THE MODERATION OF AN INTIMATE RELATIONSHIP ON PORNOGRAPHY USE
AMONG RELIGIOUS SINGLES

by

Brandon Paul Waggoner

Liberty University

A Dissertation Presented in Partial Fulfillment
Of the Requirements for the Degree
Doctor of Philosophy

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ABSTRACT

Previous research has explored the relationship between religious involvement, loneliness, and pornography use. For some, pornography use can be used as a coping mechanism to overcome feelings of loneliness. This pornography use is especially problematic for those who are religious, as this use contradicts their convictions and beliefs and has been shown to have many negative outcomes. To date, little research has focused on the specific growing population of singles who can be more prone to loneliness due to the lack of a romantic relationship. To rectify this gap, this study seeks to explore the ability an emotionally intimate relationship has to reduce loneliness and pornography use for the religious single. An online survey was used to recruit participants ($N = 95$) who were single (not in a romantic relationship), religious (believed in God), and had used pornography in the last six months. The desired outcome is to understand what condition or in what way an intimate relationship moderates both the direct relationship between religious involvement and pornography use and the indirect mediated relationship through loneliness. While results showed no significance in either the mediating or moderating conditional relationships, there were significant direct relationships between intimacy, loneliness, and pornography use. Implications suggest that an intimate relationship for religious singles may be able to reduce feelings of loneliness and pornography use.

*Keywords:* intimacy, singles, pornography, loneliness, religious involvement
Dedication

I could only have reached this point with the love, grace, and peace that my relationship with Christ provides. Only He could have seen this journey for me. I give Him the credit and praise that He deserves and for the new life He has given me. I am excited to use my future opportunities to help those I have opportunity and point others to Him.

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To my parents, thank you for believing in me and always telling me I could do this. Thank you, mom, for your morning texts and Dad for letting me have some deep conversations. I never doubted you were proud of me and that was huge motivation. Thank you both for teaching me to think critically and allowing my siblings and I pursue the careers and goals that we wanted.
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Amazon Mechanical Turk (MTurk)

*Diagnostic and Statistical Manual of Mental Disorders* (5th ed., *DSM-5*)
CHAPTER ONE: INTRODUCTION

Discovering the motivations for problematic behavior can be difficult, with answers being as varied as the individual. Pornography use is no exception for those who view it as problematic (Grubbs, Wright, et al., 2019). While pornography use may be problematic for many individuals and their partners, use is especially problematic for those who are religious. Religious individuals face the contradiction between their use and their beliefs and subsequently experience shame from continued use (Borgogna et al., 2018; Grubbs, Wright, et al., 2019; MacInnis & Hodson, 2016; Sniewski & Farvid, 2019b; Volk et al., 2019). With the growing availability of internet pornography (Regnerus et al., 2016) and the negative outcomes it can induce on its users (Grubbs, Wilt et al., 2018; Perry, 2018), researchers have begun to focus on problematic pornography use for religious individuals (Grubbs, Grant, et al., 2018; Hagen et al., 2018; MacInnis & Hodson, 2016; Perry, 2017a; Smith, 2003).

One of the motivations for pornography use in individuals across demographics is to cope with the negative emotional state of loneliness (Butler et al., 2018; Grubbs, Wright, et al., 2019; Kim et al., 2009; Yoder et al., 2005). While loneliness can cross multiple demographic characteristics, single individuals are specifically at risk because they lack intimate relationships and have lower levels of social connectedness (Bucher et al., 2019; Liu et al., 2020). The lack of close, intimate relationships is a distinguishing marker for increased loneliness (Heinrich & Gullone, 2006). Some singles who are religious turn to religious involvement as an avenue to meet this basic need to belong (Pfund & Miller-Perrin, 2019). However, religious involvement does not meet this need without the presence of an intimate relationship (Reis, 2017).

An emotionally intimate relationship is developed when an individual personally discloses information to another and then receives an understanding and empathetic response in
return (Reis & Shaver, 1988). This process of intimacy is proposed as meeting the need to belong in the single, religious individual. Thus, with the existence of a close, emotionally intimate relationship, the need to cope with loneliness could potentially be reduced along with the desire for pornography use. To date, little research has focused specifically on the challenges that single, religious individuals face in dealing with their problematic pornography use. This study seeks to specifically examine the effect intimate relationships have on loneliness and pornography use for religious, single pornography users.

**Background of the Problem**

To understand the context of the problem, the growth of both internet pornography use and the single population must be described. Of importance for understanding pornography use is the concept that religious individuals view it as more immoral (problematic) than nonreligious individuals (Perry, 2019a). Grubbs and Perry (2019) described this phenomenon as moral incongruence: when the behavior of the individual does not match what the belief systems say is wrong. Additionally, a working conceptualization of emotional intimacy within the context of loneliness and pornography use must also be established. Intimacy is described as a transaction through certain behaviors through the intimacy process model detailed within this section (Reis & Shaver, 1988). The following will briefly detail these elements.

**Pornography Use**

Pornography use has been increasing rapidly with the introduction of the internet (Rissel et al., 2017; Wright, 2013). This growth can be attributed to many factors, such as the accessibility, affordability, and anonymity the internet provides its users (Cooper & Sportolari, 1997). Statistics reflect the pervasive nature of internet pornography use. Nearly a quarter of all internet searches are centered on adult terms (Short et al., 2015). Additionally, 46% of men and
16% of women between the ages of 18 and 39 intentionally view pornography in any given week in the United States (Regnerus et al., 2016). In conjunction with the expanding use of pornography, there are many negative effects on the individual. The negative effect stemming from pornography use is manifested in an individual cognitively (Sun et al., 2016), behaviorally (Foubert, 2017), and relationally (Perry & Davis, 2017). However, there remains some evidence pointing to a neutral or positive effect pornography use has on an individual, such as increasing sexual satisfaction in marriage and reducing stress (Attwood et al., 2018; Bridges & Morokoff, 2011; Kohut et al., 2017; Watson & Smith, 2012).

The debate between the organizers of the recently released *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., *DSM-5*) reveals the discordant perspectives on the effects of pornography use (American Psychiatric Association, 2013; Kafka, 2010; Winters, 2010). The exclusion of a proposed “hypersexual disorder,” in which problematic pornography use could be included, points to the difficulty in pathologizing a natural desire for sexual pleasure (Kafka, 2010). Proponents of the new disorder pointed to the negative effect on functioning that excessive use causes (American Psychiatric Association, 2013). However, it was difficult to differentiate if the resultant dysfunctional behavior was from the behavior itself or from the individual user’s perception of the behavior (Winters, 2010). The decision not to create a diagnosis for pornography users led researchers to propose that further research was needed and should focus on users’ perception of their addiction to pornography use rather than the behavior itself.

Without a clear diagnosis, the concept of perceived addiction was proposed to describe the effect continued pornography use has on individuals who view their use as oppositional to their beliefs and convictions (Grubbs & Perry, 2019; Perry, 2018). The teachings of most faith
systems prohibit pornography use and other sexual acts outside of marriage (Borgogna et al., 2018; Lykke & Cohen, 2015). Followers of these faiths consequently believe that their pornography consumption is wrong (Grubbs & Perry, 2019). Their continued use leaves them with thoughts that they are addicted (Grubbs, Kraus, & Perry, 2019), shame for their inability to stop (Volk et al., 2019), and loneliness in their desire to hide and cover their “sins” (Sniewski & Farvid, 2019b). While religious individuals are less likely to be pornography users (Whitehead & Perry, 2017), the growth of pornography use has caused it to become normative, even among religious singles. One study showed that nearly half of Americans ages 18–30 who profess to be practicing Christians actively seek out pornography at some point in any given year (Barna Group & McDowell, 2016).

As stated previously, one of the motivations for continued pornography use, even for the religious individual, is to cope with the negative emotion of loneliness (Butler et al., 2018; Efrati & Amichai-Hamburger, 2019). While an individual’s faith can insulate feelings of loneliness and pornography use through religious activities such as church attendance and shared experiences (Grubbs, Exline, et al., 2015; Perry, 2017a), continued use for the religious individual is problematic (Grubbs, Kraus, & Perry, 2019). Pornography use can be seen as a pleasure-seeking activity to lessen distressing emotions such as loneliness. Thus, there appears to be a need to evaluate if a healthy relationship can reduce loneliness and the motivation for continued problematic pornography use, especially for the religious individual.

Loneliness

Loneliness is a common occurrence, with as many as 80% of individuals under 18 and 40% of adults over 65 in the United States reporting being lonely at least sometimes (Hawkley & Cacioppo, 2010). Inclusively, the term *loneliness* can be described as an emotional state
stemming from a lack of fulfillment of the human need to belong (Baumeister & Leary, 1995). However, there is a distinction between emotional and social loneliness (Weiss, 1973). Emotional loneliness is the perception of loneliness, while social loneliness is related to the number of individuals within a support system (Weiss, 1973). Loneliness can occur independently of the number of friends within an individual’s support system (Parker & Seal, 1996). Therefore, one can still experience loneliness even with many social connections (Weiss, 1973). Although loneliness is an adverse state for the individual, it is argued to be a normal experience for anyone socially connected (Medora & Woodward, 1986). Studies have shown that some individuals use pornography to cope with their negative feelings of loneliness (Butler et al., 2018; Kim et al., 2009; Yoder et al., 2005). Emotional loneliness is the focus for this study, as it is defined as an individual’s perception of belonging and social connectedness.

Singles

The first unique contribution of this study stems from its focus on the specific population of singles. Singles are a rapidly growing demographic population within the United States (Yardeni Research, 2016). Specifically, the most recent census data in the United States show that singles are now the majority population demographic, with over 51% of individuals over the age of 18 not being married, with nearly 30% having never been married (U.S. Census Bureau, 2019). Marriage is also being delayed to later in life, with one in four individuals having never married by age 35 (U.S. Census Bureau, 2019). The unique relational status of this growing population produces some challenges specifically for those religious individuals who use pornography.

Singles who have high religious involvement face challenges related to their faith system and their sexual behavior. Religious singles who continue to use pornography are faced with the
moral incongruence between their behavior and their moral beliefs (Perry, 2018). Since sexual behavior is only acceptable within marriage for most major faith systems (Thomas et al., 2017), the incongruence of religious beliefs and sexual desire becomes problematic. This moral incongruence begins at an early age. With puberty beginning in early adolescence, yet marriage being delayed for some into their 30s (U.S. Census Bureau, 2019), singles are left with no accepted outlet for their desire for sex. The desire for sex has additionally been normalized through the debate on the inclusion of hypersexual disorder in the writing of the DMS-5 (Wakefield, 2012).

Additionally, singles face cultural and social discrimination based on their relational status as captured by singlism (DePaulo & Morris, 2005). While being single does not guarantee a lack of social connectedness or satisfaction with relationships (Harris et al., 2019), singles are more prone to loneliness due to status and cultural pressures (Liu et al., 2020). This loneliness can lead to an increased risk of beginning or increasing pornography use (Flanagan, 2013). Even for the single who has high religious involvement, pornography use can leave them feeling like “damaged goods” and continue to isolate them socially (Leonhardt et al., 2018). Pornography use for some religiously involved singles then becomes a way to meet sexual and relational desires that cannot be fulfilled from their current relational status (Cooper et al., 2004).

Due to the discordant paradigms from society and religious organizations regarding the pros and cons of pornography use, religious singles can be left with confusion on how to deal with their continued use. Paradigms from some scholarly research have focused on helping individuals accept pornography use to lessen the perceived addiction and, thus, its problematic outcome for the individual (Borgogna et al., 2018; Fall & Howard, 2015; Gola et al., 2016; Isaacs & Fisher, 2008; Sniewski & Farvid, 2019a; Watson & Smith, 2012). Abstinence is seen as
impractical, and thus only acceptance can free the individual from the negative effect of continued pornography use. Conversely, religious organizations such as the evangelical church have focused their message on abstinence from and censorship of pornography (Bornsheuer et al., 2012; Thomas, 2013; Thomas et al., 2017). Ultimately, this leaves the single with a potentially large period (puberty until marriage) with sexual and relational desires (nonpathological and healthy) and no behavior to meet these needs for those with high religious involvement. The dearth in the literature focusing on religious singles and pornography use may be attributed to this dilemma.

**Intimacy**

To address the gap mentioned above in the literature for religious, single pornography users, intimacy is introduced in this study as a potential replacement variable to reduce loneliness and subsequent pornography use. Reis and Shaver (1988) first introduced the intimate relationship as a behavioral process through their intimacy process model. This behavioral process is described as when an individual personally discloses information to another and then receives an understanding and empathetic response in return (Reis & Shaver, 1988). The more personal or “higher risk” the disclosure is, the more intimate the relational connection can be. However, once disclosure happens, if the response is negative or condemning, intimacy is eroded, hurt is felt, and shame deepens for the person disclosing (Reis & Shaver, 1988). This behavior of disclosing personal information and getting a positive response is described as a behavioral transaction that deepens the perceived emotional intimacy between two individuals (Reis & Shaver, 1988). Previous research has also focused on intimacy as a behavioral transaction from one person to another (Parks & Floyd, 1996; Reis & Shaver, 1988; Ridley, 1993). However, there is little focus in this area currently due to difficulty in defining *intimacy*. 
and confusion with other similar terms such as *closeness* and even a sexual encounter (Barker et al., 2018; Popovic, 2011a).

The intimacy process can be seen to have great benefits for the individual. The presence of at least one intimate relationship has been linked to a reduction in loneliness (Floyd & Hesse, 2017) and even major health benefits such as a prolonged life (Ornish, 1998). Understanding the effects of intimate relationships within religious involvement may further elucidate the benefits of social support within religious activities (Fatima et al., 2018; Krause & Ironson, 2019). Thus, the development of an intimate relationship for the single, religious pornography user could be a key factor in reducing loneliness and the desire for pornography. The intimacy could help meet the need for belonging and thereby reduce feelings of emotional loneliness. Additionally, intimacy could be a way to focus behavior away from pornography use and reduce moral incongruence. This study seeks to extend the research on religious singles who use pornography by evaluating the relational effect of a nonromantic intimate relationship.

**Purpose of the Study**

The purpose of this study is to determine how an intimate relationship moderates the relationships between religious involvement, loneliness, and pornography use for singles. Specifically, the direct relationship between religious involvement and pornography use is examined. Additionally, the mediating role of loneliness on the direct relationship between religious involvement and pornography use is examined. Finally, and of primary focus, is the examination of the moderating role of intimacy on both the direct relationship and the indirect mediated relationship between religious involvement, loneliness, and pornography use. These relationships are applied to the specific population of singles as defined as not married or in a dating relationship.
Research Question and Hypotheses

The research question and hypotheses for this study are as follows:

**Research Question:** In what way does an intimate relationship moderate the causal sequence of religious involvement and pornography use through loneliness for a sample of singles?

