; Garlick, 2012; Patton, 1985; Stolberg, 2003). Though Tissot's comorbid masturbatory physical maladies have been shown to be spurious, many conservative Protestants, Orthodox Jews, and Muslims continue to view the behavior as morally wrong or go so far as to take an Onanistic view of masturbation (Black, 1995; Patton, 1985; Hoseini, 2017).

Masturbation and IPU

Masturbation is a common sexual behavior (Bullough, 2002; Gerressu et al., 2008; Madanikia et al., 2013) that, throughout the lifespan, is extant in 90% to 94% of males and 50% to 60% in females (Franic & Franic, 2011; Nechay, Ross, Stephenson, & O'Regan, 2004) with masturbatory behaviors beginning in early childhood at about two years of age (Wilkinson & John, 2018; Yang et al., 2005). The historical and medical ubiquity of masturbation, combined with the prevalence of IPU and its increased use (Short et al., 2012), has resulted in a symbiotic relationship that has largely remained a euphemism in both culture and research (Garlick, 2012). That is, IPU is significantly about masturbation (Baćak & Štulhofer, 2011; Carvalheira et al., 2015; Garlick, 2012; Perry, 2018b, 2018c; Prause, 2017, 2019; Regnerus et al., 2017; Strager, 2003) with greater IPU associated with increased solo-masturbation frequency (Carvalheira et al., 2015; Miller et al., 2019).

Using electroencephalography (EEG) and comparing the use of pornography for masturbation stimulation or fantasizing for masturbation stimulation, Prause (2017) found that masturbation is a more important factor than the modality of stimulation (IPU). Consequently, Prause (2019) suggests that studies of IPU should control for masturbation, proposing effects of IPU content may be predictive of future behaviors. Perry (2019) brings to light a noticeable gap in the literature: solo-masturbation is rarely considered a moderator of IPU and should, at the very least, be considered as a primary motivator of IPU. In a recent study, Perry (2020) found that masturbation was strongly associated with IPU, depression, and relational happiness and may be a mediator in the relationship between IPU and relational happiness. The findings of the Perry study are congruent with other studies that found that masturbation, particularly in men, was a predictor of IPU (Grubbs et al., 2019; Miller et al., 2019).

Masturbation and Depression

Male masturbation has been linked to diminished happiness (Regnerus & Gordon, 2013), with lower frequency of masturbation increasing self-reported happiness (Das, 2007). Ego-dystonic masturbation (solo-masturbation viewed by the actor as repugnant or inconsistent with one's values) is strongly associated with depression (Castellini et al., 2016) and contributes to masturbatory guilt in cultures with strict behavioral mores (Aneja et al., 2015; Chakrabarti et al., 2002). Some have responded to masturbatory guilt with abstinence for fear of being perceived as hypersexual or abstain from stopping what they perceive to be compulsive behavior (Zimmer & Imhoff, 2020).The psychological effects and impact on the quality of life due to masturbation remain consistent for both sexes (Långström & Hanson, 2006). Like men, women suffer from masturbatory guilt, shame, and stigma (Emmers-Sommer et al., 2018; Haus & Thompson, 2019; Morales et al., 2015) even though they masturbate on average less than men (Långström &

Hanson, 2006). Female motivation to masturbate might be to complement a healthy sexual life (Das, 2007; Regnerus et al., 2017) or to compensate for sexual desire discrepancy with their partner (Das, 2007; Prause, 2019; Regnerus et al., 2017). When women engage in masturbation, they experience better sexual response outcomes as IPU increases (McNabney et al., 2020) but experience lower relational happiness (Perry, 2020). Depressed women desire solo-masturbation more than non-depressed women (Brody & Nicholson, 2013), and women with single or recurrent episodes of depression report a higher frequency of masturbation (Cyranowski et al., 2004; Laurent & Simmons, 2009). In both women and men, motivation and directionality in the masturbation/depression relationship vary across the literature (Perry, 2020). One thing is certain: when masturbation is accounted for where IPU, masturbation, and psychological distress are the focus, masturbation plays a significant role, whether it be moderator, mediator, or motivator.

     Solo-Masturbation Models. Although comprehensive, Leonhardt and colleagues' (2019) SQM model does not sufficiently consider the moderating, mediating, or motivating role in IPU (Prause, 2019; Perry, 2019). In the SQM, masturbation is first treated as a potential reinforcing moderator in a reward of IPU in the sexual response cycle (Leonhardt et al., 2018). In his solo-masturbation as moderator model (see Perry, 2019, Fig. 1), Perry places IPU as the independent variable, with sexual quality (short- and long-term) as the dependent variable, mediated by sexual scripts and moderated by solo-masturbation both as reinforcement (3AM) and use patterns (ACE). Perry contends the solo-masturbation as a moderator is probable when IPU is the independent variable, but goes further to contend that the SQM completely neglects masturbation as a motivator, in essence, becoming the independent variable in solo-masturbation as motivator model (see Perry, 2019, Fig. 2).

Hypotheses Hand Theoretical Model

The extant literature reveals there is a connection between IPU and moral incongruence (IPU despite morally disapproving of it; Grubbs et al., 2015a, 2018a, 2020a; Grubbs & Perry, 2019; Guidry et al., 2020; Volk et al., 2016, 2020), IPU and moral religious struggles (Exline, 2013; Grubbs et al., 2017; Grubbs & Perry, 2019; Guidry et al., 2020; Vaillancourt-Morel et al., 2017; Wilt et al., 2016), IPU and sexual shame (Gilliland et al., 2011; Gordon, 2018; Phillips et al., 2019; Volk et al., 2016, 2019), and a strong link between IPU and depression (Borgogna et al., 2018; Guidry et al., 2020; Nelson et al., 2010; Perry, 2018; Willoughby et al., 2019; Yonker et al., 2012; Volk et al., 2019). Research also suggests IPU is an antecedent of moral religious struggles (Grubbs et al., 2017; Volk et al., 2016, 2019, 2020; Wilt et al., 2016) and sexual shame (Floyd et al., 2020; Chisholm & Gall, 2015; Gilliland et al., 2011; Gordon, 2018; Kyle, 2013; Volk et al., 2019, 2020). Furthermore, substantive research indicates a need to further investigate the role of masturbation in IPU and psychological distress (Castellini et al., 2016; Das, 2007; Prause, 2017, 2019; Perry, 2019, 2020; Regnerus et al., 2017).

Extending the work of Floyd et al. (2020) and Guidry et al. (2020), this study responds to the call of Perry (2019) and Prause (2019) to incorporate solo-masturbation in IPU models. It explores the degree to which moral incongruence (moral disapproval of IPU) influences the mediating effect of moral religious struggles and sexual shame on depression and how solo-masturbation moderates the relationship of the independent variable of IPU on the dependent variable of depression.

Based on the previously discussed theoretical perspectives, five hypotheses were developed to assess a moderated mediation model and include:

H1: IPU will be positively associated with depression conditional on levels of solo-masturbation (H1a). That is, the conditional direct effect of pornography use on depression will vary as a function of solo-masturbation. In addition, it is expected that findings will support a conditional direct effect of pornography use on depression in which the moderated association conditioned on solo-masturbation is further moderated on levels of moral disapproval (H1b). Specifically, as moral disapproval of pornography use increases, the relationship between IPU and depression will be strengthened.

H2: IPU will be positively associated with moral struggle conditional on levels of solo-masturbation (H2a). That is, the conditional direct effect of pornography use on moral religious struggles will vary as a function of solo-masturbation. In addition, it is expected that findings will support a conditional direct effect of pornography use on moral religious struggles in which the moderated association conditioned on solo-masturbation and further moderated on levels of moral disapproval (H2b). Specifically, that as moral disapproval of pornography use increases, the relationship between IPU and moral religious struggles will be strengthened.

H3: Moral struggle will have a positive relationship with sexual shame levels (3a). Moral religious struggles will have a positive relationship with depression (3b). Sexual shame will be positively related to depression (3c).

H4: The relationships between IPU, moral struggles, and depression will be conditional on levels of solo-masturbation. That is, the conditional indirect effect of IPU on depression will vary as a function of solo-masturbation (4a). In addition, it is expected that the conditional indirect effect will be further moderated by levels of moral disapproval (4b). Specifically, that as moral disapproval of pornography use increases, the indirect relationship between IPU and depression will be strengthened.

H5: The relationships between IPU, moral struggles, sexual shame, and depression will be conditional on levels of solo-masturbation. That is, the conditional indirect effect of IPU on depression will vary as a function of solo-masturbation (5a). In addition, it is expected that the conditional indirect effect will be further moderated by levels of moral disapproval (5b). Specifically, that as moral disapproval of pornography use increases, the indirect relationship between IPU and depression will be strengthened.

Figure 1 depicts a conceptual model of these hypotheses, visualizing the relationship between the present study's variables and the primary relationship between the independent variable of IPU and the outcome variable of depression. Given these associations, religiosity, moral values, gender, and relationship status will be considered relevant covariates in this study.

Figure 2

Conceptual Serial Moderated Mediation Model
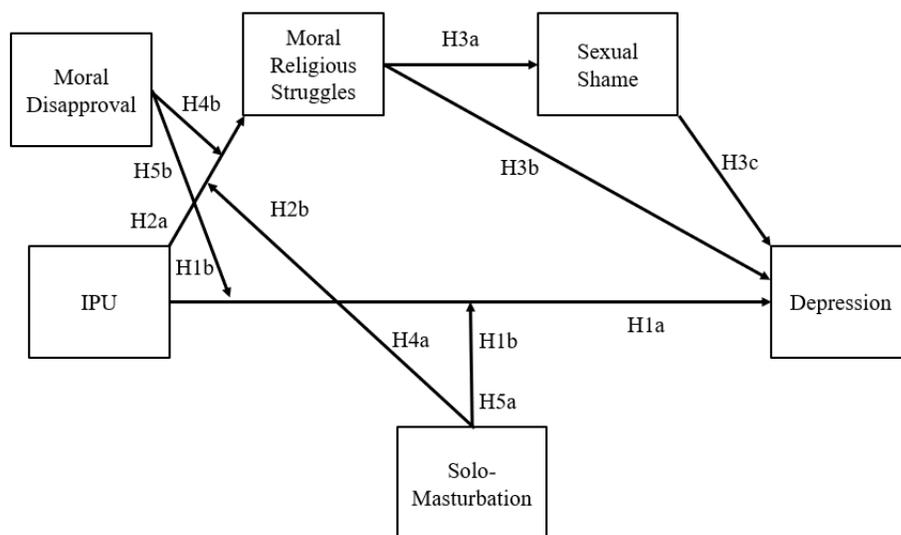
Summary

The ability to view sexually explicit media is pervasive and instantaneous. This cultural

phenomenon has given rise to a proliferation of IPU research that provides much needed knowledge of pornography's impact on society, especially in how explicit sexual media psychologically affects people that engage IPU. There is a growing body of research investigating the relationship between IPU, moral religious struggles, sexual shame, and depression. Furthermore, social scientists contend that solo-masturbation has not received the necessary investigative attention demanded by the clinical and scientific evidence of its relationship to IPU and depression. At the writing of this study, there is no extant research that explores this gap in the literature. This study proposes five hypotheses and a conceptual serial moderated mediation model to that end. The following chapter will focus on and delineate the methodology of this study.