**Hypothesis 1a:** It is hypothesized that religious involvement has a negative direct effect on loneliness.

**Hypothesis 1b:** It is hypothesized that loneliness has a positive direct effect on pornography use.

**Hypothesis 1c:** It is hypothesized that religious involvement has a negative direct effect on pornography use.

**Hypothesis 1d:** It is hypothesized that intimacy has a negative direct effect on loneliness.

**Hypothesis 1e:** It is hypothesized that intimacy has a negative direct effect on pornography use.

**Hypothesis 2:** It is hypothesized that religious involvement has a negative indirect effect on pornography use through loneliness.

**Hypothesis 3a:** It is hypothesized that intimacy attenuates the negative indirect relationship of religious involvement on pornography use through loneliness.

**Hypothesis 3b:** It is hypothesized that intimacy attenuates the negative direct relationship of religious involvement on pornography use.
Assumptions and Limitations

There are several assumptions and limitations to this study that must be addressed. First is the assumption that the recruitment of respondents from Amazon’s Mechanical Turk (MTurk) is representative of the general population. Data collected through MTurk have been notably diverse and even superior to data gathered through other collection methods for generalization to the population (Casler et al., 2013; Shapiro et al., 2013). It is also assumed that collected responses represent pornography users, single individuals, and those with high religious involvement and therefore are generalizable. Further assumptions are acknowledged that scales and items used to measure what they are intended to measure (religious involvement, intimacy, and loneliness). Also, to some extent, it is assumed that individuals who are high in religious involvement view their pornography use as problematic. While this assumption is based on the current literature (Gola et al., 2017; Grubbs & Perry, 2019; Sniewski & Farvid, 2019a; Wilt et al., 2016), acknowledgment is made that not all religious individuals view their pornography use as problematic.

Limitations of this study begin with the self-reporting nature of the survey method. While
it is assumed that respondents were truthful in their responses, it is possible answers were not entirely truthful. Disclosing pornography use, especially for religious individuals, can be a shameful experience (Chisholm & Gall, 2015; Flanagan, 2013). Therefore, it is possible that the prevalence and frequency of pornography use data are not accurately reported. The motivation for participation in this study is also not known, as MTurk is a pay-for-use service. Differences between individuals choosing to participate and those who do not are unknown. The data set used was also combined with other scales and measures for a grouping of several studies being conducted by other researchers. As such, individual responses may be confounded and potentially skewed. Additionally, due to the research design being correlational and using cross-sectional sampling, strict causal relationships between constructs cannot be inferred.

**Definition of Terms**

**Intimacy**

As stated previously, defining intimacy is difficult due to its association with similar terms and its use to describe different types of relationships. At its root, the term comes from the Latin words *intimus* (innermost) and *intimare* (to make the innermost known; Reis & Shaver, 1988). However, its similarity with other words such as *closeness, affection*, and *responsiveness* adds to the confusion in defining it (Bartholomew, 1990; Hesse & Floyd, 2019; Reis & Gable, 2015). The term is perhaps more commonly found as an application to a sexual encounter or a reference to the marriage relationship (Barker et al., 2018; Holland et al., 2016). For the purpose of this study, intimacy is defined as a behavioral process as first described by Reis and Shaver (1988), who described intimacy as “an interpersonal process that involves the communication of personal feelings and information to another person who responds warmly and sympathetically” (p. 387). Thus, the relationship being measured is not the level of feeling, or emotion one has for
another but rather the access an individual has to at least one relationship in which they can disclose anything and get a sympathetic response (behavioral process). Intimacy is measured by the Emotional Intimacy Scale (Sinclair & Dowdy, 2005).

**Loneliness**

Loneliness can be difficult to define as well due to the inherent differences found in every individual. Weiss (1973) was first to make a distinction in this term to differentiate social and emotional loneliness. Social loneliness refers to the lack of social contact, while emotional loneliness is a lack of meaningful, intimate contact with another (Weiss, 1973). The focus of this study is emotional loneliness. The working definition of loneliness for this research is “the aversive state experienced when a discrepancy exists between the interpersonal relationships one wishes to have, and those that one perceives they currently have” (Heinrich & Gullone, 2006, p. 699). Thus, the focus is on the perceived state of the individual and is not dependent on the amount of social contact. Loneliness is measured by the Revised UCLA Loneliness Scale (Russell et al., 1980).

**Pornography Use**

Due to the differences in societal and cultural norms, defining pornography and its use is challenging. While the root word, *pornographos*, strictly defined means “to write about prostitutes,” a better definition is needed to describe its current use (Kendrick, 1996, p. 1). For the purpose of this study, the working definition is based on the work of a global interdisciplinary panel that defined pornography as “sexually explicit content intended to arouse” (McKee et al., 2019). While the majority of this content is assumed to be accessed through the internet, this definition would also include other forms of media (books, magazines, videos, etc.). Additionally, the use of pornographic material is described as intentional access, whether
viewing or reading. This definition is also not tied to masturbation, even though acknowledgment is made to the strong ties between pornography use and masturbation (Perry, 2019b; Regnerus et al., 2016).

**Religious Involvement**

While the terms *religion* and *spirituality* are often used in conjunction (Ahrens et al., 2010; Ai et al., 2013; Chisholm & Gall, 2015; Dilmaghani, 2018; Koenig, 2012), *religious involvement* is used to capture the behavioral aspects of faith, religion, and spirituality (Koenig et al., 2015), thus, in keeping with the other behavioral variables in this study, religious involvement is the chosen variable for this current study. The behavior and actions (religious involvement) supporting an individual’s faith more accurately reflect the intensity of the faith than a self-identification or loose association (Koenig et al., 2015). For this study, religious involvement is measured by the subscales of the Belief Into Action Scale (Koenig et al., 2015). These subscales assess the extent to which an individual’s actions are congruent with their faith, such as their financial support, private activities (prayer, reading, etc.), involvement in religious community activities, and submission to religious pillars or teachings (Koenig et al., 2015).

**Single**

Definitions of relational status have become increasingly complex and varied. The struggle in defining the relational status of an individual may be the basis for the “it’s complicated” option within the social media platform Facebook (Zhao et al., 2012). While variations in individual perceptions of relational status exist, the definition of a single person in this study is a person not in a romantic relationship. This definition is independent of past marital ties and thus includes individuals who are divorced, separated, never married, and widowed. This use of the term also excludes of individuals who are dating, cohabitating, or other definitions of
romantic involvement with another. Acknowledged are challenges in this definition related to categorizing individuals who may have sexual relationships with others but do not consider themselves romantically involved, such as those who have “friends with benefits” (Furman & Shaffer, 2011). However, maintaining this definition still captures the majority of individuals who have less opportunity to form an intimate relationship.

**Significance of the Study**

This study’s significance is seen in its implications for society at large, counselors, religious organizations, and researchers. First, society at large can benefit from further knowledge regarding motivations for behaviors such as pornography use and the importance of intimate relationships. Counselors also can find this study of significance in their work with religious singles who use pornography. Until now, little focus has been placed on the growing singles population and their experience with sexual behavior such as pornography use. Counselors may begin to see the possibility of application of new relational treatments as an outlet for individuals with no current sexual outlet. Religious organizations are also aided in their ability to help their single participants by presenting an alternative message for pornography users other than abstinence and potential shame. Finally, the boundaries of research in this area are extended to include singles and intimate relationships into the discussion of problematic pornography use.

**Theoretical and Conceptual Framework**

This study builds upon the current research on pornography, as well as a few theoretical perspectives. Current scholarly research on pornography use shows it has negative outcomes, which are in some part due to frequency of use (Fernandez et al., 2017; Grubbs, Wilt, et al., 2018; Perry, 2018). Pornography use additionally becomes more problematic for the religious
individual with the presence of moral incongruence and perceived addiction (Bradley et al., 2016; Grubbs, Exline et al., 2015). Research has also described pornography use as a coping strategy to deal with loneliness (Butler et al., 2018; Efrati & Amichai-Hamburger, 2019). While singles are not inherently lonely due to their status (Harris et al., 2019), they are more prone to feeling lonely due to a lack of opportunity to form close relationships compared to those in a romantic relationship (Liu et al., 2020). Conceptually, pornography use for singles can be a way to deal with the lack of emotional connection with others, especially for those who are religious and have no outlet for their desire for sex and relationship.

The application of intimacy within this study is built upon elements of affection exchange theory. Affection exchange theory broadly describes relational interactions based on the exchange of needs for each individual involved (Floyd, 2006). This theory, at its core, states that individuals meet the inherent need to belong by an exchange of affectionate behavior (Floyd & Hesse, 2017; Hesse & Floyd, 2019). While affectionate behavior differs from intimacy, it has been studied for its ability to reduce the desire for pornography use in individuals (Hesse & Floyd, 2019). However, Hesse and Floyd (2019) did not look specifically at singles and the unique struggle they face in lacking the opportunity for a close relationship. There remains a need to specifically apply intimacy to the singles population to potentially describe the relationships between variables. Conceptualized, this current study seeks to determine if an intimate relationship for the single individual can be a way to meet the need to belong and avoid loneliness and subsequent pornography use.

**Organization of the Remaining Chapters**

The remaining chapters further explain and address each of the variables presented for this study. Chapter Two (Review of the Literature) exhaustively outlines the present research and
scholarly conversation on religious involvement, loneliness, pornography use, intimacy, and the targeted population of singles. Chapter Three (Methods) outlines the procedures and methods used to design the research as well as collect and analyze the data. Chapter Four (Results) describes the results in detail. Finally, Chapter Five (Summary, Conclusions, and Recommendations) applies the results to the ways this research is significant and discusses the implications of the results.

**Summary**

This chapter detailed the presenting struggle for religious singles who use pornography. This growing demographic has no sexual or healthy relational outlet for a nonpathological desire for sex and relationship. Thus, intimacy was presented as a potential moderating variable between the relationship of religious involvement, loneliness, and pornography use. The following chapter presents the research available on each of these constructs to further explain these relationships and the importance of this study.
CHAPTER TWO: REVIEW OF THE LITERATURE

The following chapter will review the literature on each of the variables outlined in the previous chapter. First, pornography use will be described as it relates to the other variables. Prevalence of and motivations for use are then reviewed, followed by both positive and negative outcomes. Next, research on loneliness and its mediating effects on pornography use is presented. A discussion of religious involvement is next, which outlines the current research on demographics and prevalence related to pornography use. Intimacy literature is reviewed by defining the term, differentiating similar concepts, and outlining its moderating effects on other variables. Finally, the literature on singles as a population is highlighted as an important factor in this study. It focuses on the needs, struggles, and perceptions of singles that encapsulate the importance of the present study.

Pornography

To understand pornography, a working definition must be set in place. While a recognizable term, defining it can be difficult. The word comes from the Greek *pornographos*, meaning “to write about prostitutes” (Kendrick, 1996, p.1). However, this definition is dated, without regard to changing society with varying delivery methods. Currently, there is a lack of consensus on a working definition of pornography among researchers. Even a global, interdisciplinary panel struggled to agree upon a definition (McKee et al., 2019). Through some work, a rough definition was developed using the key terms *explicit* and *arouse*. Their working definition is utilized for this study: “sexually explicit content intended to arouse” (McKee et al., 2019, p. 1088).

Dissemination of pornographic material has changed throughout history and has rapidly increased with the use of the internet (Brosius et al., 1993; Ogas & Gaddam, 2011; Rissel et al.,
It is reported that in the United States, 46% of men and 16% of women between the ages of 18 and 39 intentionally view pornography every week (Regnerus et al., 2016). Additionally, nearly a quarter of all internet searches are centered on adult terms (Ogas & Gaddam, 2011; Short et al., 2015). With such large amounts of data and sexually explicit content being proliferated, there has been a desire to understand the reasons for and implications of this phenomenon (Carrol et al., 2008; Grubbs, Wright, et al., 2019; Price et al., 2016).

Cooper and Sportolari (1997) sought to capture the rapid growth of internet pornography use through their “3 A” model. They attributed the rapid spread to the accessibility, affordability, and anonymy that the internet provides for pornographic content. Others have used this accessibility model (Brosius et al., 1993; Carrol et al., 2008; Foubert, 2017; Griffiths, 2012). Previously, individuals would be forced to rely on the purchase of print versions or movie rentals in order to access pornographic content (Carrol et al., 2008). Now, anywhere an individual has an internet signal (accessibility), content can be viewed via a smart device (anonymy), often at little to no cost (affordability; Cooper, 1998). Harper and Hodgins (2016) further expanded the model to include the concept of “novelty” as a fourth characteristic to explain the increase in internet pornography use. Novelty refers to the immense amount of diversity in explicit material on the internet and can be a way to further explain the confusion surrounding pornography and addiction.

Specifically, research has been slow to recognize the effects of internet pornography use (Grubbs, Kraus, et al., 2019; Perrin et al., 2008). While some research has sought to classify problematic internet pornography use as a diagnosable disorder (Duffy et al., 2016; Levin et al., 2012), professionals in the field are also cautious about applying the addiction label (Grubbs,
Wilt, et al., 2018; Wines, 1997). As stated before, the novelty of internet pornography can be a factor in an individual’s ability to search thousands of videos and never be satisfied (Orzack & Ross, 2000). Users often download thousands of pornographic files and never revisit them (Delmonico & Miller, 2003). These behaviors demonstrate similarities to the tolerance and obsession that seem to indicate an addictive phenomenon. However, strict definitions of addiction have not allowed diagnosis within the clinical arena.

The American Psychological Association seriously considered the inclusion of hypersexual disorder as a diagnosis in the recent DSM-5 (Kafka, 2010). The challenges that this diagnosis’s inclusion faced centered on the criteria and the ability to define specific dysfunction. For instance, it was difficult to argue that wanting sex and having an inability to stop was not a natural human behavior (Wakefield, 2012). Additionally, there was little consensus on how to determine if it was the behavior or simply the perception of the behavior that was causing the dysfunction for the individual (Winters, 2010). Despite the inclusion of gambling disorder as a behavioral addiction, the decision was made to exclude any diagnosis of hypersexual disorder in the DSM-5 (Kafka, 2014). These same challenges were found in the inclusion of compulsive sexual behavior disorder in the medical field’s International Classification of Diseases (11th rev., World Health Organization, 2018). The inclusion was intended to cover those individuals who wanted treatment for their functionally impaired behavior but did not meet the diagnostic criteria for paraphilia or other disorders (Kraus et al., 2018). However, there still appears to be a gap in the ability for clinicians to diagnose clients who have a moral dilemma with pornography use, as the International Classification of Diseases (11th rev.) designates this criterion as insufficient for diagnosis (World Health Organization, 2018).

Despite the confounding findings surrounding pornography use, addiction, and the ability
for clinicians to diagnose, there remains strong evidence for negative effects for individual users (Allen et al., 2017; Foubert, 2017; Stein et al., 2001; Sun et al., 2016; Wright, 2013). Grubbs, Wright, et al. (2019) suggested that there is a bias in the literature that tends to skew the discussion on pornography use to the negative (Campbell & Kohut, 2017) and more male-centric (Short et al., 2012). However, the negative effects of pornography are multifaceted, including cognitive (Allen et al., 2017; Braithwaite, Coulson et al., 2015; Perry & Hayward, 2017), behavioral (Braithwaite, Givens et al., 2015; Griffiths, 2000), and relational (Lykke & Cohen, 2015; Sun et al., 2016).

**Negative Effects of Pornography Use**

Pornography has been shown to negatively affect the way an individual thinks (cognitions). With the average age of first exposure to pornography being documented to be around 11 years old (Johnston, 2013; Wolak et al., 2007), the views of an individual’s “sexual scripts” can begin solidifying at a young and formative age (Sun et al., 2016). These sexual scripts can solidify in concrete thinking and identity schemas regarding oneself continuing into adolescence (Ainsworth, 1989). One study suggested that when minors, who are still developing cognitively, participate in sexual activity, they are a particularly vulnerable population, yet very difficult to study (Alarcón et al., 2019). Despite this, there is a downward trend in unwanted exposure to pornography for adolescents aged 10–17 (Jones et al., 2012). Doornwaard et al. (2015) identified several trajectories for both boys and girls following wanted pornography use. However, none of these trajectories were prescriptive, suggesting there are other factors at play. For adolescents who continue using pornography, use has negatively affected thinking into early adulthood (Sun et al., 2016).

Irrespective of age and first exposure, continued use has been found to negatively affect
an individual’s view of themselves (Sun et al., 2016; et al., 2019), view of their spouse or partner (Staley & Prause, 2013; Wright et al., 2017), and thoughts of others as sexual objects to be possessed (Wilson, 2014). Continued use can also create an intrapersonal interaction of beliefs about pornography use that can additionally lead to increased depression (Willoughby et al., 2019), anxiety (Borgogna et al., 2018), insecurity (Kohut et al., 2017), and shame (Gilliland et al., 2011; Reid et al., 2011). However, confounding this research is the unclear nature of the direction of these relationships. For instance, several studies suggest that pornography use can be a means of coping with these intrapersonal cognitions and distresses rather than being an outcome of use (Perry, 2018; Regnerus et al., 2017; Reid et al., 2009; Volk et al., 2019).

Behaviorally, pornography use has been shown to contribute to a variety of negative outcomes. Pornography use has been positively associated with sexual violence (Foubert, 2017), child abuse (Drăgan, 2018), and aggression (Wright et al., 2016). However, a direct causal relationship has not been substantiated. Previous researchers have suggested a correlation between these behaviors and pornography use while noting caution in suggesting causation (Hald & Malamuth, 2008; Prause & Pfaus, 2015). Wright et al. (2016) additionally posited that pornography use could be a means of sexual release, which could, in turn, reduce aggressive behaviors. Still, pornography use is linked to engagement in many risky behaviors such as paid sex (Wright & Randall, 2012), a higher number of partners (Sinković et al., 2013), sex with substance use (Peter & Valkenburg, 2016), and even unethical behaviors in business (Mecham et al., 2019).

The effect pornography has on couples and marriages is an area of extensive study (Guidry et al., 2020; Husain & Qureshi, 2016; Newstrom & Harris, 2016; Perry & Davis, 2017; Perry & Schleifer, 2018). Looking at the effects on a relationship shows the importance of the
perception of use in determining its effect on an individual. Pornography use is associated with higher rates of divorce (Doran & Price, 2014; Wright et al., 2017), reduced marital quality (Perry, 2016, 2017b), diminished trust, and loss of hope in the exclusivity of one partner (Kohut et al., 2018; Newstrom & Harris, 2016; Zillmann, 2000). However, for some couples, pornography can enhance the relationship if both parties agree to use it together (Kohut et al., 2017). Kohut et al. (2018) further assessed this interaction by separating couples that used pornography together (shared pornography use), couples that both used but separately (concordant solitary pornography use), and couples in which one couple member used pornography and the other did not (discordant pornography use). Results from this cross-sectional study of heterosexual couples ($N = 200$) showed greater closeness and communication in couples that shared pornography use and lower closeness and communication in the discordant couples compared to concordant couples.

Within the relational interaction of pornography use, one can see the clear gender differences in the perception of pornography use. One study analyzed this gender difference over the past 40 years based on the individual’s support for pornographic censorship. Results showed a decline in opposition to pornography for both genders, although men’s opposition declined at a faster rate than females’ (Lykke & Cohen, 2015). Bridges and Morokoff (2011) showed that while men who viewed sexual media had more negative relational satisfaction, women who used sexual media had higher relational satisfaction. Additionally, women have been shown to have generally lower interest in pornography use (Popović, 2011b), later age of first exposure (Harper & Hodgins, 2016), and less frequent use when compared to men (Regnerus et al., 2016).

Positive Effects of Pornography Use

While negative outcomes have been correlated with pornography use, previous research
also evidences positive outcomes. Gender, sexual preference, and religiosity are potential mediators to the divergent nature of outcomes (Weinberg et al., 2010). Societally, there is a push to normalize the behavior and reduce negative stigmas surrounding use (Attwood et al., 2018). Watson and Smith (2012) suggested that there are positive ways to use pornography in educational, clinical, and medical settings. Maddox et al. (2011) studied the impacts of viewing sexually explicit material alone, with a partner, or not at all. They found that there are more positive outcomes with only viewing with a partner than with viewing alone. However, they also determined that there are higher rates of infidelity with those who view with a partner than with those who never view. The use of pornography with a partner has also been shown to increase couple closeness, relationship quality, communication, and sexual comfort (Kohut et al., 2017; Grov et al., 2011). Kohut et al. (2017) additionally found from their survey of over 15,000 respondents that couples most commonly reported “no negative effects” from their pornography use. Still, the self-reporting nature of these positive effects is also argued to potentially be a form of denial or justification for behaviors (Wright et al., 2017). Coupled with the difficulty in diagnosing problematic pornography use, one study on clinical treatment argues that abstinence is impractical and that acceptance of use should be the goal to reduce distress (Sniewski & Farvid, 2019a).

**Motivations**

The question of why individuals use pornography can have as many answers as users. Pornography user demographics tend to skew toward younger men exposed to pornography at an early age (Perry, 2019a). Other predictive factors include socioeconomic status, employment, urban living, and access to technology (Buzzell, 2005; Sirianni & Vishwanath, 2016). Stack et al. (2004) further described the potential user as having weak religious ties, a lack of a happy
marriage, and past sexual experiences. Beyond these slight predictors in demographics, research has just begun to describe the individual motivations for pornography use. One study focused on the self-reported motivations for use using a sample of current consumers of pornography, including both genders (\(N = 76\)). In the total sample, the primary reasons identified for pornography use were “I use it to masturbate” (53.9%), “It is sexually exciting” (15.8%), and “curiosity” (13.2%; Emmers-Sommer, 2018). Perry (2019b) also contended masturbation was the ultimate goal of pornography use and thus the causal factor in negative outcomes such as decreased relational satisfaction. However, the study did not find evidence for relational dissatisfaction being a cause for pornography use and masturbation.

Gender, religiosity, and relationship status are other factors that divide motivations for pornography use. Motivations appear to change once gender is delineated. Women’s motivation for pornography use has been shown to center on enhancing their current sexual relationship (Albright, 2008; Bridges & Morokoff, 2011; Grov et al., 2011). Men tend to use pornography as a means of solitary sexual pleasure (Bőthe et al., 2020; McKenna et al., 2001) and to cope with stress (Paul & Shim, 2008). While religiosity is a demotivating factor for pornography use (Hagen et al., 2018; Short et al., 2015; Wilt et al., 2016), one study suggested that religious practice is a stronger demotivating factor than religious belief (Nelson et al., 2010). Regarding relationship status, some research indicates that singles may use pornography to cope with loneliness (Butler et al., 2018; Hesse & Floyd, 2019). However, one study of college students found that pornography use increased for those in romantic relationships (Brown et al., 2017).

Loneliness

Individuals are built to be relational. Baumeister and Leary (1995) defined this need for relationships as a “need to belong.” This concept has been found throughout many different
theories and research on human behavior. Maslow (1968) included “belongingness” in the middle of his hierarchy of needs, while the need to foster and maintain strong relationships is at the heart of Bowlby’s attachment theory (Bowlby, 1969). Additionally, developmental psychologist Erik Erikson (1963) described the importance of meaningful relationships, particularly for adolescents forming their identity. Thus, when an individual does not get this need fulfilled, loneliness can result (Heinrich & Gullone, 2006).

The prevalence of loneliness is also high, with variations dependent on age (Luhmann & Hawkley, 2016; Qualter et al., 2015). Hawkley and Cacioppo (2010) found that within the United States that as many as 80% of individuals under 18 and 40% of adults over 65 report being lonely at least sometimes. Additionally, Victor and Yang (2012) studied loneliness prevalence in the United Kingdom and found age was a significant factor, with the highest reported rates in adults over 65 and under 25. Perceptions of loneliness intensity also increase with age, with one study finding nearly 10% of participants over 65 years of age reported loneliness as “painful” (Golden et al., 2009).

Weiss (1973) seminally formulated a distinct difference between social and emotional loneliness. Social loneliness is defined by an insufficient amount of social contact, while emotional loneliness is the lack of meaningful, intimate contact (Weiss, 1973). This distinction is important, as it has been shown that lonely and nonlonely individuals do not differ in their activities or amount of time spent with others (Hawkley et al., 2003; Nicolaisen & Thorsen, 2014; Nowland et al., 2018; Wheeler et al., 1983). Thus, overcoming loneliness is transcendent of the number of friends an individual may have (Parker & Seal, 1996).

The feeling of loneliness is argued to be a negative experience with a purpose. Mikulincer and Shaver (2007) contended that the feeling of loneliness is a type of trigger that
shifts an individual toward the awareness of an unmet need (meaningful relationships). However, behaviors and experiences that disrupt the need for relationships can render an individual chronically vulnerable to the feeling of loneliness (Mikulincer & Shaver, 2007). Thus, prolonged loneliness is a predictor of several negative outcomes. Loneliness is associated with higher levels of stress (Hawkley et al., 2003), poorer social interactions (Segrin, 1996; Wheeler et al., 1983), academic struggles (Asher & Paquette, 2003), and even health risks (Kurina et al., 2011; Olsen et al., 1991).

Linking loneliness and pornography use is important, as loneliness may play a key role in the motivations for pornography use. Demographically, adolescents are significantly more vulnerable to continued feelings of loneliness (Cacioppo & Cacioppo, 2018). Mesch (2009) linked internet pornography use in adolescents to specific social groups and determined that weak social ties increase behavioral risks such as pornography use. Similarly, one study focused on Israeli adolescents (N = 713) and found a direct correlation between loneliness and pornography use in adolescent Israeli boys with certain attachment styles (Efrati & Amichai-Hamburger, 2019).

The link between loneliness and pornography use does extend beyond adolescence. While the research is still developing, three studies were found which made a direct link between pornography and loneliness across multiple demographics (Butler et al., 2018; Kim et al., 2009; Yoder et al., 2005). Butler et al. (2018) sought to describe this direct relationship between pornography use and loneliness across age and gender. Results from this study showed that there is a positive and significant effect bidirectionally between pornography use and loneliness. Those who viewed pornography were more likely to experience loneliness, and those who experienced loneliness were more likely to use pornography (Butler et al., 2018). These findings were
developed into a recursive model wherein each construct feeds off the other cyclically. It was hypothesized that as loneliness increased, pornography use increased, which then led to more loneliness. Interestingly, the participants ($N = 1,247$) from this study were predominantly married (68%), as well as young (25–29), male (90%), and White (77%). Another study similarly linked the connection between pornography use and loneliness (Yoder et al., 2005). Results showed a significant association between internet pornography use and loneliness. While not specifically accounting for relationship status, singles comprised a higher percentage (41.75%) of participants than other categories (married, divorced, dating/engaged; Yoder et al., 2005). Kim et al. (2009) used pornography as a factor in defining problematic internet use. Results showed that individuals who are experiencing loneliness or lack of social ties have an increased likelihood of using the internet as a means of coping (Kim et al., 2009). Still, pornography use is not able to meet relational needs (Butler et al., 2018).

The negative outcomes of loneliness can be reduced or mitigated relationally. Strong relationships reduce loneliness (Bucher et al., 2019; Frye-Cox & Hesse, 2013; Soh et al., 2014; Uecker, 2012). These relationships may be familial (Davies & Davis, 2013), a friend (Magrath & Scoats, 2019), or romantic (Stack et al., 2004). However, some studies show that friend relationships can have a greater negative direct effect on loneliness in children (Chipuer, 2001) and young adults (Magrath & Scoats, 2019). Floyd (2006) sought to define a behavioral process termed affection exchange that relationships must meet relational needs. Affection exchange is distinct from loneliness (Floyd & Hesse, 2017) but positively associated (Hesse & Floyd, 2019). When an individual receives affection from another, loneliness and pornography use have been shown to be reduced (Hesse & Floyd, 2019). However, this affection is an emotion distinct from affectionate behavior (Floyd, 2006).
Religious Involvement

Religion and religious involvement provide relational avenues for reducing loneliness and the need for pornography use in many individuals (Krause & Ironson, 2019; Rosmarin et al., 2016). For this discussion, religious involvement is considered to be a distinct concept from religiosity. Religiosity has both internal and external factors (Pargament, 1999). Religious involvement is a subset of religiosity that focuses on the more external behaviors of a religious individual (George et al., 2002). These external behaviors can be in the form of church attendance (Ai et al., 2013), prayer (Wright & Young, 2017), giving (Krause, 2009), and other regular religious, social interactions (Koenig, Berk, et al., 2014). As many as 68% of people globally say religion is important in their daily lives (Diener et al., 2011; VanderWeele, 2017).

Broadly speaking, religious involvement has been extensively studied and shown to be associated with numerous positive outcomes on mental health (Ahrens et al., 2010; Hagen et al., 2018; Koenig, 2012; Perry, 2017a; Reinert et al., 2016). In a meta-analysis of over 3,000 studies focusing on religious aspects, Koenig (2012) found positive associations between religious involvement and well-being/happiness, optimism, self-esteem, coping skills, and hope. Conversely, religious activities reduced depression, anxiety, substance abuse, marital instability, and numerous physical health problems (Koenig, 2012). Even across varied cultures and religions, positive outcomes in well-being are similarly seen (Tay et al., 2014). Positive outcomes are also seen in the individual cognitively, behaviorally, and relationally.

Cognitively, religious involvement has been shown to have a positive effect on an individual’s perceptions. For example, individuals with higher religious involvement tend to view life as having a deeper meaning (Dilmaghani, 2018; Krause & Hayward, 2012). Krause and Hayward (2012) further described the advantages of this type of thinking, which allows the
individual to better offer support to others. The ability to cope with distress was also a result of religious involvement (Pargament, 2001; Rosmarin et al., 2016). The findings on the effect of religious involvement on one’s perceptions and thoughts may provide a better understanding of the numerous studies that show that religious involvement benefits many aspects of an individual’s health (Gillum & Holt, 2010; Hill et al., 2016; Kaliampos & Roussi, 2017; McCullough et al., 2000, 2009; Morton et al., 2017; Stavrova, 2015; VanderWeele et al., 2017). McCullough et al. (2000) conducted a meta-analysis from 42 different samples and found that religious involvement was significantly associated with lower mortality. While research exists on confounding factors to these claims, such as age, demographics, and health covariates (VanderWeele et al., 2017), the benefits of religious involvement for longevity cannot be ignored.