CHAPTER THREE: METHODS

This chapter's focus is the research methodology used to explore the relationship between IPU and depression as mediated by moral religious struggles and sexual shame while being moderated by solo-masturbation and moral disapproval. This chapter serves to provide a brief overview of the purpose of the study, the research questions, and the resulting hypotheses. The procurement of participants is discussed, as are the measures used to gather data for this study. The chapter concludes with a description of the research procedures and the supporting statistical tests utilized to analyze the data for hypotheses testing.

Research Purpose

This study extends a growing body of research exploring the relationship between IPU and depression and how it is impacted by moral religious struggles and sexual shame. Further, the study addresses the solo-masturbation-as-moderator gap in the literature by exploring a potential moderating effect on independent/dependent variable relationships (IPU-depression) and the proposed mediation pathway (IPU-religious/spiritual struggle-sexual shame-depression) as primarily moderated by moral disapproval. This study's potential clinical insights are significant in that mental health providers may be able to more accurately treat distress related to the moral incongruence associated with clients that morally disapprove of their pornography viewing.

Research Hypotheses

The hypotheses of this study emanate from research questions that arise from the relationships of the proposed model in Chapter 1. The research hypotheses delineated below seek to explore the relationships found in extant research and their interaction with new constructs. Finally, the research hypotheses posit new interactions of the established construct relationships with solo-masturbation.

Hypothesis 1a: The conditional direct effect of pornography use on depression will vary as a function of solo-masturbation. That is, the relationship between pornography and depression will vary as a function of solo-masturbation (H1a).

*Null hypothesis***:** There will be no relationship between IPU and depression.

Hypothesis 1b: It is expected that findings will support a conditional direct effect of pornography use on depression in which the association conditioned on levels of moral disapproval (H2b).

*Null hypothesis***:** There will be no conditional effect on IPU and depression by levels of moral disapproval.

Hypothesis 2a: Pornography use will be positively associated with moral struggle conditionally on levels of solo-masturbation (H2a).

*Null hypothesis***:** IPU will have no association with moral struggle as a function of the moderating influence of solo-masturbation.

Hypothesis 2b: It is expected that findings will support a conditional effect of pornography use on moral religious struggles by levels of moral disapproval (H2b).

*Null hypothesis***:** There will be no relationship between pornography use and moral struggle as moderated by moral disapproval.

Hypothesis 3a: Moral struggle will have a positive relationship with sexual shame (H3a).

*Null hypothesis***:** Moral struggle will have no direct effect on sexual shame levels.

Hypothesis 3b: Moral religious struggles will have a positive relationship with depression (H3b).

*Null hypothesis***:** Moral religious struggles will have no relationship with depression.

Hypothesis 3c: Sexual shame will be positively related to depression (H3c).

*Null hypothesis***:** Sexual shame will have no relationship to depression.

Hypothesis 4a: The indirect effect of pornography use on depression through moral religious struggles will be conditional on levels of solo-masturbation (H4a).

*Null hypothesis***:** There will be no relationship between pornography use, moral religious struggles, and depression on conditional on levels of solo-masturbation.

Hypothesis 4b: It is expected that the conditional indirect effect on pornography use, moral religious struggles, and depression will be moderated by levels of moral disapproval (H4b).

*Null hypothesis***:** There will be no conditional indirect effect on the relationship between IPU and depression by levels of moral disapproval.

Hypothesis 5a: The indirect effect between pornography use and depression through moral struggles and sexual shame will be conditional on levels of solo-masturbation (H5a).

*Null hypothesis***:** The indirect effect between pornography use and depression through moral struggles and sexual shame will not be conditional on levels of solo-masturbation.

Hypothesis 5b: The indirect effect between pornography use and depression through moral struggles and sexual shame will be conditional on levels of moral disapproval (H5b).

*Null hypothesis***:** The indirect effect between pornography use and depression through moral struggles and sexual shame will not be conditional on levels of moral disapproval.

Research Design

This study used a cross-sectional correlational research design exploring the relationships between the two variables and potential mediators and moderators. Participants were recruited using the crowdsourcing Internet marketplace Mechanical Turk© (MTurk). MTurk was used for its ability to acquire research samples from hard-to-reach populations that may feel stigmatized (Smith et al., 2015). The researcher offered participants nominal monetary compensation ($1.00) to complete the research instruments with the goal of attaining a higher response rate. Using MTurk reduces selection bias and the threat of contamination (Buhrmester, Kwang, & Gosling, 2011) and reaches beyond convenience samples of university students (Chandler et al., 2019).

After recruiting a sample of online participants, the participants were asked to provide informed consent to participate in the study. A copy of the digitally signed consent form required of each of the participants is contained in Appendix A. After gaining consent from each participant, testing procedures began using the following measures (see Appendix B for items): demographic information, the Internet Pornography Use measure (Guidry et al., 2019; Floyd et al., 2020), the Religious and Spiritual Struggles Scale (RSS; Exline et al., 2014), the Kyle Inventory of Sexual Shame (KISS; Kyle, 2013), the Depression Anxiety Stress Scale (DASS-21; (Lovibond & Lovibond, 1995), Grubb's (2015b) 4-item moral disapproval scale, and a single-item measure to assess the co-activity of masturbation and IPU. At the end of the questions, the participants were asked to verify that they paid attention to the questions and answered honestly. After participants completed the surveys, the data were downloaded into IBM SPSS Statistics Version 25. Data analysis procedures are described in detail below.

Selection of Participants

An online platform, MTurk, was used to recruit adult participants above the age of 18. The exclusion criteria for this study included being under the age of 18 and declining to give consent for the study. For the purposes of this study, the researcher sampled only those research participants who intentionally viewed pornography within the past month prior to their participation (N = xxx).

Research Instruments

Demographic Information. Participants were asked their age, race, gender, race, sexual preferences, highest level of education, employment status, annual income, marital status and history, recent sexual activity in the past 6 months, and any religious affiliation. Appendix B contains all the demographic items.

Pornography Use. Internet pornography use was measured using a version of the Cyber Pornography Use Inventory–4 (CPUI-4; Grubbs & Gola, 2019a), an abridged version of the CPUI-9 (Grubbs et al., 2015). The version of CPUI-4 used in this study is a four-item measure that uses three of the original items ("I feel unable to stop my use of online pornography," "I have a problem controlling my use of pornography" and "I believe I am addicted to online pornography,") of the Perceived Compulsivity subscale of the CPUI-9. The fourth item, "I have put off other important priorities to view pornography." is modified from the original CPUI-9 Access Efforts subscale ("I have put off things I needed to do in order to view pornography") to ensure scaling of compulsivity without a shame component. Responses were recorded on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*).

In addition, a single-item measure asking respondents to indicate their frequency of use in the previous 30 days (i.e., "within the past month, how many times have you intentionally

viewed pornography online") was employed to measure pornography use. Using a five-point Likert scale, ranging from 1 (*0 times*) to 5 (*more than 10 times*), participants were asked to indicate their frequency of use. The measure has been previously used in research and found significant associations between distress and moral disapproval of pornography (Guidry et al., 2019). To be eligible for the study, participants had to have indicated using pornography in the last 6 months. For this study, the independent variable measured frequency of use in the last 30 days.

Moral Religious Struggles. Religious moral struggle was measured using the moral struggle subscale of the Religious and Spiritual Struggles Scale (RSS) developed by Exline and colleagues (2014). Of the three RSS subscales (Divine, Interpersonal, and Moral Struggle), only the 4-item Moral subscale was employed for this study. The Moral Struggles subscale measures the dissonance between the participant's behavior and spiritual values, specifically struggles that result from engaging in behaviors that contradict their moral values (Exline et al., 2014). Using a Likert scale ranging from 1 (*not at all/does not apply*) to 5 (*a great deal*), the participants were asked to rate their agreement with items to questions pertaining to perceived moral struggle (e.g., "felt guilty for not living up to my moral standards"). For the current sample, the Cronbach's alpha coefficient was .000.

Sexual shame. Sexual shame was measured using the Kyle Inventory of Sexual shame (KISS) developed by Kyle (2013). The KISS is a 20-item inventory that measures sexual shame associated with present (e.g., "I feel ashamed about my sexual fantasies") and past (e.g., "I feel ashamed about having sex with someone when I didn't want to") sexual experiences (Kyle, 2013). Participants are instructed to indicate their level of agreement to each item, on a 7-point

Likert scale, from 1 (*strongly disagree*) to 7 (*strongly agree*). For the current sample, the Cronbach's alpha coefficient was .000.

Depression. This study used the short form version of the Depression Anxiety Stress Scale (DASS-21) to measure depression (Lovibond & Lovibond, 1995). The DASS-21 short version is a 7-item subscale that asks questions (e.g., "I felt that life was meaningless") to rate their level of psychological distress on a four-point Likert scale: 1= *did not apply to me, 2 = applied to me to some degree, or some of the time, 3 = applied to me to a considerable degree, or a good part of the time*, and 4 = *applied to me very much, or most of the time*. For the current sample, the Cronbach's alpha coefficient was .000.