Many positive behavioral outcomes related to religious involvement are interrelated with the religious practices and tenets that often accompany religious involvement. Forgiveness is a well-studied religious pillar that has been shown to have many positive outcomes, such as improved well-being (Kent et al., 2018), physical health (Kim et al., 2020), and psychological outcomes (Akhtar et al., 2018). Other behavioral outcomes such as volunteering, donating money, and helping a stranger were also found to be positively associated with religious involvement in an evaluation of the responses to a Gallup World Poll (N = 450,000; Tay et al., 2014). Additionally, religious involvement can help reduce the likelihood of substance abuse (Koenig, 2012; Weaver et al., 2005). Specifically, religious involvement was shown to have a significant prohibitive influence against ever beginning substance use in a study of adolescents (Weaver et al., 2005). Aggression and violence are other behavioral aspects negatively associated with religious involvement (Wright & Young, 2017). One study of over 600 inmates
found that religious involvement and associated behaviors significantly reduced aggression and violent behavior across age groups (Benda & Toombs, 2000).

Involvement in religious activities is inherently social (Koenig, 2012; Tay et al., 2014). Thus, the relational effects of religious involvement on relational aspects of the individual have also been found to be positive (Pargament, 2002; Pargament et al., 1998; Smith, 2003). Religious involvement has been shown to be associated with increased social support (Krause & Ironson, 2019), a better ability to cope with stress by turning to others (Rosmarin et al., 2016), increased marital satisfaction (Kelley et al., 2019), and a better concept of God (Krause et al., 2015).

Krause and Ironson (2019) also described a causal chain, stating that those who are religiously involved had stronger social support. These social supports positively developed a concept of God as benevolent, which increased hope and life satisfaction for the religious individual (Krause & Ironson, 2019).

It is within the relational benefits of religious involvement that deep individual needs are met. Sedikides and Gebauer (2013) connected aspects of religious involvement to the fulfillment of the needs for self-esteem, control, uncertainty reduction, and meaning. While on the surface, the motivation for religious involvement may be simple personal gain, benefits continue as individuals also use religious activities for social support, service, and validation (Abdel-Khalek et al., 2019). One study found that cross-culturally, the social self-esteem of believers was higher than nonbelievers in countries that place high importance on religious involvement (Gebauer et al., 2012). Conversely, social self-esteem was not distinguishable between believers and nonbelievers in countries that place low importance on religious involvement.

Beyond the intrapersonal relational factors, religious involvement has deep interpersonal relational benefits based on the inherently social nature of most world religions (Tay et al.,...
Simmel (1955) seminally posited that religion is first a relationship between human beings. Many tenets of religions center on behavior that pushes followers toward relationships with others (Krause et al., 2018). Krause et al. (2018) further asserted that the foundation of religion is in the relationships formed among people who share a common faith tradition. As followers engage in behaviors such as loving other people, helping those who are in need, and forgiving people for the transgressions they have committed, relational and social benefits are deepened (Cohen & Johnson, 2017; Lundberg, 2010).

Yet another interpersonal aspect of religious involvement is the concept of God. Building from attachment theory, Kirkpatrick (1998) proposed that the relationship with God is similar to other relationships to those that are religious. Others have also proposed this relational attachment to a nonphysical Being as significant in the study of religious individuals (Bartholomew & Horowitz, 1991). Apart from attachment theory, Rizzuto (1979) formed the theory of God image and God concept. In this theoretical framework, God image is seen as the psychological construct of God based on whom the individual imagines God to be (experiential). On the other hand, God concept is the more cognitive (rational), meta-dictionary definition of God for the individual (Rizzuto, 1979). However defined, there is a clear relational aspect of God for the religious individual (Beck, 2006; Colpitts & Yarhouse, 2019; Davis et al., 2013; Lawrence, 1997). Yet this perceived relationship is dependent nearly entirely on the intrapersonal views of the individual (Exline et al., 2015). A religious individual can view God as cruel and distant (Exline et al., 2015), become angry toward God (Exline et al., 2012), and experience fear and guilt if they believe that God disapproves of them (Abramowitz et al., 2002). Thus, without God's reciprocal response, an individual’s relationship with God remains dependent on the experiences with religious involvement and what is doctrinally taught (Zahl &
Religious Involvement and Loneliness

Many of the positive effects of religious involvement can also buffer against loneliness (Pfund & Miller-Perrin, 2019; Rokach et al., 2012). Kirkpatrick et al. (1999) began to show that religious involvement, such as belief in a relationship with God and available interpersonal social support, could reduce loneliness. Interestingly, the results from this study on Jewish individuals showed the direct effect of religious involvement on lower levels of loneliness in women, but not in men (Kirkpatrick et al., 1999). Despite some connection between religious involvement and loneliness, only a few studies seek to describe this phenomenon, with most of the focus being on aging adults (Kirkpatrick et al., 1999; Krause, 2016; Rote et al., 2013).

However, there appears to be a missing relationship within the interaction of religious involvement and loneliness in the literature on loneliness. Loneliness, as defined by Weiss (1973), is distinctly divided into social and emotional aspects. DiTommaso and Spinner (1997) further explained this distinction by finding that reduction in social loneliness for university students only occurred in conjunction with a friend or friends' closeness. They also found that closer friends were more relevant to reducing loneliness than the number of more casual acquaintances (DiTommaso & Spinner, 1997). Thus, the authors asserted that both aspects of loneliness (social and emotional) shared a “common core,” which could be the element of intimacy. This missing common core was found again by Riesman et al. (1950), who were the first to hint at the phenomenon of an individual feeling lonelier in a crowd. The seminal book The Lonely Crowd described this phenomenon by finding that the upcoming generation of that time was “other-directed” and had a constant need for positive evaluation from peers (Riesman et al., 1950). Costa et al. (2019) investigated these same concepts and applied them to today’s
culture, specifically the online world of the internet and social media. Results showed characteristics similar to those described in *The Lonely Crowd* in today’s youth, suggesting that even in large groups, loneliness can be present and strong (Costa et al., 2019). Therefore, even though religious involvement provides an opportunity for social support and a reduction in loneliness, loneliness is still present among religious individuals (Cacioppo & Patrick, 2008; Turan & Cekic, 2018).

**Religious Involvement and Pornography Use**

Within most religious fundamental sects, pornography use is a behavior that goes against doctrinal teaching and is condemned (Borgogna et al., 2018; Lykke & Cohen, 2015; MacInnis & Hodson, 2016). This leads some to advocate abstinence from most sexual practices outside of marriage and even censorship of pornography use (Thomas, 2013; Thomas et al., 2017). However, despite these teachings, many religious individuals continue to use pornography (Perry, 2019a). About half of Americans ages 18–30 who profess to be “practicing Christians” actively seek out pornography at some point in a given year (Barna Group & McDowell, 2016). Additionally, one in three practicing Christians ages 25–30 actively seeks out pornography at least monthly (Barna Group & McDowell, 2016). However, compared to the general population, religious individuals use pornography less (Grubbs, Exline et al., 2015; Perry, 2017a; Rasmussen & Bierman, 2017; Wright, 2013). By regularly engaging in behavior that they believe to be morally wrong, religious individuals who use pornography experience moral incongruence (Grubbs & Perry, 2019; Perry, 2018).

Religion for the individual, while lowering pornography use, also affects the perception of use. This phenomenon has been described in the literature as moral incongruence (Grubbs & Perry, 2019), perceived addiction (Wilt et al., 2016), self-perceived problematic pornography use
(Sniewski & Farvid, 2019a), and problematic pornography use (Gola et al., 2017). Within this perception of use, religious individuals can begin to think of their use of pornography as being addictive and thus problematic (Grubbs, Grant, & Engleman, 2018; Grubbs, Kraus, & Perry, 2019). This concept was originally presented by Grubbs, Volk et al. (2015) in their development of a measure for perceived addiction. Narrowing the focus of their research, they argued there are three factors of perceived addiction to pornography: compulsivity, access efforts, and emotional distress. Thus, for the religious individual, higher rates of moral disapproval increase the levels of perceived addiction (Bradley et al., 2016; Wilt et al., 2016).

Problems from perceived addiction for the religious individual have been described as including depression (Perry, 2018), anxiety (Grubbs, Volk et al., 2015), low self-esteem (Wilt et al., 2016), low sexual satisfaction (Perry & Whitehead, 2019), relational distress (Perry, 2016), and shame (Volk et al., 2019). However, despite these negative outcomes, Grubbs, Wilt et al. (2018) interestingly found that perceived addiction was not a predictor of pornography use over time but rather a predictor concurrently. Implications from this study of university students suggest efforts to alleviate the negative effects of perceived addiction should not focus on pornography use but the negative effects, such as perceived disruption and consequences, moral incongruence, or generalized distress (Grubbs, Wilt et al., 2018).

One of the other factors at play for the religious individual who uses pornography is sexual shame (Gilliland et al., 2011; Sniewski & Farvid, 2019b; Volk et al., 2019). Perry (2019a) used the term sexual exceptionalism to describe the Christian view that sexual “sins” such as pornography use are somehow worse than other sins and exceptionally shameful. Thus, by using pornography, the religious individual fails to meet their moral standards, which contributes to moral incongruence and perceived addiction (Perry, 2019a). Additionally, Volk et al. (2016)
suggested that sexual shame is the outcome of the perceived compulsivity of pornography use. Chisholm and Gall (2015) further explained this interaction as a “double spiral” of pornography addiction (p. 263). Within this cycle, feelings of shame lead to an increased risk of hypersexual and addictive behaviors (Flanagan, 2013). The individual then would encounter pornography and begin using it to meet sexual desires or needs that are perceived to be shameful but not able to be fulfilled currently (Cooper et al., 2004). Pornography use then increases feelings of shame and self-hostility due to the effect of moral incongruence and perceived addiction (Perry & Whitehead, 2019). The spiral then continues as the individual seeks to avoid shame and keeps the use hidden from others (Chisholm & Gall, 2015). Sniewski and Farvid (2019b) found in their qualitative study of heterosexual male pornography users that the men interviewed sought to keep their use hidden for fear of the guilt and shame accompanying revelation. All but three of the 15 men interviewed had never disclosed their pornography use to anyone (Sniewski & Farvid, 2019b).

Research clearly shows the negative direct effect religious involvement has on the outcome of pornography use (Grubbs, Grant, et al., 2018; Hagen et al., 2018; MacInnis & Hodson, 2016; Perry, 2017a; Smith, 2003). However, when pornography use is still present for the religious individual, moral incongruence and perceived addiction play a role in the shame cycle (Perry & Whitehead, 2019; Sniewski & Farvid, 2019b). This shame cycle, which can disrupt the negative effect religious involvement has on pornography use (Grubbs, Exline et al., 2015), can also be seen in other relationships. The negative relational effect of shame accompanying pornography use is seen in marriage (Doran & Price, 2014), parent-child relationships (Perry & Snawder, 2017), and social connections (Efrati & Amichai-Hamburger, 2019). Thus, research has suggested the need for interventions to break this cycle and reconnect
the many positive outcomes of religious involvement (Bradley et al., 2016; Sniewski & Farvid, 2019b; Volk et al., 2016).

Intimacy

Intimacy’s etymology can be traced to the Latin words *intimus* (innermost) and *intimare* (to make the innermost known; Reis & Shaver, 1988). The concept of intimacy in the literature is often used interchangeably with closeness (Birtchnell, 1997; Miller & Lefcourt, 1982; Popovic, 2011a). Intimacy’s meaning has also been confused with the definition of a sexual encounter or experience (Barker et al., 2018; Kreuder et al., 2017; Parks & Floyd, 1996; Schaefer & Olson, 1981). Further, much of the research on intimacy centers on the marital relationship (Ebrahimi et al., 2019; Holland et al., 2016; Rohmah et al., 2017; Yan et al., 2020). Parks and Floyd (1996) surveyed a group of college students (*N* = 270) and found varied perceived meanings of intimacy. To most, intimacy implied a romantic or sexual dimension and was considered a more intense form of a close relationship (Parks & Floyd, 1996). Interestingly, there were more varied meanings of intimacy among men than women (Parks & Floyd, 1996). Research specifically on intimacy is difficult to track, partially due to the confusion with other terms such as closeness (Bartholomew, 1990), affection (Hesse & Floyd, 2019), and responsiveness (Reis & Gable, 2015). Still, others have argued that the concept of intimacy is too difficult to define due to confounding perceptions across genders (Ridley, 1993) and cultures (Popovic, 2005).

For the purposes of this study, the definition and process of intimacy outlined by Reis and Shaver (1988) will be used. Inherent to this definition and subsequent model of intimacy is the behavioral aspect of intimacy (Cordova & Scott, 2001; Reis & Shaver, 1988). Reis and Shaver (1988) defined intimacy as “an interpersonal process that involves the communication of personal feelings and information to another person who responds warmly and sympathetically”
The subsequent intimacy process model details how behavior involves disclosure from one individual (Person A), followed by a supportive and empathetic response from another (Person B). It is due to the response (responsiveness; Reis & Gable, 2015) from Person B that Person A feels understood, validated, and cared for (Reis & Shaver, 1988). Cordova and Scott (2001) added to the behavioral argument by describing the converse effects of such an interaction. If Person B's response is negative or condemning, intimacy is eroded, causing potential damage to both individuals. This definition is not tied to relationship status or sexual experience, allowing intimacy to be an attainable aspect of relationships for all individuals (Cordova & Scott, 2001).

Due to the intermingling of terms within the literature, a distinction between intimacy and other similar terms, such as attachment (Bowlby, 1969) and closeness (Birtchnell, 1997), is needed. Reis and Shaver (1988) noted that while intimacy is distinct in its behavioral component for adults, it has a strong relationship with attachment. Within attachment theory, as proposed by Bowlby (1969), the goal for an individual is to form an attachment bond early in life with a primary caregiver for physical and felt security. The quality of attachment is dependent on the history of interactions with the caregiver (Ainsworth, 1989). These interactions (or lack thereof) in early childhood directly affect attachment styles later in life (Hudson & Fraley, 2017). Thus, while being distinct from attachment, intimacy does play a role in attachment development. For example, intimacy has been described as a mediator that reduces psychological distress stemming from individuals' negative attachment styles (Pielage et al., 2005). Further differentiating intimacy from closeness, Birtchnell (1997) defined closeness as the condition of being physically and emotionally involved with other individuals in a way that increases informalities, freedom of communication, and interdependence. Thus, one can feel close with
another without necessarily needing a response from the other (Fraley & Aron, 2004), for selfish gains (Birtchnell, 1997), or even without knowing the other, as seen in parasocial relationships with famous persons (Giles, 2002).

Much of the confusion in the research regarding intimacy can be attributed to the descriptions of the subconstructs of intimacy rather than intimacy as a whole process (Reis, 2017; Reis & Shaver, 1988). Acitelli and Duck (1987) addressed the struggle to describe intimacy due to researchers only describing certain components. Hook et al. (2003) posited that a majority of intimacy studies outlined four major components of an intimate relationship: (a) love and affection, (b) personal validation, (c) trust, and (d) self-disclosure. Self-disclosure is a part of intimacy that has been described as the gateway to the intimacy process (Das & Hodkinson, 2019; Horne & Johnson, 2018; Popovic, 2005). All self-disclosure involves risk (Horne & Johnson, 2018; Popovic, 2005; Reis & Shaver, 1988). However, Reis and Shaver (1988) distinguish between higher-risk disclosure, such as revealing self-relevant facts (descriptive self-disclosure), and lower-risk disclosure, such as sharing personal feelings about life topics. The higher the level of risk of the disclosure, the more effect it will have on intimacy, either positive or negative, depending on the response from the other (Popovic, 2005; Reis, 2017). With the advent of social media, self-disclosure and intimacy in this online format have increased interest for researchers (Hassan et al., 2016; Ma et al., 2016; Orben & Dunbar, 2017; Saling et al., 2019). Though not the focus of this study, individuals are more likely to self-disclose sensitive information offline than online (Saling et al., 2019), suggesting recognition of the importance of the personal interaction not available in social media (Hassan et al., 2016).

Intimacy has numerous positive outcomes for the individual. Loosely defined, intimacy has been shown to have a positive direct effect on relationship satisfaction (Stanton et al., 2017),
happiness, sense of meaning (Popovic, 2005), coping skills (Palmer & Herbert, 2016), self-esteem (Weisskirch, 2018), and social relationships, including those with coworkers (Gibson, 2018). Conversely, intimacy has been shown to have a negative direct effect on stress (Costa et al., 2020), loneliness, depression (Wielinga et al., 2019), and substance use (Okwudili et al., 2020). Cardiologist Dr. Dean Ornish (1998) additionally made some major claims about the benefits of intimacy on physical health. In his book, *Love & Survival: The Scientific Basis for the Healing Power of Intimacy*, Ornish claimed that an individual having at least one confidant or person that cares for them has a significantly reduced chance of death from a variety of diseases (Ornish, 1998). Similarly, in a meta-analysis of emotional support literature, researchers found that an individual is three to five times more likely to prematurely die from diseases such as heart attacks, strokes, and autoimmune and infectious diseases when there is no close emotional support from another (Ornish, 1998; Russek & Schwartz, 1997).

Beyond the interpersonal behavioral process of intimacy, intrapersonal factors contribute to the formation of intimacy within relationships (Laurenceau et al., 2005). While these intrapersonal factors vary nearly as much as the individual (Popovic, 2005; Reis, 2017), major distinctions in the literature are seen in the formation of intimacy along gender lines (Hammarén & Johansson, 2014; Horne & Johnson, 2018; Magrath & Scoats, 2019; Sherman & Thelen, 1996; Veit et al., 2017; Weinstein et al., 2015). Generally, men struggle in their ability to form intimate relationships. Men who adhere to traditional gender roles struggle more to form intimate relationships than women (Ferree, 2010; Horne & Johnson, 2018; Ralph & Roberts, 2020). These traditional gender roles stereotype men as tough, unemotional, and independent, while women are stereotyped as sensitive, expressive, and relationally oriented (Horne & Johnson, 2018). However, this struggle does not negate the need for intimate relationships or their benefits
for men (Nahon & Lander, 2016). Additional intrapersonal factors in intimacy development include upbringing (attachment) and environment (experiences), as described by Popovic (2005).

**Intimacy and Religious Involvement**

Research specifically discussing intimacy and religious involvement is scant. However, the findings from the literature on religious involvement and social support suggest that intimacy may play a role (Ai et al., 2013; Fatima et al., 2018; Krause & Ironson, 2019). As discussed, the social support aspect of religious involvement has been shown to increase the well-being of participants (Cohen & Johnson, 2017; Tay et al., 2014). Attempts have been made to capture which aspects of social support within religious involvement determine the numerous benefits. God image (Krause & Ironson, 2019), gratitude (Krause et al., 2015), helping others (Krause et al., 2018), forgiveness (Akhtar et al., 2017), and shared experiences (Cohen & Johnson, 2017) all are components of religious involvement are components of the social aspect of religious involvement that have been found to provide benefits. However, the differences between religions, subgroups within religions, and the countless personal experiences of the individual make it difficult to accurately determine why religious involvement improves well-being (Cohen & Johnson, 2017).

Despite the challenge, a few studies seem to point to intimacy in religious involvement as perhaps a missing piece. Fatima et al. (2018) focused their study on how self-efficacy interplays with social support to increase well-being among Muslim youths. Results showed that an individual’s perceptions (self-efficacy and perceived social support) mediated the relationship between religious involvement and psychological well-being (Fatima et al., 2018). Thus, how an individual thinks about a relational interaction (perceived social support) and how successful they think they can be in achieving desired outcomes (self-efficacy) are determining factors in
activating benefits (Pamukçu & Meydan, 2010). Additionally, Graf et al. (2020) sought to specifically study intimacy and its impact on intergroup outcomes. Using a sample of university students from different European countries (intergroup), the researchers found that intimacy was able to counteract negative and even ambivalent contact between intergroup members (Graf et al., 2020). While a strong connection was not found, these findings could be applied to the social interactions within religious involvement, showing how intimacy between members may influence perceptions (Fatima et al., 2018) and contact experiences (Graf et al., 2020).

**Intimacy and Loneliness**

Intimacy and loneliness have been linked in several studies (de Jong Gierveld et al., 2016; Eryılmaz & Ercan, 2016; Pittman, 2018; Rokach, 2016; Weisskirch, 2018; Wielinga et al., 2019). However, as discussed, the varying definitions and parts of intimacy make direct connections difficult (Reis & Shaver, 1988). Still, through the lens of the behavioral transaction outlined by Reis and Shaver (1988), intimacy can be argued to reduce feelings and perceptions of loneliness. Weiss (1973) argued that loneliness is counteracted through six types of relational provisions: attachment, social integration, an opportunity for nurturance, reassurance of worth, reliable alliance, and guidance. The mode of delivery for these provisions can be seen in the behavioral transaction of intimacy (Cordova & Scott, 2001; Reis & Shaver, 1988). For example, the provision of reassurance of worth, in which an individual needs a relationship that provides a sense of being valued, can be manifested as authentic only in the feedback loop of assurance from Person B within the intimacy process model (Reis & Shaver, 1988). Interestingly, Weiss (1973) posited that it was unlikely that all these provisions could come from a single relationship to mitigate loneliness. Similarly, as stated earlier, loneliness is not dependent on the number of friends or social structures (Hawkley et al., 2003; Parker & Seal, 1996; Wheeler et al., 1983).
Thus, while loneliness is influenced by relational experiences and interactions (social contact or number of friends), a greater effect is found through the “internal emotional state” (Asher & Paquette, 2003, p. 75) of loneliness in the individual (Heinrich & Gullone, 2006). Intimacy could contribute to the outcomes of the perception of loneliness.

Floyd and Hesse (2017) described in their theory of affection deprivation to loneliness an argument similar to the one being made for this study. Affection deprivation is defined as “a specific deficit in the receipt of affectionate expressions from others” (Floyd & Hesse, 2017, p. 461). The authors further distinguish between affection deprivation and loneliness, saying loneliness is a more perceived experience while affection deprivation is more a deficit in a needed behavioral transaction. Therefore, while a behavioral interaction such as affection deprivation can increase loneliness (Floyd, 2006; Floyd & Hesse, 2017; Hesse & Floyd, 2019), intimacy as a similar behavioral interaction (Reis & Shaver, 1988) could also have an effect on the perceptions of loneliness for the individual.

**Intimacy and Pornography Use**

As best as can be determined, no known studies have specifically investigated intimacy (as defined here) and its effect on pornography use as an outcome. However, research does exist that combines similar variables that can build an argument for a deeper look at the relationship between intimacy and pornography use (Alimoradi et al., 2019; Hesse & Floyd, 2019; Štulhofer et al., 2012; Veit et al., 2017; Weinstein et al., 2015). Most studies focused on intimacy or another similar term such as affection (Hesse & Floyd, 2019) as the outcome variable for pornography use. Veit et al. (2017) used a cross-sectional survey to describe the relationship between sexually explicit media and relationship satisfaction. Interestingly, the authors found no significant relationship between sexually explicit media use and relationship satisfaction.
However, when using emotional intimacy as a mediator, results showed significantly lower relationship satisfaction only among men who reported lower levels of emotional intimacy with their partner (Veit et al., 2017). Another study (Weinstein et al., 2015) indicated that the use of pornography, gender, and use of cybersex significantly predicted difficulties in intimacy in future relationships. For men, difficulties in forming intimate relationships significantly predicted the frequency of cybersex use (Weinstein et al., 2015). Additionally, significant differences emerged with gender, as men were less focused on relational connections.

Hesse and Floyd (2019) appear to have come the closest in describing the potential relationship between intimacy and pornography use. The researchers hypothesized that individuals consume pornography as a coping mechanism to deal with affection deprivation (Hesse & Floyd, 2019). Floyd (2006) defined affection exchange theory, which proposes that individuals meet the inherent need to belong (Baumeister & Leary, 1995) through the exchange of affectionate behavior (communication, touch, kind acts). Thus, as hypothesized, when an individual does not get those needs met (affection deprivation), pornography may be used as a substitute. Results of cross-sectional online survey data of participants ($N = 357$) found affection deprivation and pornography consumption were inversely related to relational satisfaction and closeness while being positively related to loneliness and depression (Hesse & Floyd, 2019). However, the results were not conclusive in specifically addressing pornography use as a substitute for lack of affection. The data analysis was only significant when looking at pornography use as a coping strategy for depression, not toward relationship satisfaction (Hesse & Floyd, 2019). A deeper look into this study shows all participants were in either a dating or marriage relationship. Thus, by all participants having access to a potentially intimate relationship, the need to cope with a lack of affection may be of no consequence. The researchers
noted the potential confound of excluding singles in this study, stating: “A sample of single individuals may be even more promising as a way to see how people compensate for insufficient affection” (Hesse & Floyd, 2019, p. 3902).

**Singles**

Demographics show the increasing prevalence of single individuals in the United States. In the 1960s, the percentage of individuals over 18 who were married was at an all-time high, standing at 72% (Parker & Stepler, 2017). However, in 2016, economist Edward Yardeni was the first to show that single individuals (over the age of 18) were now a greater percentage of the population than married individuals (Yardeni Research, 2016). Breaking down the statistics showed never-married individuals consisted of 30.4% of the population, while other singles (separated, divorced, widowed, and cohabitating) consisted of 19.8% for a total of 50.2% and thus, a majority (Yardeni Research, 2016). According to the 2019 United States census data, over 51% of individuals over 18 are not married, with nearly 30% having never been married (U.S. Census Bureau, 2019). Over the last few decades, a review of the census data shows a steady increase in the “never married” population for nearly 70 years (U.S. Census Bureau, 2019). Delineating for gender, the proportion of never-married men exceeds that of women (Harris et al., 2019). Divorce rates have also been significant factors in the sharp rise in the singles population (Harris et al., 2019; Holt-Lunstad et al., 2017). The divorce rate in the United States hovers around 50% for first-time marriages and 67% for second marriages (Harris et al., 2019).

Trends also show that individuals are delaying marriage and subsequent childbirth to later in life (Kuperberg, 2019; Ng & Wang, 2020). Again, looking at the United States census data, 65% of individuals aged 25–29 and 40% of individuals age 30–35 have never been married (U.S. Census Bureau, 2019). Further, one in four individuals has never been married by age 35 in the
United States (U.S. Census Bureau, 2019). While not the focus of this study, this delay has decreased fertility rates in many countries worldwide. The fertility rates in the United States are nearly below replacement levels, dropping from 3.65 in 1960 to 1.82 in 2016 (Ng & Wang, 2020). Severe drops in countries such as Korea and Taiwan have prompted government intervention to increase birth rates (Ng & Wang, 2020).

While the legal definition of a single person for the purposes of a census is one who is not currently married, there are different relational aspects of being single. DePaulo and Morris (2005) distinguished the legal definition of a single (not married) from the social definition (not seriously coupled). The authors also argued that being single (not married) for an individual does not necessarily imply living alone or feeling alone, the absence of sexual activity with another, or that they are looking for a mate (DePaulo & Morris, 2005). Despite this assertion, social perceptions of singles remain negative, including discrimination within the culture (Adamczyk, 2016; DePaulo & Morris, 2005). *Singlism* is the term coined by DePaulo and Morris (2005) to describe how society has formed negative conceptions toward singles. For example, to highlight the negative language toward singles, a term often used for a single is *unmarried*; however, the term for a married individual is not *unsingle* (DePaulo & Morris, 2005, Fiske, 1998).

Despite the societal challenges and bias against single individuals, being single does not directly imply lower social connections (Adamczyk, 2016; Brumbaugh, 2017; Bucher et al., 2019; DePaulo & Morris, 2005; Harris et al., 2019). Single individuals could have strong family connections (Brumbaugh, 2017), cohabiting romantic partners (DePaulo & Morris, 2005), and even strong peer friendships (Bucher et al., 2019). Bucher et al. (2019) defined the concept of a *mingle*, which is a combination of the words “mixed” and “single.” A mingle conceptualizes the intimate relationship between two individuals for a period of time who are not romantically
involved (Bucher et al., 2019). Individuals with mingle relationships have higher life satisfaction than singles, but not as great as those in committed or married relationships (Bucher et al., 2019). Despite these dynamics, singles are more prone to loneliness and struggle more to maintain close relationships compared to married or coupled individuals (Bucher et al., 2019; DiTommaso & Spinner, 1997; Liu et al., 2020). Thus, singles are at risk for the potential lack of long-term romantic and intimate partnership that marriage brings by definition.