Moral disapproval of sexually explicit media. Moral disapproval of sexually explicit media was measured using a 4-item scale developed by Grubbs et al. (2015b). This study used a religion-neutral version of Grubbs' scale used in previous research (Volk et al., 2016, 2020), excluding Christianity-specific theological verbiage and substituting them with statements concerning the wrongness of sexually explicit media. The version used in this study is a 4-item questionnaire ("viewing pornography violates my personal values"; "viewing pornography is morally wrong"; "viewing pornography troubles my conscience"; "viewing pornography is inappropriate") that instructs participants to indicate their levels of agreement with each statement on a Likert scale with response options ranging from 1 (*not at all*) to 7 (*extremely*). For the current sample, the Cronbach's alpha coefficient was .000.

Masturbation Frequency. Masturbation frequency was assessed using a single item developed by Volk and colleagues (2019). Respondents were assessed using a question that asked respondents about masturbation frequency per week and if they masturbated with or without viewing internet pornography.

Research Procedures

An approval to conduct this study was obtained from the Institutional Review Board (IRB) prior to collecting data. A survey containing the measures mentioned in the previous section was created on MTurk and pilot-tested. A request for participants was then submitted on MTurk. Next, the participants were asked to read an informed consent document that explained the study, the constructs the survey was assessing, and pertinent ethical considerations. At the end of the informed consent document, participants were asked whether they read the informed consent and if they consent to participate in the study; responses included yes and no. Participants who agreed to the informed consent were directed to the survey. After completion of the survey, participants were paid $1.00 for their participation.

Data Processing and Analysis

The researcher downloaded the data into IBM SPSS Statistics Version 25 with the PROCESS macro for SPSS (Hayes, 2013). The data were screened and missing or incorrectly entered data were excluded. The preliminary data screening was used to determine if there was a normal distribution and outliers were screened. Next, the first research question was analyzed by calculating a Pearson correlation between the PUM and DASS-21 total scores. The results of PUM/DASS-21 analysis is displayed in a table in the following chapter.

The second evaluation of data involved a moderation analysis using conditional process analysis to assess the degree that IPU will be associated with increased moral struggle (using the Moral Disapproval Scale) as a function of the moderating influence of solo-masturbation (using the Masturbation Scale) using a Hayes (2018) Process Macro (Version 3.3). Additionally, a Hayes Process Macro was used to measure the effect of pornography use on moral struggle as moderated by solo-masturbation. The results are listed in a table in the following chapter.

The third data analysis involved the mediated effect on sexual shame levels as moderated by solo-masturbation and secondarily moderated by moral incongruence (moral disapproval of IPU) and the degree to which moral religious struggles effected depression levels as moderated by solo-masturbation and secondarily moderated by moral incongruence (moral disapproval of IPU). The last step of the data analysis evaluated how sexual shame resulting from moral religious struggles was related to depression. This was accomplished by employing the Hayes (2018) Process Macro again to generate p-values, regression coefficients, and confidence intervals for evaluating the hypothesized moderated mediation model. The resulting statistical model is found in the following chapter.

Ethical Considerations

The current study was designed using ethical guidelines and regulations found in the American Counseling Association Code of Ethics (2014). Due to the sensitive nature of the information and data gathered in the survey (e.g., frequency and typology of pornography use, sexual habits, negative psychological outcomes from sexual behaviors), the anonymity of the participants was considered and protected throughout the study. The identity of the participants was also protected by using MTurk as a third-party payment agent that provided anonymous participant remuneration for completing the research survey. The researcher did not gather any personal identification data in this study, mitigating participant identification.

It was not anticipated that participants would encounter adverse risks from completing the survey items. Some of the items in the survey assessed material that is personal or could be embarrassing to participants. Participants were provided with an online counseling resource in the informed consent in case they experienced any distress while completing the survey.

Summary

This chapter reviewed the research methods, research questions, and this study's hypotheses. The cross-sectional research design of the study was explored. Next, the selection process participants was described. The measures used in this study were explored and evaluated. Finally, the data screening and analysis was covered. This concludes the chapter about research methods.

CHAPTER FOUR: RESULTS

The purpose of this study was to examine the conditional direct and indirect effects of moral disapproval and solo-masturbation on the IPU-Moral Religious Struggles-Sexual Shame-Depression causal sequence. Specifically, the model suggests that solo-masturbation moderates the relationship between IPU and depression as well as the known relationship between IPU and moral religious struggles. While the exact relationship between moral disapproval and solo-masturbation is yet unclear, the proposed model suggests that moral disapproval moderates the same relationships as does solo-masturbation; IPU/depression and IPU/moral religious struggle. Further, the model suggests that the relationship between IPU and depression is mediated by moral religious struggles which, in turn, is a mediator of the IPU/depression relationship. In the proposed model, the IPU/depression relationship is further mediated by sexual shame via moral religious struggles as moderated by mora disapproval and solo-masturbation.

This study used a sample of 823 adults who endorsed using pornography in the past month from the date they completed the survey. Participants were given demographic items as well as questions about the frequency of their pornography use, the average amount of time per week they spent viewing pornography, and frequency of religious service attendance. The remainder of the survey consisted of measures that assessed moral disapproval of pornography, frequency of solo-masturbation, pornography compulsivity tendencies, moral religious struggles, sexual shame, and depression. This chapter describes the data analysis used to examine whether the hypotheses were supported by this data. This chapter describes results of the data analysis used to examine whether the hypotheses were supported by this data. A summary of the findings is included in this chapter.

Data Screening

Data was collected in October 2020 and rendered a sample size of 1306 participants.

Several methods were used to screen data. Data from the variables of this study (monthly

pornography use, depression, moral disapproval, moral religious struggles, sexual shame, solo-

masturbation) were analyzed for missing data using IBM SPSS Statistics Version 27. The result

of the analysis excluded 465 participants. The remaining 841 cases were screened further for

participants who responded in less than 1.5 seconds per item, resulting in the exclusion of 37

participants. The researcher assessed the variance for each scale to evaluate the data for careless

responses and ensure that participants did not respond identically on each item for each scale.

There were no cases removed on this step, yielding a sample size of 804.

Screening for outliers was conducted using histograms created using masturbation

frequency per week data collected in the survey. Eight participants answered that they

masturbated more than 20 times per week. These participants were retained since high frequency

of masturbation per week is consistent with evidence in clinical settings in individuals presenting

with sexual addiction and problematic pornography use (Reid et al., 2012). This resulted in no

further case exclusion from the data, yielding a final sample size of 804.

Participant Demographics

Of the participants who disclosed using pornography in the last month (*N*=804), 58.9%

were male, 40.7% were female, and .4% selected "other" to describe their gender. The

participants' ages ranged from 20 to 76 years of age (*M* = 37.23, *SD* = 10.71). Most of the

sample was Caucasian (73.3%), with 17.5% identifying as African American, 3.7% as Asian,

3.2% as Hispanic, 1.5% as American Indian or Alaska Native, and .7% as "other." The majority

of the sample reported having at least a bachelor's degree (58.2%), with the remaining

participants reporting a master's degree (22.6%), high school diploma or equivalent (6.3%), trade/technical/vocational training (2.2%), professional degree (1.5%), doctorate degree (.9%), or an educational level less than high school (.1%). Regarding participants' employment status, 77.4% selected they were employed for wages, while 15.8% chose self-employed, 1.4% not employed, 2.7% homemaker, 0.6% student, 0.2% military, 1.1% retired, and 0.7% unable to work. Most participants (73.6%) reported they are married or with a life partner, with 6.0% reporting they were single and had never been in a relationship. Other responses to current relationship status included single and not currently in a relationship (8.3), in a non-committed dating relationship (1.6%), in a monogamous dating relationship (6.0%), married but legally separated (1.7%), divorced (2.4%), and widowed (0.4%). Participants claimed the following religious affiliations: Protestant (12.3%), Nondenominational Christian (17.8%), Catholic (53.9%), Jehovah's Witness (0.2%), Jewish (0.2%), New Age or Wiccan (0.7%), Buddhist (1.4%), Hindu (1.5%), Mormon (0.1%), Muslim (1.2%), no religious affiliation (8.7%), and other (1.9%). See Table 4.1 for demographic information.

Table 4.1

Participant Demographics

	N or Range	% or *M*
Age	20-76	37.23
Gender		
Male	473	58.9
Female	327	40.7
Other	3	0.4
Racial Identity		
Caucasian	589	73.3
African American	141	17.5
American Indian or Alaska Native	12	1.5
Asian	30	3.7
Hispanic, Latino, or of Spanish Origin	26	3.2
Other	6	.7
Educational Background		
Less than high school	1	.1
High school diploma or equivalent (e.g. GED)	51	6.3
College Freshman	18	2.2
College Sophomore	21	2.6
College Junior	14	1.7
College Senior	12	1.5
Trade/technical/vocational training	18	2.2
Bachelor's degree	468	58.2
Master's degree	182	22.6
Professional degree	12	1.5
Doctorate degree	7	.9
Employment Status		
Employed for wages	622	77.4
Self-employed	127	15.8
Not employed	11	1.4
A homemaker	22	2.7
A student	5	.6
Military	2	.2
Retired	9	1.1
Unable to work	6	.7
Current Relationship Status		
Single - Never in a Relationship	48	6.0

			N or Range	% or M
Single – Not Currently in a Relationship			67	8.3
Non-committed Dating Relationship			13	1.6
Monogamous Dating Relationship			48	6.0
Married/With a Life Partner			592	73.6
Married, but Legally Separated			14	1.7
Divorced			19	2.4
Widowed			3	.4
Religion				
Protestant (e.g., Methodist, Baptist, or other Non-Catholic Christian Denomination)			99	12.3
Catholic			433	53.9
Christian (Non-Denominational)			143	17.8
Mormon			1	.1
Jehovah's Witness			2	.2
Muslim			10	1.2
Hindu			12	1.5
Jewish			2	.2
Buddhist			11	1.4
New Age/Wiccan			6	.7
None			70	8.7
Other			15	1.9

Participants were asked how many times they use pornography per month; options included 0 times, 1-3 times, 4-6 times, 7-9 times, and 10 or more times. The majority of participants (28.7%) selected 4-6 times. Other responses included 0 times (14.2%), 1-3 times (25.9%), 7-9 times (18.8%), and 10 or more times (7.5%). See Table 4.2 for pornography use statistics.