The effect that being single has on pornography use is significant. Singles have been shown to have an increased risk of pornography use (Harper & Hodgins, 2016; Kraus et al., 2016; Leonhardt et al., 2018; Negash et al., 2016; Peter & Valkenburg, 2016; Ševčíková et al., 2013). However, the more socially disconnected a single individual is, the more likely they are to use pornography (Negash et al., 2016; Peter & Valkenburg, 2016). Harper and Hodgins (2016) found that the people who are the most at risk for problematic internet pornography use are single males who were exposed to internet pornography at an early age. Being single is also related to higher rates of seeking treatment for pornography use (Kraus et al., 2016). Some studies have found a specific positive direct relationship between the lack of social support such as weak family ties (Peter & Valkenburg, 2016) or low social support (Leonhardt et al., 2018) and pornography use. Leonhardt et al. (2018) sought to further describe this interaction, positing that singles who perceived their pornography use as problematic considered themselves “damaged goods.” This study on a population of singles (single, dating, engaged, and divorced individuals) found that higher pornography use, perception of pornography addiction, and religiosity were all associated with heightened relationship anxiety surrounding use (Leonhardt et al., 2018). Further discussion on the study findings indicated that relationship anxiety surrounding pornography use was manifested in greater reluctance to seek out dating partners
and greater difficulty disclosing pornography use (Leonhardt et al., 2018). Additionally, tucked away in the author’s suggestions for future research was the assertion that “perception of support should be specifically evaluated as a mediator in future research to potentially explain our findings” (Leonhardt et al., 2018, p. 366). Thus, the type and quality of the relationship a single individual has with another are of significance. Intimacy may be a factor of significance in further explaining these relationships.

Chapter Summary

As described in the summation of the present research, there are strong and robust associations between religious involvement and pornography use, loneliness, and intimacy. For singles, some connections and needs relate to the other variables. Research indicates a strong positive direct relationship between loneliness and pornography use and a negative direct relationship between religious involvement, loneliness, and pornography use. However, no studies have been conducted that look specifically at intimacy as a behavioral process and its relationship to religious involvement, loneliness, and pornography use. The following chapter details the methods used in the present study to describe the relationships between these variables. First, the direct relationship between religious involvement and pornography use is described, followed by the indirect mediating relationship of loneliness to religious involvement and pornography use is described. Next, the moderating role of intimacy on the direct relationship between religious involvement and pornography use is described. Finally, the moderating relationship between intimacy and the indirect connection of religious involvement, loneliness, and pornography use is detailed.
CHAPTER THREE: METHODS

This chapter details the specific research methods and design for this study. The specific research design with details on the conditional process model is reviewed, followed by the research questions and hypotheses. Next, the selection process for participants is detailed in light of the stated purpose of this study, and a description of how participants were gathered through MTurk is provided. The instrumentation and scales used to assess each variable are presented with details on how each specifically measures the targeted variable. Finally, the research procedures and methods of data analysis are explained in detail.

Research Design

This study uses a cross-sectional design and ordinary least squares regression to determine the relationship between the variables of religious involvement, pornography use, loneliness, and intimacy. The model utilized is based on a conditional process model outlined by Hayes (2017). This combination of mediation and moderation is intended to explain and describe the conditional nature of how one variable transmits its effect on another variable (Hayes, 2017). Thus, for this study, the desired outcome is to understand under what condition or how an intimate relationship moderates both the direct relationship between religious involvement and pornography use and the indirect mediated relationship of these two variables through loneliness. Though the focus remains on the moderating effect of an intimate relationship, the other conditional relationships are evaluated as well. Again, the study’s design model is given in Figure 2.
**Figure 2**

*Theoretical Model*

![Diagram showing the relationship between intimacy, loneliness, religious involvement, and pornography use.]

**Research Question and Hypotheses**

**Research Question:** In what way does an intimate relationship moderate the causal sequence of religious involvement and pornography use through loneliness for a sample of singles?

**Hypothesis 1a:** It is hypothesized that religious involvement has a negative direct effect on loneliness.

**Hypothesis 1b:** It is hypothesized that loneliness has a positive direct effect on pornography use.

**Hypothesis 1c:** It is hypothesized that religious involvement has a negative direct effect on pornography use.

**Hypothesis 1d:** It is hypothesized that intimacy has a negative direct effect on loneliness.

**Hypothesis 1e:** It is hypothesized that intimacy has a negative direct effect on pornography use.

**Hypothesis 2:** It is hypothesized that religious involvement has a negative indirect effect...
Hypothesis 3a: It is hypothesized that intimacy attenuates the negative indirect relationship of religious involvement on pornography use through loneliness.

Hypothesis 3b: It is hypothesized that intimacy attenuates the negative direct relationship of religious involvement on pornography use.

Selection of Participants

Participants were gathered through Amazon’s MTurk platform. This tool for recruiting participants was originally a crowdsourcing option for businesses needing human analysis that proved difficult for programs or machines (Strickland & Stoops, 2019). This explains the genesis of the name, which was originally used for a chess-playing machine covertly run by a human (Strickland & Stoops, 2019). MTurk has grown in its application for research in the behavioral sciences mainly based on its strong validity in providing accurate, representative samples of individuals (Casler et al., 2013; Shapiro et al., 2013). Specifically, researchers found the samples taken from MTurk were of greater demographic and geographic diversity than samples obtained using other methods (Landers & Behrend, 2015). Results from MTurk sampling and data collection have also been found to be indistinguishable from in-person surveying (Casler et al., 2013). Still, samples from MTurk have been shown to be younger, more educated, less religious, less likely to be married, and less likely to be fully employed (Huff & Tingley, 2015; Strickland & Stoops, 2019).

The selection of participants began with an initial screening of those recruited through MTurk, who completed an informed consent to acknowledge participation in this study. An initial screening of responses eliminated incomplete surveys, those completed too quickly, and those that contained all the same responses. Inclusion criteria encompass pornography users,
those who believe in God, and singles who identify as not being in a romantic relationship. Age and gender were not screened beyond verifying respondents met the requirement of being 18 years or older. Participants excluded from the study were those who had no pornography use, had no belief in God, were married or in a romantic relationship, or failed to sign the informed consent. To encourage participation, respondents on MTurk received a $1.50 payment upon completion of a valid survey. After completing an initial questionnaire on demographics, participants completed the Belief Into Action Scale (Koenig et al., 2015), Emotional Intimacy Scale (Sinclair & Dowdy, 2005), and UCLA Loneliness Scale (version 3; Russell, 1996) and stated their pornography use in the last month.

**Instrumentation**

**Demographic Information**

Standard demographic information was gathered and included gender, age, ethnicity, relationship status, and religion. When all survey data were gathered, the goal of a high number of participants was not met. Participants ($N = 95$) ranged in age from 21 to 69 years ($M = 33.77$). A full breakdown in participant demographic information can be found in Table 1.
Table 1

Participant Demographics

<table>
<thead>
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<tr>
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<td>2.1</td>
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<tr>
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<td>1.1</td>
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<tr>
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<tr>
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<tr>
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<td>3.2</td>
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<tr>
<td>Other</td>
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</tbody>
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Belief into Action Scale

To assess religious involvement, the Belief Into Action Scale was used for this study (Koenig et al., 2015). Consisting of 10 items, this scale is designed to assess an individual’s religious involvement and commitment to their faith beyond the superficial or simple profession of identification (Koenig et al., 2015). Scores range from 10 to 100 depending on individual responses. Responses to Questions 2 through 9 are totaled based on the response given on variations of a 10-point Likert scale, while Question 1 is given a score of 1 for all answers selected other than 7, which is given a score of 10 (Koenig et al., 2015). Factors assessed within this scale include highest priority in life, involvement in religious community activities (e.g., “How often do you attend religious services?”), the extent of the conscious decision to submit to
faith teachings (e.g., “To what extent have you decided to place your life under God’s direction?”), use of financial or time resources (e.g., “What percentage of your gross annual income do you give to your religious institution or to other religious causes each year?”), and time spent in private religious activities (e.g., “On average, how much time each day do you spend in private prayer or meditation?”; Koenig et al., 2015).

The Belief Into Action Scale was originally applied to female caregivers (Koenig et al., 2015). However, application across other demographics has increased the validity and reliability of this measure (Hafizi et al., 2016; Koenig, Nelson, et al., 2014, Koenig et al., 2015; Wang et al., 2016). While the application is targeted to monotheistic religions (Hafizi et al., 2016; Koenig et al., 2015), assessing religious involvement was successful in use among students in mainland China (Wang et al., 2016). Being a relatively new scale, construct validity has been difficult to assess. However, convergent validity with other scales assessing religiosity, such as the Religious Commitment Inventory-10, was high (Koenig, Nelson, et al., 2014; Koenig et al., 2015).

**Emotional Intimacy Scale**

Intimacy, for this study, is measured through the Emotional Intimacy Scale (Sinclair & Dowdy, 2005). This five-item scale was originally designed and tested with 90 women with rheumatoid arthritis (Sinclair & Dowdy, 2005). Respondents are asked to complete the survey while thinking of their closest family members or friend. With this person in mind, the respondent answers five items using a 5-point Likert scale ranging from “strongly disagree” to “strongly agree” (Sinclair & Dowdy, 2005). Scores are totaled from each of the responses. The items within this scale capture the necessary behavioral interaction of intimacy, as outlined by Reis and Shaver (1988). The action of being able to share personal information is captured (e.g.,
“I can openly share my deepest thoughts and feelings with this person.”). Additionally, the empathetic response from the other is also captured (e.g., “My thoughts and feelings are understood and affirmed by this person.”).

While originally applied to the medical field, the Emotional Intimacy Scale has been applied across many disciplines and demographics (Murray & Hazelwood, 2011; Štulhofer et al., 2014; Traeen et al., 2013). One study specifically used this scale to measure the relationship between sexual desire and sexual satisfaction among heterosexual men living with their partners (Štulhofer et al., 2014). Construct validity was seen to be strong when applied to correlations between the Emotional Intimacy Scale and various measures of stress, personal coping resources, pain coping behavior, psychological well-being, physical well-being, and social support (Sinclair & Dowdy, 2005). The unique features of the Emotional Intimacy Scale are seen in its ability to capture perceived support and examine one specific relationship rather than an aggregate of all social support seen in other scales such as the Personal Assessment of Intimacy in Relationships instrument (Schaefer & Olsen, 1981).

**Pornography Use**

The assessment of pornography use for respondents was based on answers given to several questions regarding use. For this study, use in the last month is the focus of determining the effect religious involvement has in reducing pornography use for individuals (Grubbs & Perry, 2019). Respondents were asked specifically to report the frequency of use of and amount of time spent using pornography within the last month. Total scores were calculated in order to give cross-sectional data on pornography use for each respondent.

**UCLA Loneliness Scale**

Participants’ loneliness for this study was measured through the revised UCLA
Loneliness scale (Russell et al., 1980). Respondents were given a 20-item assessment on which they were to rate each item on a structured Likert scale. Ratings range from the lowest numerical value of “1” for “never” to the highest value of “4” for “often” (Russell et al., 1980). Scores are totaled to give a final score for the assessment overall. A higher score indicates a greater presence of loneliness for that individual.

The original scale, developed to measure loneliness, stemmed from the seminal work of Weiss (1973). Consisting of 20 items, the original UCLA Loneliness scale assessed the loneliness experience of the individual (Russell et al., 1980). This scale has been shown to be highly reliable and valid in its assessment of loneliness (Elphinstone, 2018; Knight et al., 1988; Russell, 1996; Russell et al., 1980). However, some problems arose as this scale was applied to populations other than college students (Russell et al., 1980). The original scale worded the items in a negative or “lonely” direction (e.g., “There is no one I can turn to”), which could elicit systemic bias in responding (Russell, 1996). Additionally, while loneliness is argued to be a unidimensional construct, later versions of the 20-item scale measured two traits: loneliness and shyness (Elphinstone, 2018). Responses to questions regarding shyness (e.g., “How often do you feel shy?”) are argued to measure shyness as a contributor to loneliness but not as a core component. Thus, the revised scale is used for this study to overcome some of the original hurdles while maintaining the assessment validity that has been shown (Russell et al., 1980).

**Research Procedures**

Initial approval for this study was received through the Institutional Review Board. Once given, the participants were recruited through MTurk with compensation of $1.50 for each completed survey through the MTurk platform. Respondents were given an informed consent prior to being provided access to the survey and measures. Once the agreement with the
informed consent was given, access to the measures and survey was granted. The remainder of
the survey consisted of demographic information, questions regarding pornography use, the
Belief Into Action Scale, the Emotional Intimacy Scale, and the UCLA Loneliness Scale. All
information was collected without identifying information, keeping all responses anonymous.
Respondents were informed of the purpose of the data for research and that all responses would
be kept anonymous and secure. Additionally, participants were informed of the voluntary nature
of the study and were allowed to leave the survey at any time. Risks for the participants were
found in the potential shame of disclosing pornography use and the risk of having information
becoming public. However, by keeping all data anonymous, these risks were nullified.

Data Processing and Analysis

Upon completing the initial screening of completed surveys (to remove incomplete
surveys, outliers, surveys with all the same answers selected, and surveys completed too
quickly), data were analyzed through IBM’s SPSS Statistics program. Utilizing Hayes’s (2017)
PROCESS macro, the cross-sectional data were analyzed with current statistical procedures,
Pearson’s correlation coefficients, and regression analysis. Each hypothesis was evaluated on its
relational and conditional effect upon the different variables.

Chapter Summary

This chapter detailed the methods utilized for this present study. A conditional process
model was presented along with the specific research question and hypotheses. The method of
recruiting, screening, and targeting participants was also given, and the measures used to assess
each variable within the model were described. Finally, research procedures and data analysis
were explained to detail the structure of the analysis. The following chapter outlines the data
analysis results with implications for each of the variable relationships and hypotheses.
CHAPTER FOUR: RESULTS

The purpose of this study was threefold. Following a correlation test to determine to what extent and in which direction (positive or negative) each of the variables is correlated to each other, each of the hypotheses was analyzed through a conditional process analysis. First, the direct relationships between religious involvement, loneliness, intimacy, and pornography use were determined. Then, the researcher evaluated the mediating relationship of religious involvement on pornography use through loneliness. This base model extends previous research that has found significance in the relationship between religious involvement, loneliness, and pornography use. However, the distinction of this present study is its exclusive focus on religious singles who are pornography users. Finally, the moderating effect of intimacy on the causal sequence in the mediating model was investigated. By evaluating the moderating effect of intimacy, there can be a greater understanding of how the intimacy of a relationship can transfer its effect to loneliness and pornography use for religious singles.

Correlation Analysis

Before the moderated mediation model was tested, Pearson’s correlations, means, and standard deviations were calculated. This analysis aimed to determine the strength of correlation between the variables presented and whether the direction was positive or negative. In contrast to expectations, only two of the five relationships were found to be significantly correlated. The relationships in the mediation model were not significantly correlated, while the relationships with intimacy were significantly correlated.

It was expected that religious involvement would be negatively associated with loneliness. However, religious involvement was not significantly correlated with loneliness ($r = -0.069, p > .05$). Loneliness was expected to be positively associated with pornography use.
Inconsistent with the proposed model sequence, loneliness was not significantly associated with monthly pornography use ($r = .080, p > .05$). Additionally, religious involvement was expected to be negatively associated with pornography use. However, religious involvement was not significantly correlated with monthly pornography use ($r = -.133, p > .05$). Intimacy was found to be negatively correlated with loneliness ($r = -.401, p < .001$) and pornography use ($r = -.277, p < .05$).