Table 4.2

Pornography Use Statistics

	N or Range	% or M
Pornography Use in the Past Month		
0 times	114	14.2
1-3 times	208	25.9
4-6 times	231	28.7
7-9 times	151	18.8
10 or more times	100	12.4

The study also asked participants how many times per week they masturbated. Some reported they did not masturbate at all (10.6%), with the majority of the participants (74.8%) reporting they masturbated at least four times per week. Eight participants (1.0%) in the study stated they masturbated more than 20 times per week. The reported numbers were within frequencies found in clinical settings (see Table 4.3).

Table 4.3

Masturbation Per Week

	N or Range	% or *M*
Masturbation Per Week		
0 times	85	10.6
1-4 times	601	74.8
4-9 times	79	9.8
10-14 times	29	3.6
14-19 or more times	2	0.2
20 or more times	8	1.0

Sample Means

The minimum score, maximum score, mean, and standard deviation were calculated for all of the measures used. These results are displayed in Table 4.3.

Data Analysis

Data analysis was performed using IBM SPSS Statistics Version 27 with the PROCESS macro for SPSS (Hayes, 2018). Participants who did not complete all the items for any measure were excluded from the analysis. The analysis was conducted in three phases: data screening, bivariate correlations, and OLS regressions using Hayes Process (v3.5). Bivariate correlations were completed between the scales used in this study (CPUI-4, RSS-MO, KISS, DASS) and

moral disapproval. Bivariate correlations were also completed between the scales used in this

study (CPUI-4, RSS-MO, KISS, DASS) and weekly frequency of masturbation.

Table 4.4

Descriptive Statistics of All Measures Used in this Study

	Minimum	Maximum	Mean	Std. Deviation
About how many times do you masturbate per week?	0	4	1.150	1.044
Moral Disapproval of Pornography	1.00	7.00	4.202	1.809
CPUI-4	1.00	10.00	5.174	2.927
DASS-Depression	.00	42.00	19.134	11.393
RSS-Moral Struggles	1.00	5.00	2.893	1.121
KISS-Sexual Shame	1.00	7.00	4.058	1.286

Note. CPUI-4 = Cyber Pornography Use Inventory. DASS-Depression = Depression Anxiety Stress Scale-Depression. RSS-Moral Struggles = Religious Spiritual Struggle-Moral Struggles. KISS-Sexual Shame- Kyle Inventory of Sexual Shame.

Using a modified Hayes Model 85, a moderation mediation model tested. In the remainder of

this chapter, results from these analyses are explored.

Analyses

Bivariate Correlations

Pearson's correlations, means, and standard deviations for each of the model's variables

were calculated and consistent with expectations, except for the relationship between moral

disapproval and frequency of masturbation per week. A weak negative relationship existed

between moral disapproval and frequency of masturbation per week ($r = -.027$), but the

relationship was not statistically significant ($p = .436$). All other relationships with frequency of

masturbation per week were positive and statistically significant. Cronbach's alpha was

calculated to assess the internal consistency (reliability) of each of the measures used for this

study with all alphas being in the upper limits of reliability (see Table 4.4). The calculated

bivariate correlations derived from the data (see Table 4.4) yielded correlational evidence

consistent with previous variables (cyber pornography use, moral disapproval, moral religious

struggles, sexual shame, depression) analyzed in recent research (Volk et al., 2019, 2020).

Table 4.5

Pearson's r, Means, and Standard Deviations for model.

	1	2	3	4	5	6
(1) Moral Disapproval	1					
(2) Cyber Pornography Use	.717**	1				
(3) Moral Religious Struggles	.691**	.746**	1			
(4) Sexual Shame	.670**	.776**	.763**	1		
(5) Depression	.527**	.661**	.685**	.722**	1	
(6) Masturbation Weekly	-.027	.115**	.105**	.101**	.125**	1
Mean	4.204	5.174	2.893	4.058	19.134	-
SD	1.809	2.927	1.121	1.286	11.393	-
Cronbach's α	.921	.951	.896	.949	.917	-

**Correlation is significant at the .01 level (2-tailed).

Conditional Process Analysis

Following Hayes's (2018) conditional process analysis strategy (p. 509), a fit for the

conceptual model was confirmed using the results of the bivariate correlation analysis of the

data. The modified Hayes PROCESS Model 85 was utilized to estimate the statistical model, and

moderation and mediation were determined using the results of Table 4.6. All scales and

measures were mean-centered prior to analysis, with 5,000 bootstrap samples for each of the

regressions included in the model. Mediation and moderation of mediation of the statistical

model was probed using indirect effect and partial moderation mediation analyses.

Investigation and analysis of hypothesis 1a and 1b. These hypotheses were each measured using moderated mediation analysis (Model 85; See Hayes, 2018), and controlled for pornography use with masturbation and masturbation multiple times per day as a covariates.

Hypothesis 1a: The conditional direct effect of pornography use on depression will vary as a function of solo-masturbation. That is, the relationship between pornography and depression will vary as a function of solo-masturbation (H1a).

Null hypothesis: There will be no relationship between IPU and depression.

There was a statistically significant and moderate relationship between cyber pornography use and depression (r = .624, p < .001; see Table 4.6). However, the findings of the study did not support Hypothesis 1a, in that weekly masturbation was not statistically significant as a moderator between the relationship between pornography use and depression (b = -.008, p = .796). To confirm the results, a probe of the indirect effect revealed a negative partial moderated mediation index (-.008) and bootstrap samples included zero (-.020 to .004), indicating that no interaction exists (see Table 4.6). Therefore, the relationship between pornography use and depression in this study did not vary as a function of weekly solo-masturbation. Further research should investigate the impact of greater masturbation frequency on the relationship between pornography use and depression (see Table 4.6).

Hypothesis 1b: It is expected that findings will support a conditional direct effect of pornography use on depression in which the association conditioned on levels of moral disapproval (H1b).

Null hypothesis: There will be no conditional effect on IPU and depression by levels of moral disapproval.

Figure 4.1

Moderation of Pornography Use-Depression by Moral Disapproval
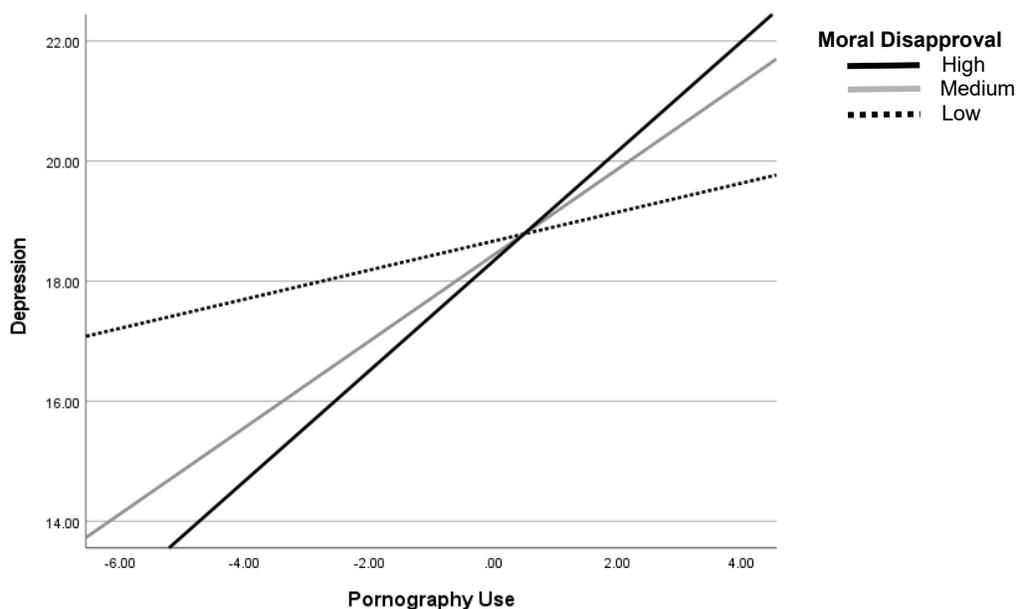
The role of moral disapproval as a moderator of the relationship between pornography use and depression was supported. Moral disapproval has a weak and statistically significant relationship with depression ($b = .159, p < .05$). Further, the variance accounted for of IPU on depression conditioned on moral disapproval was small (i.e., less than 1%) but statistically significant ($p = .005$). A probe was conducted to gauge how moral disapproval moderated the relationship between IPU and depression. The relationship between IPU and depression strengthened at higher levels of moral disapproval (see Figure 4.1). While the statistical relationship is significant and theoretically consistent with findings in previous work, the clinical difference may be nominal due to the weak relationship represented by the data.

Hypothesis 2a: Pornography use will be positively associated with moral struggle conditionally on levels of solo-masturbation (H2a).

*Null hypothesis***:** IPU will have no association with moral struggle as a function of the moderating influence of solo-masturbation.

Hypothesis 2b: It is expected that findings will support a conditional effect of pornography use on moral religious struggles by levels of moral disapproval (H2b).

*Null hypothesis***:** There will be no relationship between pornography use and moral struggle as moderated by moral disapproval.

IPU was positively associated with moral religious struggle ($r = .746$) and the relationship was statistically significant ($p < .001$). The relationship between IPU and moral religious struggle was conditional on solo-masturbation ($b = -.006$; $p = .042$). While the moderating effect solo-masturbation has on the relationship between pornography use and moral religious struggles is statistically significant, changes related to weekly solo-masturbation accounted for an almost imperceptible amount of unique variance ($r^2_{Partial} = .002$; see Figure 2).

There was a strong positive ($r = .691$) and statistically significant relationship between moral disapproval and moral and religious struggles for pornography users. The relationship between IPU and moral religious struggle was conditional on moral disapproval ($b = .014$; $p = .004$). Specifically, as moral disapproval of pornography use increased, the relationship between IPU and moral religious struggles strengthened. Similar to the conditional effect of solo-masturbation on the relationship between pornography use and moral religious struggles moral disapproval moderated the relationship statistically significant, changes related to weekly solo-masturbation accounted for a small amount of unique variance ($r^2_{Partial} = .004$; see Figure 4.3).

Figure 4.2

Interaction of Weekly Masturbation with Pornography Use and Moral Religious Struggles
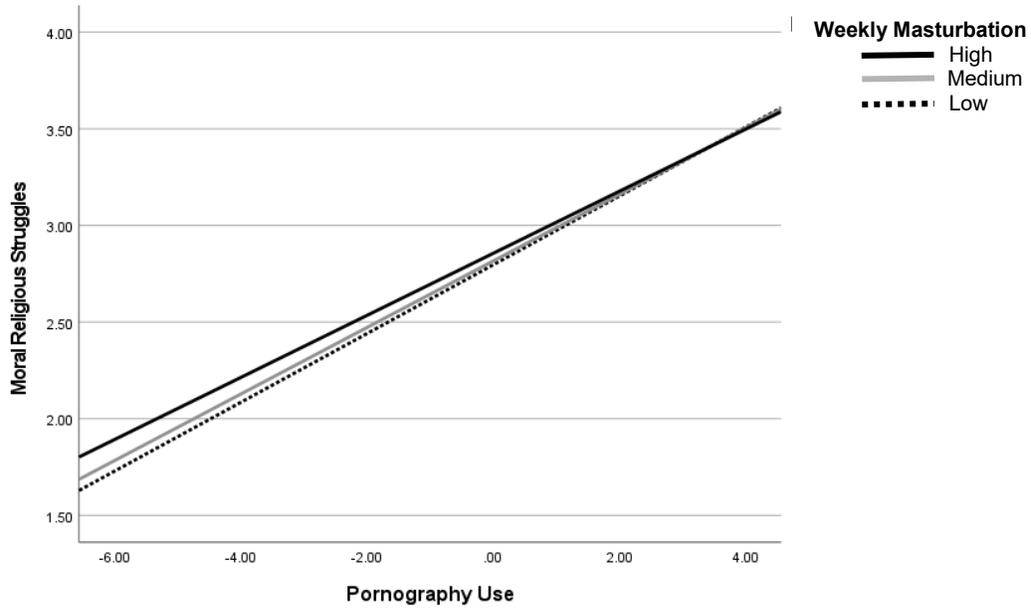
Figure 4.3

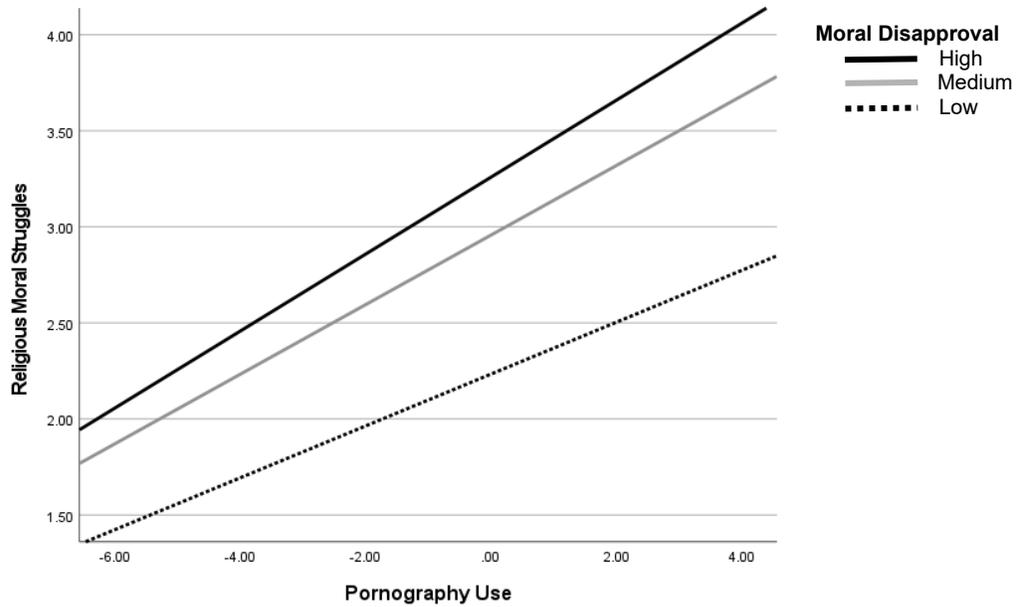*Moderation of Moral Disapproval on Moral Religious Struggles*

Hypothesis 3a: Moral struggle will have a positive relationship with sexual shame (H3a).

*Null hypothesis***:** Moral struggle will have no direct effect on sexual shame levels.

In line with previous research (Volk et al., 2019, 2020), as well as a strong and statistically significant bivariate relationship established through bivariate correlation analysis ($r = .763$, $p < .001$; see Table 4.4), moral struggles had a statistically significant ($p < .001$) and positive relationship ($b = .411$) relationship with sexual shame.

Hypothesis 3b: Moral religious struggles will have a positive relationship with depression (H3b).

*Null hypothesis***:** Moral religious struggles will have no relationship with depression.

A bivariate correlation analysis of the collected data for this study revealed a strong and statistically significant ($r = .661$, $p < .001$; see Table 4.4) relationship between moral religious struggles and depression. In the regression analyses, using a modified Hayes PROCESS model 85 (2018), a statistically significant relationship between moral religious struggle and depression ($b = 2.866$, $p < .001$) was found. This adds to the findings of other researchers that found a similar relationship between the two variables (Volk et al., 2020).

Table 4.6

Conditional Process Analysis Model Results with Covariates

Source	b	se	t	p	LLCI	UCLI
Moral Rel. Struggles: $R = .787$, $R^2 = .619$, $MSE = .483$, $F = (7, 796) = 184.946$, $p < .001$						
Cyber Pornography Use	.168	.014	12.506	<.001	.142	.195
Mast/Week	.020	.009	2.227	.026	.008	.039
Cyber Pornography Use x Mast/Week	-.006	.003	-2.138	.042	-.012	.001
Moral Disapproval	.241	.022	10.732	<.001	.195	.283
Cyber Pornography Use x Moral Disapproval	.015	.005	2.575	.004	.003	.024
Pornography Use with Masturbation	.054	.025	2.138	.033	.004	.103
Mast/Day	.068	.028	2.385	.017	.012	.124

Source	b	se	t	p	LLCI	UCLI
Sexual Shame: $R = .830$, $R^2 = .689$, $MSE = .519$, $F = (8, 795)$ 220.414, $p < .001$						
Cyber Pornography Use	.166	.015	10.872	<.001	.296	.962
Moral Religious Struggles	.411	.037	11.180	<.001	.339	.483
Mast/Week	.003	.009	.368	.713	-.015	.022
Cyber Pornography Use x Mast/Week	-.002	.003	-.623	.534	-.008	.004
Moral Disapproval	.128	.025	5.148	<.001	.079	.172
Cyber Pornography Use x Moral Disapproval	.018	.006	3.301	.001	.007	.029
Pornography Use with Masturbation	-.006	.026	-.247	.805	-.058	.045
Mast/Day	.040	.030	1.339	.181	-.019	.098
Depression: $R = .762$, $R^2 = .581$, $MSE = 54.969$, $F = (10, 793)$ 110.103, $p < .001$						
Cyber Pornography Use	.624	.170	3.704	<.001	.296	.955
Moral Religious Struggle	2.885	.417	6.882	<.001	2.049	3.684
Sexual Shame	3.503	.366	9.560	<.001	2.780	4.216
Mast/Week	.083	.095	.875	.382	-.104	.270
Cyber Pornography Use x Mast/Week	-.008	.030	-.259	.787	-.068	.052
Moral Disapproval	-.078	.260	-.286	.763	-.584	.435
Cyber Pornography Use x Moral Disapproval	.159	.077	2.205	.006	.019	.321
Pornography Use with Masturbation	-.348	.268	-1.301	.195	-.875	.177
Mast/Day	.061	.305	.191	.840	-.541	.657

Hypothesis 3c: Sexual shame will be positively related to depression (H3c).

*Null hypothesis***:** Sexual shame will have no relationship to depression.

Sexual shame was found to be strongly and positively related to depression. The regression analysis revealed a positive and robust relationship between sexual shame and depression ($b = 3.503$; $p < .001$). This was consistent with a bivariate correlation analysis that indicated a strong and statistically significant relationship between the two variables ($r = .722$, $p < .001$).

Hypothesis 4a: The indirect effect of pornography use on depression through moral religious struggles will be conditional on levels of solo-masturbation (H4a).

*Null hypothesis***:** There will be no relationship between pornography use, moral religious struggles, and depression on conditional on levels of solo-masturbation.

Hypothesis 4a was not supported by the data in this study. While solo-masturbation moderated the relationship between IPU and moral religious struggles the indirect relationship between solo-masturbation and depression through moral religious struggles conditional on levels of weekly solo-masturbation, it was not statistically significant as evidenced by a probe of the partial moderated mediation. The confidence intervals for the index of moderated mediation included zero (see Table 4.7).

Hypothesis 4b: It is expected that the conditional indirect effect on pornography use, moral religious struggles, and depression will be moderated by levels of moral disapproval (H4b).

Null hypothesis: There will be no conditional indirect effect on the relationship between IPU and depression by levels of moral disapproval.

The conditional indirect effect of moral disapproval was confirmed through a probe of the indices of partial moderated mediation. An index of .022 and bootstrap samples that did not include zero (.005 to .415) suggest there is a conditional indirect effect of moral disapproval on pornography use, moral religious struggles, and depression (see Table 4.7).

Table 4.7

Indices of Partial Moderated Mediation.

Cyber Pornography Use > Moral Religious Struggles > Sexual Shame > Depression				
Source	Index	BootSE	BootLLCI	BootULCI
Masturbation Weekly	-.008	.006	-.020	.004
Moral Disapproval	.022	.009	.005	.415

Cyber Pornography Use > Moral Religious Struggles > Depression				
Source	Index	BootSE	BootLLCI	BootULCI
Moral Disapproval	.044	.019	.011	.084
Masturbation Weekly	-.017	.012	-.039	.008
Cyber Pornography Use > Sexual Shame > Depression				
Moral Disapproval	.086	.024	.041	.135
Masturbation Weekly	-.015	.013	-.039	.012

Hypothesis 5a: The indirect effect between pornography use and depression through moral struggles and sexual shame will be conditional on levels of solo-masturbation (H5a).

Null hypothesis: The indirect effect between pornography use and depression through moral struggles and sexual shame will not be conditional on levels of solo-masturbation.

An assessment of the conditional indirect effect of weekly solo-masturbation on the relationship between pornography use and depression through moral struggles and sexual shame revealed negative indices and bootstrap samples that included zero (see Table 4.7). The analyses suggest the relationships between pornography use and moral struggles is weakly conditioned by levels of weekly solo-masturbation; however, that conditional relationship does not endure through the proposed model. Hypothesis 5a was not supported.