While these findings were mostly in contrast to expectations, it is interesting to note the correlation between intimacy, loneliness, and pornography use. These findings suggest that increased levels of intimacy may be associated with decreased levels of loneliness and pornography use for singles. The following table details the findings from the initial correlation test.

**Table 2**

*Pearson’s r, Means, and Standard Deviations*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Religious Involvement</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Loneliness</td>
<td>-.069</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Monthly Use</td>
<td>-.133</td>
<td>.080</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>(4) Intimacy</td>
<td>.094</td>
<td>-.401**</td>
<td>-.277**</td>
<td>1</td>
</tr>
<tr>
<td>Mean</td>
<td>38.295</td>
<td>5.695</td>
<td>2.96</td>
<td>3.937</td>
</tr>
<tr>
<td>SD</td>
<td>22.647</td>
<td>2.145</td>
<td>1.414</td>
<td>.831</td>
</tr>
</tbody>
</table>

*Correlation is significant at the .05 level (2-tailed). **Correlation is significant at the .01 level (2-tailed).*

**Conditional Process Analysis: Moderated Mediation Model Test**

In order to test the moderated mediation model as presented in this study, Hayes’s (2017) Process Macro (Version 3.5) was used to produce regression coefficients, $p$ values, and confidence intervals for each of the regressions. Results from the analysis are given in Table 2.
Results for the Moderated Mediation Model

<table>
<thead>
<tr>
<th>Source</th>
<th>b</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LL</td>
</tr>
<tr>
<td>Loneliness</td>
<td>.402</td>
<td>.009</td>
<td>-0.322</td>
<td>.748</td>
<td>-0.021</td>
</tr>
<tr>
<td>Religious Involvement (RI)</td>
<td>-0.003</td>
<td>.009</td>
<td>-0.322</td>
<td>.748</td>
<td>-0.021</td>
</tr>
<tr>
<td>Intimacy</td>
<td>-1.050</td>
<td>.283</td>
<td>-3.705</td>
<td>&lt;.001</td>
<td>-1.613</td>
</tr>
<tr>
<td>RI x Intimacy</td>
<td>-0.002</td>
<td>.014</td>
<td>-0.175</td>
<td>.862</td>
<td>-0.029</td>
</tr>
<tr>
<td>Monthly Use</td>
<td>.350</td>
<td>.006</td>
<td>-1.023</td>
<td>.309</td>
<td>-0.019</td>
</tr>
<tr>
<td>Religious Involvement (RI)</td>
<td>-0.006</td>
<td>.006</td>
<td>-1.023</td>
<td>.309</td>
<td>-0.019</td>
</tr>
<tr>
<td>Loneliness</td>
<td>-0.029</td>
<td>.071</td>
<td>-0.413</td>
<td>.681</td>
<td>-0.171</td>
</tr>
<tr>
<td>Intimacy</td>
<td>-0.653</td>
<td>.206</td>
<td>-3.168</td>
<td>&lt;.050</td>
<td>-1.063</td>
</tr>
<tr>
<td>RI x Intimacy</td>
<td>-0.017</td>
<td>.009</td>
<td>-1.828</td>
<td>.071</td>
<td>-0.035</td>
</tr>
</tbody>
</table>

Hypothesis 1: Direct Relationships

Hypothesis 1 encompassed five direct relationships between the variables and the direction was proposed in the respective hypothesis. Results indicate that the first three hypotheses were not supported, while the final two regarding intimacy were supported.

Hypothesis 1a

It was hypothesized that religious involvement has a negative direct effect on loneliness. That is, as individuals increase in religious involvement, their loneliness scores would reduce. Religious involvement was not found to have a significant negative effect on loneliness ($b = -.003, SE = .009, 95\% CI = [-.021, .015]$), and the hypothesis is not supported.

Hypothesis 1b

It was hypothesized that loneliness has a positive direct effect on pornography use. That is, as loneliness increases for an individual, their monthly use would increase as well. Loneliness was not found to have a significant positive effect on pornography use ($b = -.029, SE = .071, 95\% CI [-.171, .112]$), and the hypothesis is not supported.
Hypothesis 1c

It was hypothesized that religious involvement has a negative direct effect on pornography use. That is, as religious involvement increases for a participant, their monthly pornography use would decrease. Religious involvement was not found to have a significant negative direct effect on pornography use ($b = -0.006, SE = 0.006, 95\% CI [-0.019, 0.006])$; thus, the hypothesis is not supported.

Hypothesis 1d

It was hypothesized that intimacy has a negative direct effect on loneliness. That is, as an individual has an intimate relationship, their loneliness scores would reduce. Intimacy was found to be significantly negatively associated with loneliness ($b = -1.050, SE = 0.283, 95\% CI [-1.613, -.487]$), and the hypothesis is supported.

Hypothesis 1e

It was hypothesized that intimacy has a negative direct effect on pornography use. That is, as individuals report having an intimate relationship, their monthly use would decrease. Intimacy was found to be significantly negatively associated with pornography use ($b = -1.050, SE = 0.283, 95\% CI [-1.613, -.487]$), and the hypothesis is supported.

While the relationships within the mediation model alone were not supported, intimacy, on its own, did have a significant negative effect on loneliness (Hypothesis 1d) and pornography use (Hypothesis 1e). That is, findings supported that higher levels of emotional intimacy may be associated with decreased loneliness and frequency of pornography use.

Hypothesis 2: Mediation

The second hypothesis focused on the relationship of religious involvement, loneliness, and pornography use for singles. It was hypothesized that religious involvement has a negative
indirect effect on pornography use through loneliness. Loneliness was hypothesized to mediate the relationship between religious involvement and monthly pornography use. In contrast to what was hypothesized, there were no significant relationships between variables due to a lack of significant relationships found (Hypothesis 1a–1c). These findings indicate that religious involvement is not significantly associated with loneliness or pornography use. Additionally, loneliness is not significantly associated with pornography use. Without these significant relationships, Hypothesis 2 is not supported.

**Hypothesis 3: Moderated Mediation**

The final hypothesis consisted of the full moderated mediation model. It was hypothesized that intimacy moderates the effect of religious involvement on pornography use through loneliness as well as the direct effect of religious involvement on pornography use.

**Hypothesis 3a**

It was hypothesized that intimacy attenuates the negative indirect relationship of religious involvement on pornography use through loneliness. That is, the presence of an intimate relationship for a participant would significantly reduce the effect of the negative relationship between variables. Intimacy was not found to significantly moderate the effect of religious involvement on loneliness ($b = -0.002$, $SE = 0.014$, 95% CI [-0.029, 0.025]), and this hypothesis was not supported.

**Hypothesis 3b**

It was hypothesized that intimacy attenuates the negative direct relationship of religious involvement on pornography use. Intimacy was not found to significantly moderate the effect of religious involvement on pornography use ($b = -0.017$, $SE = 0.009$, 95% CI [-0.035, 0.001]), and this hypothesis was not supported.
The findings show the index of moderated mediation for the present study was not significant ($b = .000, SE = .001, 95\% CI [-.002, .003]$); thus, the proposed moderated mediation model is not supported. The conditional process analysis on the proposed model is shown in **Figure 3**

**Moderated Mediation Model**

![Moderated Mediation Model Diagram](image)

**Summary**

Three main hypotheses were explored within this study, with Hypotheses 1 and 3 being divided by proposed relationship. The variables analyzed were religious involvement, loneliness, monthly pornography use, and intimacy. Relationships were examined for correlations, directly, through a mediation model, and through a moderated mediation model. The findings did not support the causal sequence of the mediation model, as religious involvement was not found to be statistically significantly associated with either loneliness or pornography use. Similarly, loneliness was not found to be statistically significantly associated with pornography use. Further, support was not found for the proposed indirect effect through loneliness. No evidence was found for the moderation of intimacy on either the direct or indirect pathway on
pornography use. However, intimacy did have some significance in this model in both the Pearson correlation analysis and the model test in Hypothesis 1. This suggests that intimacy was significantly associated with decreased loneliness and pornography use for singles.

The following chapter will examine and interpret the results from this chapter. Using the extant literature, the application of the findings from this study will be made. Implications from the study results will be applied in several areas. Finally, limitations and suggestions for further research will be given.
CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The current study sought to understand the relationship that intimacy has with pornography use and loneliness of religious singles. Building upon previous research, significant relationships have been found between religious involvement, loneliness, and pornography use (Butler et al., 2018; Grubbs & Perry, 2019, Perry, 2018; Whitehead & Perry, 2017). However, no study to date had focused these factors on the specific population of singles. Several unique factors pointed to a need to focus on singles specifically. These factors included the young age at which most pornography use begins (Johnston, 2013; Wolak et al., 2007), lack of social connection (Liu et al., 2020), and negative societal perceptions (Leonhardt et al., 2018). Thus, seeing pornography use as a pleasure-seeking behavior for the single individual to reduce negative emotional states such as loneliness allowed the development of the research question and hypotheses.

The research question centered on the potential ability for a close, emotionally intimate relationship to reduce loneliness, which is a possible motivation for continued use in the single individual. The question asked: In what way does an intimate relationship moderate the causal sequence of religious involvements and pornography use through loneliness for a sample of singles? Out of this question, three groupings of hypotheses were presented based on the extant literature with the addition of the moderating relationship of intimacy. The sampling of religious singles was important to focus the study on single individuals who view their pornography use as problematic.

Using Amazon’s MTurk platform, participants were recruited within a larger research grouping. Final participants (N = 95) were all screened to be single (not in a romantic relationship), religious (believed in God), and pornography users (within the last six months).
Additionally, participants were also majority male (57.9%), white (72.6%), and Catholic (37.9%). Analysis of the data was conducted through IBM’s SPSS Statistics program utilizing Hayes’s (2017) PROCESS macro. The cross-sectional data were analyzed with current statistical procedures, Pearson’s correlation coefficients, and regression analysis. Each hypothesis was evaluated on its relational and conditional effect upon the different variables (intimacy, religious involvement, loneliness, and pornography use).

Discussion of Findings

While many of the hypotheses of this study were not supported through the analysis, some implications can be inferred despite some limitations of the study. The two unique factors of this study, which extend the research, are the use of a population of singles and the addition of intimacy into the discussion of pornography use. These two factors are the central focus of the discussion of the findings in that they may explain the discrepancies between the current findings and those found within the literature.

Correlation Analysis

Of the five correlational relationships within this study, only two of them were statistically significant. Only intimacy’s relationship with loneliness and pornography use was statistically significant in the proposed direction. It was suggested that increased levels of intimacy may be associated with decreased levels of loneliness and pornography use. This finding is unique within the literature, as no previous study examined these relationships. However, the correlations that were not supported have been previously connected within the literature. Possible reasons for these findings are discussed in the context of the following direct relationships.
Hypothesis 1: Direct Relationships

Hypothesis 1a

The first direct relationship hypothesis proposed that as religious involvement increased for an individual, their loneliness scores would be reduced. This hypothesis was based on the findings of several studies that show the positive outcomes of religious involvement (Dilmaghani, 2018; Hagen et al., 2018; Koenig, 2012; Rosmarin et al., 2016; Tay et al., 2014). The specific relationship between religious involvement and loneliness has been studied, and results have shown that loneliness can be reduced through increased social support (Pfund & Miller-Perrin, 2019; Rokach et al., 2012). However, much of the focus has been on reducing loneliness for aging adults (Krause, 2016; Rote et al., 2013). Other studies have shown that loneliness is still present among religious individuals (Cacioppo & Patrick, 2008; Turan & Cekic, 2018).

Due to this study’s focus on the population of singles, the findings may suggest that previous positive outcomes for religious involvement may not be present for singles. The results could extend previous research that found single individuals may feel even lonelier or perceive themselves as “damaged goods” (Leonhardt et al., 2018) within religious circles in which being single is against the norm (Costa et al., 2019; Kelley et al., 2019). VanderWeele et al. (2017) echoed the potential confounding and negative relationship between religious involvement and loneliness. Within the discussion section, VanderWeele et al. (2017) suggested that the context and settings are of importance in describing if the relationship is positive. Single mothers, depressed teens, and those with negative congregational interactions are all susceptible to increased loneliness despite high religious involvement (VanderWeele et al., 2017). Since no study has focused on the growing singles population, results from the current study may suggest
that their religious involvement does not have a significant impact on their perception of loneliness.

**Hypothesis 1b**

The second direct relationship hypothesized was that as an individual’s loneliness scores increased, so would their use of pornography. The argument was made that pornography is used as a coping mechanism to reduce the unwanted negative emotion of loneliness. This direct relationship was not found to be statistically significant even though the findings were in the proposed direction. This finding is counter to previous research, which did find significant relationships between loneliness and pornography use (Butler et al., 2018; Efrati & Amichai-Hamburger, 2019; Kim et al., 2009; Yoder et al., 2005). While the statistical power of the current study may be a contributing factor, there could be a marked difference in the relationships when only focusing on singles. For example, while the study conducted by Butler et al. (2018) had a much larger sampling of individuals \( N = 1,247 \), the majority of participants were married (68%). This area of study is ripe for continued research to determine this relationship with a higher number of participants and statistical power.

**Hypothesis 1c**

The third hypothesis on a direct relationship proposed that as religious involvement increases, pornography use would decrease for the single individual. While this hypothesis was not supported statistically, it was based on the negative direct relationship found within the literature (Grubbs, Grant, et al., 2018; Hagen et al., 2018; MacInnis & Hodson, 2016; Perry, 2017a). However, as previously discussed, the shame cycle may be at play in the findings from this study (Grubbs, Exline et al., 2015). Due to sexual sins being perceived as worse than other sins and highly shameful (Perry, 2019a), there could develop a desire to hide a perceived
addiction (Volk et al., 2016) for the individual. Sniewski and Farvid (2019b) found the desire to hide and not disclose pornography use for participants stemmed from a desire to avoid the shame and guilt that can accompany such a disclosure. Thus, due to this study’s focus on religious individuals (those who believe in a God), the desire to avoid shame through disclosure of pornography use could have affected the findings.

**Hypothesis 1d**

The first hypothesized direct relationship supported in the findings was that as intimacy increases, loneliness decreases for the individual. Based on the correlation analysis, this relationship strength is moderate (-.401). This finding is significant as it reflects the results found in the literature (Eryılmaz & Ercan, 2016; Pittman, 2018; Rokach, 2016; Weisskirch, 2018; Wielinga et al., 2019). As stated before, intimacy is defined as a process of self-disclosure to another with a reciprocating empathetic response, as outlined by the intimacy process model (Reis & Shaver, 1988). Therefore, there is potential in this process of intimacy to build the necessary elements to reduce loneliness, such as attachment, nurturance, worth, and guidance, as outlined by Weiss (1973). Conversely, to what was posited by Weiss (1973), there does appear to be an indication that the elements for a reduction in loneliness can be found in one relationship.

Based on the specific items in the Emotional Intimacy Scale (Sinclair & Dowdy, 2005), the findings reflect the perception of intimacy each respondent had while thinking of one specific relationship.