Hypothesis 5b: The indirect effect between pornography use and depression through moral struggles and sexual shame will be conditional on levels of moral disapproval (H5b).

Null hypothesis: The indirect effect between pornography use and depression through moral struggles and sexual shame will not be conditional on levels of moral disapproval.

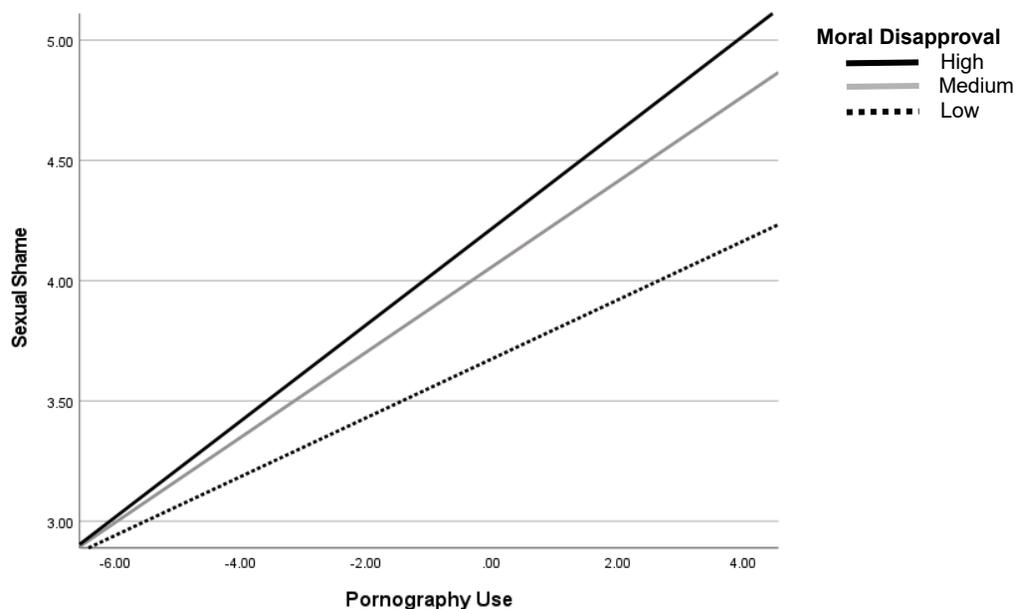An assessment of the conditional indirect effect of moral disapproval on the relationship between pornography use and depression through moral struggles and sexual shame revealed positive indices and bootstrap samples that did not include zero (see Table 4.7). As seen in

Figure 4.4, as the levels of moral disapproval increase, the relationship between IPU and sexual

shame strengthened; that effect endures through sexual shame to depression.

Figure 4.4

Moderation of Moral Disapproval on Pornography Use and Sexual Shame

A conditional indirect effect was confirmed through a probe of moderated mediation

indices, which revealed positive indices and bootstrap samples that did not include zero,

suggesting there is a conditional indirect effect of moral disapproval on pornography use, moral

struggles, sexual shame, and depression (see Table 4.5). A representation of the statistical model

is represented in Figure 5.

<div align="center">**Summary**</div>

I used a moderated mediation analyses to answer the five research questions addressing

pornography use, moral disapproval, sexual shame, depression, moral disapproval, and solo-

masturbation. The overall model was statistically supported across the model constructs (Moral

Religious Struggles: $r = .787$, Sexual Shame: $r = .689$, Depression: $r = .762$). The hypothesized

interactions between the proposed model's variables were supported except for weekly solo-masturbation. The next chapter concludes this dissertation with a discussion of these results in greater detail.

Figure 4.5

Statistical Serial Moderated Mediation Model

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

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study explored the effect of solo-masturbation on the relationship between pornography use and depression. The relationship between pornography use and depression is gaining more attention in the research literature (Maddock et al., 2019; Perry, 2018; Willoughby et al., 2019; Volk, 2019), with some researchers contending solo-masturbation may have moderating, mediating, or even an etiological role in pornography use (Ley, 2019; Perry, 2018b, 2018c; Prause, 2017). Other researchers posit solo-masturbation as inextricably related to pornography use (Perry, 2019; Prause, 2017). Further, moral struggles and sexual shame have been associated with pornography use and depression (Maddock et al., 2019; Volk et al., 2019, 2020). This cohort of relationships led to the investigating of the research questions and model, based on previous models (Volk, 2020) and results (Maddock et al., 2019; Perry, 2019; Willoughby et al., 2019; Volk, 2019).

The significance of this study's findings is explained in this chapter: a culmination of the nature of the problem, an extensive review of the literature, the methods employed in the study, and the analysis of the data generated in this study. In the remainder of this report, the five research questions, the conceptual model, and the statistical model are discussed through the lens of the project's limitations and the study's implications for future research, clinical applications, and usefulness to counselor educators.

Summary of Findings

Thirteen hundred and six participants recruited through MTurk completed six measures: the frequency of their masturbation per week, CPUI-4 (modified), RSS-MO, KISS, Moral Disapproval (4 items), and the DASS-21. Only participants who confirmed using pornography in the last month were included in the data analysis ($n = 804$). The participants were between 20

and 76 years old (M = 37.23). The majority of the participants in the study were male (58.9%), Caucasian (73.3%), married or living with a life partner (73.6%), and held a bachelor's degree or above (83.2%). Most participants were religious (Catholic, 53.9%; Christian - Nondenominational 17.8%, Protestant, 12.9%). A large group of participants (N = 601, 74.8%) reported they masturbated between one and four times per week (M = 1.15), while 14.2% reported no pornography use.

Conclusions

Pornography Use and Depression

Research Question 1 inquired how the relationship between pornography and depression would vary as a function of solo-masturbation. Building on a relationship between pornography use and depression established by other researchers (Perry, 2020; Volk et al., 2019, 2020), this question introduces the unresearched moderating effect of solo-masturbation on the pornography use and depression relationship. It was hypothesized that the relationship between pornography use with depression would be impacted by levels of weekly masturbation (H1a).

The relationship between pornography use and depression was confirmed, as the data of this study showed a moderately strong and statistically significant relationship between pornography use and depression (b = .629, p < .001; see Table 4.6). However, the hypothesized varying effect of solo-masturbation on the relationship between pornography and depression was not confirmed. In fact, weekly masturbation had a weak, negative, and statistically insignificant impact on the confirmed pornography use and depression relationship (b = -.008, p = .796). This is despite a weak but statistically significant (r = .125, p <001) initial bivariate correlation analysis. This finding was unexpected, since depressive symptoms were powerfully related to pornography and masturbation in Perry's (2020) study.

The distinction in the different results achieved by Perry (2018) and this study regarding the strength in the relationship between may be twofold. First, there is a difference in how masturbation frequency was measured in the respective studies. Perry assessed the frequency of masturbation by asking if the respondents had ever masturbated; if they had, they were asked, "When did you last masturbate?" Participants were given a 1 = *today* to 9 = *over a year ago* response scale. In contrast, participants in this study were asked, "About how many times do you masturbate per week?" and "How often do you masturbate multiple times in one day?" Based on the research of Perry (2018) and Prause (2017) suggesting the inextricability of pornography use and solo-masturbation, this study asked questions reflecting the possibility of inextricability. Since the associated hypothesis (H1a) was partially confirmed, more research is necessary to explore the differences in the two outcomes.

The second hypothesis of the first research question (H1b) asked if levels of moral disapproval had a conditional direct effect of pornography use on depression. The results indicate that higher levels of moral disapproval strengthen the relationship between pornography use and depression (b = .159, p < .05). This supports H1b and is consistent with previous research that provides evidence that moral incongruence (moral disapproval of pornography use) is related to higher levels of depression (Grubbs et al., 2014; Grubbs et al., 2018; Guidry et al., 2019; Perry, 2018).

Pornography Use and Moral Religious Struggles

The second research question had two parts: First, how will solo-masturbation affect the relationship between IPU and moral religious struggles? Second, how would moral disapproval affect the relationship between IPU and moral religious struggles? These questions are derived from past research that establishes a connection between pornography and moral religious

struggles (Grubbs et al., 2017; Volk et al., 2019, 2020; Wilt et al., 2016). The resulting

hypothesis H2a extends the research by introducing solo-masturbation as a potential moderator

(Perry, 2019; Prause, 2019). It was anticipated that the pornography use would be positively

associated with moral religious struggles conditional on levels of solo-masturbation. The second

question resulted in a hypothesis (H2b) that expected a conditional effect of pornography use on

moral religious struggles by levels of moral disapproval.

Congruent with previous research, pornography use and moral religious struggles had a

positive and statistically significant relationship ($b = .168$, $p < .001$). The newly introduced

question of weekly solo-masturbation as a moderator in the pornography use/moral religious

struggle relationship revealed a weak and negative statistically significant moderating effect on

the relationship ($b = -.006$, $p < .05$). Given that this hypothesis is relatively unresearched and

that interaction in cross-sectional non-experimental studies are difficult to detect (McClelland &

Judd, 1993), the results are an important finding as they are consistent with theoretical

framework. Masturbation multiple times per day was treated as a covariate in the analysis and

yielded a weak but positive and statistically significant moderating effect on the relationship

between pornography use and moral religious struggles ($b = -.068$, $p < .05$), substantiating the

need for this construct in future research.

Moral Religious Struggles and Sexual Shame

I expected to find that religious moral struggle would have a positive relationship with

sexual shame. This is consistent with previous research that links moral religious struggles

(Exline, 2013: Grubbs et al., 2017; Wilt et al., 2016) and sexual shame (Gilliland et al., 2016;

Gordon, 2018; Volk et al., 2016, 2019). The data analyses in this study support hypothesis 3a of

the third research question. Conditional process analysis revealed a positive and statistically

significant relationship between moral religious struggles and sexual shame ($r = .411$, $p < .001$). This corroborated the strong and statistically significant bivariate relationship established through stepwise bivariate correlation analysis ($r = .763$, $p < .001$; see Table 4.4). The positive relationship between moral religious struggles and sexual shame is a result of mixed moderation interaction. Pornography use and moral disapproval (moral incongruence) positively moderate the hypothesized relationship in 3a ($b = .015$, $p < .001$) while the relationship is moderated negatively ($b = -.006$, $p < .001$). As previously mentioned, future research should investigate how the frequency of solo-masturbation affects the pornography use/moral religious struggle relationship.