Additionally, the findings are significant in furthering the discussion on the types and quality of relationships that can reduce loneliness. Previous research revealed that loneliness is not dependent on the number of friends or social structures (Hawkley et al., 2003; Parker & Seal, 1996; Wheeler et al., 1983). Individuals can feel lonelier in a crowd or large group of people...
(Costa et al., 2019) than they do alone. Thus, simply being around other people does not appear to reduce loneliness, as the relationship with religious involvement suggests. Rather, it is the close, emotionally intimate relationship with another that appears to be the significant factor in reducing feelings of loneliness for singles. This would be consistent with research on singles showing that not all singles are inherently lonely (Adamczyk, 2016; Brumbaugh, 2017; Bucher et al., 2019). Those who have a strong, emotionally intimate relationship would have the opportunity for their “need to belong” (Pfund & Miller-Perrin, 2019) to be fulfilled and their perception of loneliness to be reduced.

**Hypothesis 1e**

The final, supported direct relationship hypothesis suggested that an increase in intimacy for singles would be associated with a reduction in pornography use. However, based on the correlation analysis, the strength of this relationship was relatively low (-.277). As was posited in previous research and echoed in this current study, pornography can be used as a coping mechanism to deal with negative emotional states (Hesse & Floyd, 2019; Veit et al., 2017; Weinstein et al., 2015). With loneliness being one of these states and having found a significant relationship in the previous hypothesis, findings indicate that developing an emotionally intimate relationship with another can help reduce pornography use as a potential means of coping for the single individual.

The intimate relationship also could have much benefit in helping to break the shame cycle that has been found in pornography users (Grubbs, Exline et al., 2015). The “double spiral” of pornography addiction, as outlined by Chisholm and Gall (2015), has a potential exit through an intimate relationship. By having a relationship in which a potential shameful disclosure is met with empathy, the single pornography user can avoid the spiraling thoughts of shame and self-
hostility which come through moral incongruence and perceived addiction (Perry & Whitehead, 2019). Additionally, as demonstrated in much of the research on perceived addiction, how the individual perceives themselves and their behavior of pornography use is of utmost importance (Grubbs & Perry, 2019; Perry, 2018; Wilt et al., 2016). The empathetic response could be a vital factor in addressing perceived addiction and shame, as it allows the truth and perception of another trusted individual to counter the negative, condemning thoughts that facilitate the shame and negative emotional states that potentially further pornography use.

**Hypothesis 2: Mediation**

The second hypothesis focused on the indirect relationship that religious involvement has on pornography use through loneliness. Specifically, it was hypothesized that religious involvement would have a negative indirect effect on pornography use through loneliness. That is, the individual's level of loneliness would mediate the relationship between religious involvement and pornography use. In contrast to what was hypothesized, there were no significant relationships between variables due to the lack of significant relationships found for Hypotheses 1a–1c. However, there could be several reasons for the lack of support for this hypothesis of mediation.

Due to the lack of statistical support for the direct relationships between religious involvement, loneliness, and pornography use in the first hypotheses, it is not surprising that the mediation relationship was also not supported. This mediation was predicted based on previous research that reported relationships between religious involvement and loneliness (Kirkpatrick et al., 1999; Krause, 2016; Pfund & Miller-Perrin, 2019; Rokach et al., 2012; Rote et al., 2013), and relationships between loneliness and pornography use (Butler et al., 2018; Kim et al., 2009; Yoder et al., 2005). However, as no previous research had yet evaluated the mediating
relationship of loneliness on religious involvement and pornography use, there could be an issue of time-order sequence between the variables.

One of the findings in the research on loneliness and pornography use is their bidirectional relationship. Butler et al. (2018) found those who viewed pornography were more likely to experience loneliness, and those who experience loneliness were more likely to use pornography. This cyclical relationship between loneliness and pornography could disrupt the proposed order of the variable relationships. Thus, the sequential order of an increased perception of loneliness causing an increase in pornography use could be in reverse order. Similarly, the idea that loneliness is influenced by religious involvement could be in reverse order or the opposite of the proposed direction related to singles. As previously stated, singles could perceive their experience with religious involvement as having little connection with their loneliness, as it was found that some individuals could be lonelier in a crowd (Costa et al., 2019) than when they are alone.

Another potential reason for the lack of support for the mediation relationship between variables lies in the utilized measures. The Belief Into Action Scale is a relatively new scale. It has not been used much in evaluating religious involvement related to pornography use and loneliness in previous research (Koenig et al., 2015). The focus of the scale is on the behavior of religious involvement. The choice to use this scale was based on the attempt to avoid only evaluating an individual’s perception of involvement rather than actual behavioral involvement. However, this scale may not have captured the specific aspects of religious involvement that help reduce loneliness or pornography use for single individuals. Singles may feel more isolated and lonelier within their religious involvement due to their status and the perception of others. Thus, selecting a different scale or changing the model variables may have produced different
Hypothesis 3: Moderated Mediation

The final hypothesis focused on the moderating effect that intimacy had on both the indirect path of religious involvement through loneliness to pornography use and the direct path from religious involvement to pornography use. It was hypothesized that an intimate relationship for a single individual would attenuate both the direct and indirect pathways. Significance was not found for either pathway and thus, neither hypothesis was supported. That is, the presence of an intimate relationship did not significantly impact either the direct or indirect relationships. This hypothesis was based on indications in previous research that intimacy may be a significant variable affecting these relationships. Intimacy was closely related to the social support found in religious involvement (Cohen & Johnson, 2017; Tay et al., 2014) and linked to reduced loneliness (Eryılmaz & Ercan, 2016; Pittman, 2018; Rokach, 2016; Weisskirch, 2018). Additionally, while not linked specifically in previous research, intimacy is similar to affection, which has been shown to reduce pornography use (Hesse & Floyd, 2019). Still, no study has been conducted to look exclusively at the population of singles and the unique challenges they face. Thus, the previous relationships may not be applicable in the same way to the population of singles. The lack of significance in the mediation relationships suggests that findings would not support the moderation of a relationship that is not significant.

Building upon the possible factors for lack of significance stated previously, a potential change of the model may have produced different outcomes. There was significance in the direct relationships between intimacy, loneliness, and pornography use, perhaps using intimacy as the X variable and religious involvement as the moderating W variable would produce more statistically significant results. The choice was made to base the direct and mediating
relationships on the relationships supported in previous research. However, finding significance with intimacy as a variable may be an opportunity for future research. This suggestion, along with other considerations, will be discussed further in the following sections.

**Implications**

This current study evaluates the relationships between religious involvement, loneliness, intimacy, and pornography use for the single population. Specifically, this study sought to determine if the use of pornography for singles was motivated by a desire to cope with loneliness and if the presence of an intimate relationship had an effect on the outcome variable of pornography use. While most of the hypotheses were not supported statistically, the correlations and the direct relationships that were supported have implications for society at large, counselors, counselor educators, religious organizations, and future researchers.

Due to the rapid growth of pornography use (Rissel et al., 2017; Short et al., 2012; Wright, 2013) and its numerous negative effects (Borgogna et al., 2018; Kohut et al., 2017; Willoughby et al., 2019), society at large can benefit from further understanding the factors which influence motivations for use. It can be argued that nearly all pornography use begins when an individual is single, with the average age of first exposure to pornography being documented to be around 11 years old (Johnston, 2013; Wolak et al., 2007). Thus, motivations begin and have their basis during a time of singleness for an individual. By finding the effect an intimate relationship has on reducing loneliness and pornography use for the single individual, society can benefit from a potential relational solution to reduce pornography use.

Benefits for counselors may be great by developing a potential new clinical intervention to reduce problematic pornography use specifically for the religious single. Previous interventions have focused on behavior modification, abstinence, accountability, or cognitive
work (Brand et al., 2016; Short et al., 2015). However, factors such as moral incongruence (Grubbs & Perry; 2019), perceived addiction (Wilt et al., 2016), the shame cycle (Volk et al., 2019), and even the single’s lack of a romantic relationship (Liu et al., 2020) make these interventions difficult. Additionally, since a desire for sex cannot be classified as pathological (Kafka, 2010) and sexual activity outside of marriage is condemned in most religious sects, the single individual is left with a potentially long period of time (puberty until marriage) with no sexual outlet. These factors have left clinicians with few resources to help these religious singles reduce their problematic pornography use. The finding that the presence of an intimate relationship can reduce loneliness and pornography use for the single presents a new possible intervention for the counselor. The counselor can incorporate the development of an intimate relationship for their single, religious clients to help potentially reduce loneliness and problematic pornography use.

The implications for counselor educators are similar to those for counselors, as they can take the findings to use for counselor training. First, counselor educators can better understand the ethical and cultural implications that pornography use has on religious singles. For the religious single, pornography use is problematic, as it runs counter to many of their beliefs (Grubbs & Perry, 2019; Perry, 2018). This leaves the single with no healthy outlet for their sexual desires, which can leave them with issues of perceived addiction and thoughts of being “damaged goods” (Leonhardt et al., 2018; Negash et al., 2016; Peter & Valkenburg, 2016). Thus, the counselor educator must be able to articulate the challenges this population faces to teach proper ethics and cultural sensitivity. Additionally, the counselor educator can utilize the topic of problematic pornography use for religious singles to highlight the difficulty in diagnosis and treatment for various populations. It can be a significant learning experience for counselors in
training to wrestle with the challenge in diagnosing pornography use for religious singles, as evidenced by the debate between the organizers of the *DSM-5* (Kafka, 2010). Future counselors can understand the many nuances of diagnosis and treatment for the various clients they may encounter (American Psychiatric Association, 2013; Kafka, 2010; Winters, 2010).

Implications also extend into religious organizations as they work with singles who struggle with their problematic pornography use. Religious organizations such as the evangelical church have previously focused their message regarding pornography use on abstinence and censorship (Bornsheuer et al., 2012; Thomas et al., 2017). However, this approach fails to acknowledge the shame that can accompany this message for religious singles as they struggle with their healthy desire for sex. Through the finding that there is significance in the ability of an intimate relationship to reduce loneliness and pornography use, religious organizations can craft a more hopeful message for singles. Religious organizations are potentially uniquely equipped to foster intimate relationships for singles due to their inherent social connections. The organization can then meet the need to belong (Pfund & Miller-Perrin, 2019) for singles struggling with feelings of loneliness. The shift in focus and messaging to emotional intimacy has great potential for harnessing the benefits of religious involvement. Additionally, for the religious single, this change in messaging can reduce the shame-inducing thoughts of being “damaged goods” (Leonhardt et al., 2018) and help them move to a healthier way of thinking about themselves and their problematic behavior.

Finally, this study has implications for future research because it extends the discussion in two important areas. First, there had not previously been any study that focused on the specific population of religious singles and their problematic pornography use. As stated previously, the lack of support for several of the proposed hypotheses could be due to the unique perspective
single individuals have and the challenges they face. Much of the previous research on pornography use focused on a general population or couples (Guidry et al., 2020; Newstrom & Harris, 2016; Perry & Davis, 2017; Perry & Schleifer, 2018). Thus, there is potential that the previous researchers that did not screen for relationship status could have found different outcomes had they done so. This study sought to heed the call for a focus on singles proposed by Hesse and Floyd (2019). The second extension of research is the inclusion of intimacy into the discussion on the factors that could reduce pornography use. While previous research touched on similar variables such as affection (Floyd & Hesse, 2017) and relationship satisfaction (Veit et al., 2017), no study has included emotional intimacy as a variable to study for its ability to reduce loneliness and pornography use. Through the findings of this current study on the effect intimacy has on loneliness and pornography use, an interest can be fostered to explore more of the impact that intimacy can have in the discussion on pornography use in future research.

**Limitations**

The current study has some limitations which should be addressed, considering the implications mentioned previously. First, the participants were recruited as part of a larger study survey, making the total assessment quite large. Because numerous other scales were included in the participant survey, the length of the survey could have influenced the responses and participants recruited. While the total number of participants for this larger recruitment pool was large, after screening, those who qualified for the current study were low. Second, this study did have low statistical power through the number of participants who met the screening requirements ($N = 95$). After screening for those individuals who were not in a romantic relationship, those who believed in God, and those who had some pornography use, the participants selected for this study were less than 10% of the total participants for the survey.
The low percentage of singles within this larger sampling was unexpected. Due to the lower statistical power, many of the hypothesized relationships may not have been detected the way they would have had there been a larger sampling. Additionally, the data were obtained through voluntary survey participation. Motivations for participation in the study are unknown. Thus, responses could not be screened for intentional or accidental misreporting. Misleading responses are also a major possibility in this study due to the shame that can accompany disclosure of pornography use, especially for the religious individual. Since religious individuals who use pornography can view themselves as “damaged goods” (Leonhardt et al., 2018), there is the possibility that participants misrepresented or did not disclose pornography use. While some of these limitations could have influenced the findings, some directions for future research can be explored.

**Suggestions for Future Research**

There are several suggestions for future research in this area of study. First, there needs to be continued research on the population of singles who use pornography. It needs to be determined if the lack of statistical support for the relationships between religious involvement, loneliness, and pornography use for singles is a result of this study’s limitations or if it speaks to the inherent differences when between singles and a population, including those who are married or are in a romantic relationship. A larger sampling of singles along with a shorter, more targeted survey would potentially increase the statistical power and evaluate these relationships better.

Next, changing the model variables and measures could also produce more descriptive findings. Since there was significance in the direct relationships with intimacy on loneliness and pornography use, perhaps a model that utilizes intimacy as the X variable and religious involvement as the moderating W variable would more accurately describe these relationships.
Included in this change would be using a different measure for religious involvement, such as the Religious Commitment Inventory-10, which is a similar scale but has more longevity and application than the Belief Into Action Scale (Koenig et al., 2015).

Finally, there should be continued research into how emotional intimacy can be applied to mitigate pornography use in other populations and other problematic behaviors. Having a close, emotionally intimate relationship with another person has the potential to break the shame cycle that keeps individuals in bondage to their behaviors and thoughts. This study has explored the potential for intimacy in application to pornography use, but further research should continue to include this variable into the research discussion on pornography use and other problematic behaviors.

**Summary**

This chapter detailed the interpretations of the findings from this study. The purpose of this study was to answer the question of how an intimate relationship moderates the causal sequence of religious involvement and pornography use through loneliness for a sample of singles. While many of the hypothesized direct relationships and the mediating and moderating relationships were not supported, there were findings suggesting that having an intimate relationship for religious singles does help reduce loneliness and pornography use. Each of these relationships were discussed and evaluated considering the current research. Implications for the findings were detailed to show the potential impact on society at large, clinical counseling settings, religious organizations, and future research. Limitations were detailed, which pointed to the opportunity for changes to the current model and opportunities for future research. More research does need to be pursued. The needs and unique aspects of singles as a growing population necessitates more discussion and research. Results suggest that there is significance
and importance in studying intimacy for singles and its effect on pornography use and other problematic behaviors. The development of an intimate relationship for singles may provide a healthy avenue for meeting felt needs and take away the desire for problematic pornography use.
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