Hypotheses 3b and 3c were supported. Moral religious struggles had a positive and statistically significant relationship with depression ($b = 2.866$, $p < .001$) and is consistent with previous research (Volk et al., 2020). A positive and statistically significant relationship between sexual shame and depression ($b = 3.498$, $p < .001$) provides further evidence of a relationship between sexual shame and depression found in previous research (Bilevicius et al., 2018; Kim et al., 2011; Orth et al., 2006; Tian et al., 2018; Volk et al., 2020).

Moral Religious Struggles and Depression

Research Question 4 considered how levels of solo-masturbation would condition the indirect effect of pornography use on depression. There is precedent for associating moral religious struggles with psychological distress and depression (Grubbs & Perry, 2019; Vaillancourt-Morel et al., 2017; Volk et al., 2019) and, based on the work of Perry (2020), the question includes solo-masturbation as a potential moderator.

Hypothesis 4a was not supported. Solo-masturbation was not statistically significant as evidenced by a probe of the partial moderated mediation index that confirmed a non-existent

interaction with no moderation (see Table 4.5). In contrast, hypothesis 4b was supported as the conditional indirect effect of moral disapproval on pornography use, moral religious struggles, and depression was confirmed by a statistically significant positive relationship ($b = .015$, $p < .001$). Hypothesis 4b was further confirmed by a probe of the partial moderated mediation indices that did not include zero ($b = .022$, BootLLCI .005 to BootULCI .415).

Effects of Solo-Masturbation and Moral Disapproval on the Model

The initial bivariate correlation analysis conducted in this study confirmed relationships and provided promise for the support of hypothesis 5a (see Table 4.5). The subsequent conditional process analysis showed that weekly solo-masturbation had a negative and statistically significant moderating effect on the relationship between pornography use and moral religious struggles ($b = -.006$, $p = < .05$) but a statistically insignificant relationship with sexual shame ($b = -.002$, $p = .534$) and depression ($b = -.008$, $p = .796$).

Ultimately, hypothesis 5a was not supported, in that the relationship between pornography use and depression mediated through moral struggles and sexual shame are not conditioned by levels of solo-masturbation, as confirmed by probing the indices of partial moderated mediation ($b = -.006$, BootLLCI -.028 to BootULCI .019). In other words, the conditional relationship does not persist throughout the statistical model.

Data analysis findings confirm hypothesis 5b. As moral disapproval increases, the relationship between pornography use and sexual shame strengthens, with the effect persisting through sexual shame to depression. This is evidenced by a positive conditional indirect effect indicated by a probe of partial moderated mediation where bootstrap samples did not include zero.

Overall Findings from the Moderated Mediation Model

The conceptual model presented in this study was mostly supported by the data. The statistical model based on the data was consistent with previous research in regards to the moderating effect of moral incongruence on moral religious struggles (Volk et al., 2016, 2020), sexual shame (Guidry et al., 2020; Perry, 2018; Volk et al., 2019), sexual shame (Chisolm & Gall, 2015; Volk et al., 2016, 2019), and depression (Guidry et al., 2020; Leonhardt et al., 2019; Maddox et al., 2019; Perry & Whitehead, 2019; Perry, 2018c, 2019). Moderation mediation of moral incongruence was established in this study between moral religious struggles, sexual shame, and depression. Robust positive and statistically significant relationships were found between moral religious struggles and depression, and sexual shame and depression, with a moderate and statistically significant relationship indicated between the primary independent variable (pornography use) and the dependent variable (depression).

The data did not support the conditional direct or indirect effect of weekly solo-masturbation on moral religious struggles or depression as hypothesized. The statistical inconsistency with previous studies on masturbation and depression (Perry, 2019) necessitates further study to investigate the lack of relationship correlation between masturbation and depression in this study. Additional findings regarding masturbation frequency may inform future efforts to study the relationship between masturbation and depression.

Additional Findings

An in-depth analysis of solo-masturbation and masturbation while viewing pornography data was conducted. This was undertaken to gain further insight into the disparity between the near-ubiquitous masturbation reported by Perry's (2018) study and this study's masturbation

behavior results. Following are descriptive statistics that reflect a split file descriptive frequency analysis (male/female, religions) of the data.

Weekly masturbation. As reported in Table 4.3, most participants ($N = 601$, 74.8%) masturbated weekly. The split file analysis revealed that a large percentage of males ($N = 473$, 65.5%) reported a frequency of one to four times per week, with less than ten percent ($N = 45$, 9.5%) reporting no weekly masturbation. Comparatively, most women surveyed ($N = 327$, 76.1%) masturbated one to four times per week, with only forty women (12.2%) saying they did not masturbate weekly. These findings are higher than Das' (2007) findings for men (61%) and women (38%) that reported masturbating within the last year. The difference in the two samples may suggest that female masturbation is less stigmatized (Haus et al., 2019) or there is more acceptance of masturbation while in a partnered sex relationship than in the past (McNabney et al., 2020; Regnerus et al., 2017; Rowland et al., 2020).

A split file analysis of the three largest religions represented in the survey revealed that 78.8% of Protestants (e.g., Methodist, Baptist, or some other Non-Catholic Christian denomination; $N = 99$, SD 2.39), 75.7% of Catholics ($N = 433$, SD 2.76), and 77.7% of Non-Denominational Christians ($N = 143$, SD 2.59) masturbated one to four times per week. The results of this analysis are in line with other research (Das, 2007). The relatively high levels of masturbation behavior among the religious demand more investigation.

Masturbation multiple times per day. This measure of frequency was used as a covariate to investigate the proposed inextricability of pornography use and masturbation, and its possible impact on depression, delineated by other researchers (Perry, 2018; Prause, 2017). Roughly one-third of those surveyed (male 33.2%, female 34.3%) reported they never masturbate multiple times per day. Less than five percent reported they masturbated multiple

times per day every day (male 1.5%, female 4.0%). There were no significant differences in the split file analysis of the three largest religions in the survey. This covariate was not statistically significant to the model as verified by moderated mediation indices, suggesting that this measure of frequency may need to be considered an independent variable.

Masturbating while viewing pornography. The number of men and women that always masturbate while viewing pornography is similar (male 23.5%, female 26.3%). In this sample, women tended to masturbate when viewing pornography more frequently than men (male 30.7%, female 35.5%). The number of men that never masturbate while viewing pornography (11.6%) is slightly higher than women (9.8%). Non-denominational Christians masturbate while viewing pornography at a higher rate (86.0 %) than Catholics (84.3%), and Protestants do more so than the other prominent religions (89.9%). While Prause (2019) contends pornography is for masturbation, the results of this study suggest that more research is needed before a definitive conclusion can be made. For now, the research suggests that masturbation and pornography viewing are strongly correlated.

Discussion

This work aimed to expand on previous studies examining the relationship between pornography use and depression (Guidry et al., 2019; Volk et al., 2019) while introducing solo-masturbation as a potential moderator of that relationship (Perry, 2018). In particular, the model tested in this work evaluated how moral incongruence and solo-masturbation would moderate the relationship between pornography use and depression as mediated by moral religious struggles and sexual shame.

The association between pornography use and depression has been established through previous research (Guidry et al., 2019; Maddock et al., 2019; Perry, 2018; Volk et al., 2019;

Willoughby et al., 2014, 2019) as have the relationships between pornography use and moral religious struggles (Grubbs et al., 2017), pornography use and sexual shame (Chisolm & Gall, 2015; Gilliland et al., 2011; Phillips et al., 2019; Volk et al., 2019), and shame and depression (Ashby et al., 2006; Bilevicius et al., 2018; Kim et al., 2011; Orth et al., 2006; Tangney et al., 1992; Tian et al., 2018). Researchers have also established the moderating effect of moral incongruence (pornography use and moral disapproval) on religious struggles (Volk et al., 2016, 2020), shame (Chisolm & Gall, 2015; Volk et al., 2016, 2019), and depression (Guidry et al., 2020; Perry, 2018; Volk et al., 2019). Solo-masturbation was introduced as a potential moderator in the research model based on work by Perry (2019).

The statistical model presented in this study confirms previous findings except for the introduction of solo-masturbation as a moderator. Though solo-masturbation was negatively associated with pornography use and moral religious struggles with statistical significance, solo-masturbation did not moderate the relationship between pornography use and depression and, after a probing of the partial moderated mediation indices, was not found to moderate the model overall. Despite incorporating the assumption that solo-masturbation frequency would increase proportionally to pornography use (Perry, 2019; Regnerus et al., 2016, 2017), the absence of moderation and interaction in the research model is not consistent with Perry's (2019) research. Te participants in this study's sample were asked pornography use questions that assessed compulsivity. This was combined with questions regarding weekly masturbation frequency to explore if and how masturbation frequency and pornography use were related and if solo-masturbation was a potential moderator. Masturbating while viewing pornography was treated as a covariate in this study. While the men and women in this sample masturbate while viewing pornography at a similar rate (male 23.5%, female 26.3%), the covariate had no statistical

significance or relationship with any variables in the model. The conditional process analysis results for weekly masturbation were also statistically insignificant and did not confirm solo-masturbation as a moderator. The lack of solo-masturbation moderation in the model may be the result of how masturbation frequency was assessed. The participants in this study were asked how many times they masturbated each week, compared to Perry's sample of roughly 15,000, where participants were asked if they had ever masturbated and subsequently the last time they had masturbated.

Moral incongruence was statistically significant as a moderator, with each variable in the model confirming the hypothesized interactions apart from solo-masturbation. While solo-masturbation had no statistical significance as a moderator, moral incongruence moderated the relationship between pornography use and moral struggles and sexual shame. Moral incongruence also had a conditional direct effect on sexual shame and depression. The lack of statistical interaction between moral incongruence and solo-masturbation necessitates future research. There are limitations to this study that affect future research and the interpretation of the research outcomes.

Limitations of the Study

The measure of solo-masturbation, a weekly measure of frequency, differs from most research questions that ask if the participant had ever masturbated or when was the last time the participant masturbated (Perry, 2019). Carvalheira et al. (2015) used the question, "On average, how often did you masturbate during the past 6 months?" Participants responded on a 7-point Likert-type scale ranging from 1 (*never*) to 7 (*daily or almost every day*). Gerressu and colleagues (2008) asked, "When, if ever, was the last occasion you masturbated? That is, aroused yourself sexually?" The use of a weekly masturbation frequency measure used in this study

attempts to account for the ubiquity of masturbation. Measures of self-report may have a level of error due to difficulty of recall or lack of objectivity and may be influenced by social desirability.

The sample gathered for this research was recruited using Mechanical Turk (MTurk). The higher income and educational level of MTurk users may not reflect every research population or clinical setting (Paolacci et al., 2010; Shapiro et al., 2013). Since approximately 80% of MTurk workers are from the U.S., global generalization cannot be made from this study (Sheehan, 2018).

Another limitation of this study was its cross-sectional and correlational design. As such, it is not possible to test causality between the variables. The findings of correlational research should be considered investigatory rather than conclusive. Thus, results from correlational designs are not generalizable.

Suggestions for Future Research

Although much of the model's relationships were statistically significant and congruent with previous research, future research must explore solo-masturbation's potentiality as a moderator in other samples with expanded demographics. Since there was an absence of moderation in this study, researchers should continue to explore the moderating role of solo-masturbation with pornography use. The current research focused on the relationship between solo-masturbation and romantic relationships should expand, but there is much yet to investigate regarding how solo-masturbation impacts emotional health.

While this study searched for a correlation between pornography use and solo-masturbation, researchers should consider how solo-masturbation may be used to cope with dysphoria apart from pornography use (Cavalheira et al., 2015); in particular, anxiety and anger. The robust relationship that moral religious struggles and sexual shame have with depression due

to pornography use is consistent with the pornography/moral disapproval/anxiety/depression research of Guidry et al. (2019). Introducing solo-masturbation as a moderator at varying levels of frequency to their model may provide further insight into the role of solo-masturbation in the anger/anxiety/depression triad.

The relationship between externalization and solo-masturbation should be explored (Volk et al., 2019). The results of the covariate analysis of masturbation daily/multiple times daily data in this research warrant more investigation of solo-masturbation as a motivator of depression or other mental health illnesses. When weekly solo-masturbation is treated strictly as a covariate, the interaction with the pornography use/moral religious struggle relationship increases. This suggests the need to explore weekly solo-masturbation as a moderator of only pornography use and moral religious struggles. A related construct that is research worthy is the moral incongruence related to solo-masturbation. Future research of solo-masturbation should include a measure of moral disapproval of solo-masturbation. Moral incongruence related to solo-masturbation may affect depression levels.

Implications for Clinicians and Counselor Educators

General mental health concerns like depression often present with a complicated etiology. A growing body of research links depression with moral religious struggles (Abu-raiya et al., 2015; Wilt et al., 2017), shame (Chisolm & Gall, 2015; Volk et al., 2016, 2019), and moral incongruence (Guidry et al., 2020; Perry, 2018; Volk et al., 2019). Therefore, it is essential that clinicians assess not only for depression, but complete a bio-psycho-social-spiritual assessment of their client as well. The strong relationship depression has with moral religious struggles, sexual shame, and moral incongruence requires clinicians to be sensitive to religious accommodation and spiritual intervention competency in practice (Borgogna et al., 2018; Koenig

et al., 2015). If the client discloses significant internet pornography use, the astute clinician will recognize the need to address potential underlying depression constructs like moral incongruence and devise a treatment plan accordingly.

Clinicians should take the underlying constructs of depression in this study into consideration when assessing and diagnosing, especially when clients present a religious demographic. For example, if a religious client presents with depression and they disclose consistent pornography use, counselors should assess for levels of moral religious struggles and sexual shame to determine if and how they are being affected by moral incongruence. Based on previous research and this study, the constructs should be treated individually and as interrelated.

Most counselor educators, supervisors, and mental health professionals support spiritual competencies for effective counseling practice (Young et al., 2007). Although the Association for Spiritual, Ethical, and Religious Values in Counseling (ASERVIC) has established spiritual and religious competencies in counseling (Cashwell & Watts, 2010), real competency in religious and spiritual competencies is lacking in the field of counseling (Oxhandler & Pargament, 2018). Since clients that present with depression may have underlying religious and spiritual constructs that contribute to or exacerbate their condition, counselor educators must provide spiritual and religious competency training to counselors in training. Bohecker and colleagues (2017) contend that spiritual and religious competency training should be incorporated into human development curricula. Doing so would provide counselors in training with more confidence to form religious and spiritual interventions that meet the needs of clients presenting underlying moral and religious issues like those presented in this study.

Summary of the Chapter

This chapter presented a summary of the findings, limitations of this study, clinical implications, and future research recommendations. There were two main findings. First, internet pornography use was strongly correlated with depression; moral religious struggles and sexual shame significantly mediated this relationship. In the mediation model, sexual shame had a stronger relationship with moral religious struggles than pornography use, with moral incongruence moderating relationships between pornography use and moral religious struggles, sexual shame, and depression. While the moral incongruence moderations were weak, the construct was statistically significant for all relationships.

Second, the role of solo-masturbation as a moderator was statistically insignificant. This was unexpected, as pornography use and solo-masturbation have been reported as being moderately correlated (Perry, 2019). Solo-masturbation had a negative and weak moderation influence on pornography use and moral religious struggles, but there was no statistical significance found in the relationship. This was confirmed through a probe of the moderated mediation indices. These results should lead researchers to continue to explore how moral incongruence affects depression and how solo-masturbation fits into sexual and moral issues presented in clinical settings.

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Appendix A: Informed Consent

Informed Consent

You are invited to be in a research survey which is a study about the Impact of Family-of-Origin Experience, Spirituality, Sexual Behavior, Sexual Attitudes, Relationships, and attitudes about pornography. As compensation, one dollar will be made available to participants who complete it. We ask that you read this form and ask any questions you may have before agreeing to participate in the survey. You have received the opportunity to participate in this survey through your arrangement with Amazon Mechanical Turk.

Confidentiality

The records of this study will be kept private and anonymous. We are asking for your honest response to all the questions. Research records will be stored securely and only researchers will have access to the records. Publications from this research study will only report on statistical information as no personal information will be requested from you.

Contacts and questions

The researcher conducting this study is Fred Volk. Please feel free to send the questions you may have at any time during the course of this study by email: fvolk@liberty.edu. If you have questions later, you are encouraged to contact either of him via email. If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), then you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Green Hall Suite 1887, Lynchburg, VA 24515 or email at irb@liberty.edu. In case you may need to talk to a counselor after taking the survey, though this is not an endorsement of the following free online counseling service, you may contact

http://www.onlinecounselling4u.com/. Again, this is only a suggested resource to assist you just in case you need counseling assistance after completing the survey.

Risks and Benefits

There is no direct benefit to you from your participation in this survey. Risk is mostly limited to social impact should an individual's responses be released, therefore the responses will be collected anonymously with no identifying information. You will receive $1 (one U.S. dollar) for completing this survey. The findings from this study have important implications for counselors and counseling services.

Procedures

If you agree to be in this study, we would ask you to complete the questionnaire. As part of this survey, you will be asked several questions about yourself, as well as questions about your family-of-origin, your beliefs, your attitudes, and your behavior. This survey will take between 20 and 45 minutes to complete.

Compensation

As compensation, one U.S. Dollar ($1.25) will be made available to participants who complete it.

Voluntary Nature of the Study

Thank you for your interest in participating in this survey. Your participation is voluntary and you can quit at any time. Your decision whether or not to participate will not affect your current or future relations with Liberty University. Researchers reserve the right to refuse compensation if you do not indicate that you have willingly agreed to participate in this survey.

Statement of Consent

Please click "yes" if you agree with the following statement: "I have read the above information and I consent to participate in the study and for my data to be analyzed for the purposes of the study." All information you provide in this survey is completely anonymous. By answering yes to the question below, you are agreeing to participate in this study.

Yes

No

Appendix B: Demographics

1. Do you identify as:

   Male   Female   Other

2. What is your age?

3. Do you identify as:

Caucasian/White	American Indian or Alaska Native	Native Hawaiian or other Pacific Islander
African American	Asian	Hispanic, Latino, or of Spanish Origin Other

4. What sexes are you attracted to?

Men only	Men and Women
Women Only	Neither Men nor Women

5. What is your highest completed educational level?

No schooling completed	Less than high school
High school diploma or equivalent (e.g. GED)	College Freshman
College Sophomore	College Junior
College Senior	Trade/technical/vocational training
Bachelor's degree	Master's degree
Professional degree	Doctorate Degree

6. Employment Status: Are you currently...?

    Employed for wages   A student

    Self-employed   Military

    Not employed   Retired

    A homemaker   Unable to work

7. What is your household's annual income?

    Under $10,000 $50,000-$59,999

    $10,000-$19,999 $60,000-$69,999

    $20,000-$29,000 $70,000-$99,999

    $30,000-$39,999   Over $100,000

    $40,000-$49,999

8. How many times have you been married?

    Never married   Three times

    Once   More than three times

    Twice

9. How long have you been married to your current spouse in YEARS? (leave blank if never married)

10. What is your current relationship status? Please choose only one of the following:

Single (I have never been in a serious relationship.)

Single (I am not currently in a serious relationship, but have been in the past.)

Non-committed Dating Relationship Monogamous Dating Relationship

Married/Life Partner Married, but Legally Separated

Divorced

Widowed

11. Have you been sexually active in the last six months with your current romantic partner?

No

Yes

I don't have a current romantic partner

12. In terms of religion, how would you describe yourself? Choose one of the following

answers:

Protestant (e.g. Methodist, Baptist, or some other Non-Catholic Christian denomination)	Hindu
Catholic	Jewish Buddhist
Christian (Non-Denominational)	New Age/Wiccan
Mormon	Taoist
Jehovah's Witness	None
Muslim	Other

13. About how often do you attend religious services each YEAR?

14. Please choose the answer that best describes your belief in God.

   I believe there is a God.

   I sometimes believe there is a God.

   I used to believe there was a God but do not anymore.

   I do not believe there is a God and I cannot say that I have ever believed in a God.

15. To what degree does religion or faith affect your everyday life and decision-making?

   A great deal   A little

   A lot   None at all

   A moderate amount   A little