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Internet pornography use, loneliness, and adult attachment patterns among asian indian young adults: an explanatory sequential mixed methods design

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INTERNET PORNOGRAPHY USE, LONELINESS, AND ADULT ATTACHMENT

PATTERNS AMONG ASIAN INDIAN YOUNG ADULTS:

AN EXPLANATORY SEQUENTIAL MIXED METHODS DESIGN

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A

DISSERTATION

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Abstract

INTERNET PORNOGRAPHY USE, LONELINESS, AND ADULT ATTACHMENT

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St. Mary's University, 2023

Dissertation Advisor: Carolyn Y. Tubbs, Ph.D.

Internet pornography consumption among Asian Indian Americans, an ethnic minority group, is largely underrepresented in current scholarly literature despite their growing population in the United States. The purpose of this research was threefold: (a) to measure the prevalence of internet pornography use among Asian Indian American young adults and adults; (b) to explore the relationship between internet pornography use, loneliness, and attachment patterns; and (c) to describe the lived experience of problematic porn consumers. Using an explanatory sequential mixed methods design, I conducted this study in two distinct phases: quantitative followed by qualitative. In the quantitative phase, I employed an online survey through *Qualtrics*. The participants ($n = 327$) constituted a nonprobability sample recruited from Indian based Christian churches and Asian Indian associations in the United States. In the qualitative follow-up phase, semistructured in-depth interviews were used to describe the lived experience of participants' ($n = 8$) internet porn consumption to contextualize the initial quantitative results. The results indicated a significant and positive correlation between loneliness and attachment anxiety. The participants with insecure attachment styles (i.e., fearful, preoccupied, and dismissive) tended to

consume pornography and experience loneliness significantly more than those with secure

attachment styles. Using structural equation modeling, the results showed a significant path

between attachment anxiety and pornography when mediated by loneliness. The qualitative

follow-up study put some insight into the relationship between loneliness and pornography.

    Keywords: internet pornography use, loneliness, Asian Indian, attachment, U.S-born,

immigrant.

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Chapter 1

The Problem and the Justification of the Study

History has witnessed the trajectory of pornography in many different forms and radically different media. From the ancient erotic artworks depicting human nudity and sexual activities in paintings, engravings, and sculptures to the real and live sexual intercourse videos on pornographic websites in modern times (Duncan, 2019), pornography continues to be a part of human history. In the 19th century, the introduction of photography led to a significant increase in the production and use of pornography as it introduced two prime venues for sexual imagery—magazine and film (Campbell, 2012). The last decade of the 20th century witnessed a metamorphosis of the pornographic canvas from print materials and movies to internet sites (Stern & Handel, 2001). The dawn of new technologies has unquestionably led pornography to new heights (Dwulit & Rzymski, 2019). Due to the extensive use of the internet, porn consumption and its negative impact on society have been increasing rapidly during the last 3 decades (Braun-Courville & Rojas, 2009; Sinković et al., 2013; Zattoni et al., 2020), especially among adolescents and young adults (Mowlabocus & Wood, 2015; Sabina et al., 2008; Yoder et al., 2005). In short, as the internet grows exponentially, the amount of porn on the internet increases as well.

Statement of the Problem

The internet provides an unparalleled opportunity for individuals to have secret, affordable, and unimpeded access to a wide range of pornographic texts, images, videos, and audio materials (Cooper, 1998). These technical traits of internet pornography and the consequent sense of safety and security have created a vast audience for internet pornography (Hinman, 2013). Internet porn usage statistics underline the high prevalence of pornography use

worldwide (Cooper & Sportolari, 1997; Webroot, n.d.; see also Baumgardner, 2020). The forced lockdown in March 2020 due to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also known as coronavirus disease 2019 (COVID-19), a novel coronavirus, accelerated online porn use in both developed and developing nations (Bridges & Morokoff, 2011; Pornhub, 2020; Regnerus et al., 2016; Rissel et al., 2017). Overall, pornography consumption has increased over the years due to widespread use of the internet (Dwulit & Rzymski, 2019; Kumar et al., 2021; Štulhofer et al., 2010; Zattoni et al., 2020).

In addition to the research on the high prevalence of internet porn consumption, there has also been growing evidence linking internet pornography use to negative well-being (Kohut & Štulhofer, 2018) and unfavorable relationship outcomes (Barak et al., 1999; Mikorski & Szymanski, 2017; Perry, 2017a; Schneider, 2000, 2003; Zillmann & Bryant, 1988a), including depression (Harper & Hodgins, 2016), increased stress and anxiety (Leonhardt et al., 2018; Wordecha et al., 2018), loneliness (Butler et al., 2018, Yoder et al., 2005), insecure attachment (Butler, 2018; Kor et al., 2014), decreased life satisfaction (Willoughby et al., 2018), low self-esteem (Koletić, 2017; Kor et al., 2014), diminished relational satisfaction (Bridges & Morokoff, 2011; Willoughby et al., 2014), and elevated risk-taking patterns (Carroll et al., 2008). Studies on pornography's etiology revealed that one explanation of pornography's association with negative emotions could be pornography use as a negative coping mechanism to escape aforementioned negative emotions or affective states (Birchard, 2015; Daspe et al., 2018; Estévez et al., 2017; Wéry et al., 2018).

One such strong negative emotion that has stood out in literature concerning pornography use is loneliness (Brooks, 1995; Butler, 2018; Efrati & Amichai-Hamburger, 2019; Willoughby et al., 2016; Yoder et al., 2005). Bozoglan et al. (2013) investigated the relationship of

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loneliness, self-esteem, and life satisfaction on internet addiction and found loneliness was the most important variable associated with internet addiction. The association between loneliness and internet pornography use has recently become an important topic of mental health research due to the outbreak of the COVID-19 global pandemic (Alheneidi et al., 2021; Zattoni et al., 2020). Parallel to the pandemic driven upsurge of loneliness among the young population (Banerjee & Rai, 2020), Pornhub (2020) reported massive traffic to adult sites among consumers aged 18–34 during this period, pointing to the probable correlation between internet pornography use and loneliness (Alheneidi et al., 2021).

Bowlby's (1969) attachment theory has been the forerunner of contemporary theories of loneliness (Hawkley, 2018; Mikulincer & Shaver, 2014), and insecure attachment patterns—anxious and avoidant attachment patterns—were precursors to loneliness (Berlin et al., 1995; Wéry et al., 2019). There has also been evidence that the link between attachment difficulties and internet pornography use may be exacerbated in individuals with loneliness (Efrati & Amichai-Hamburger, 2019). Attachment anxiety or "anxiety that results from failure to have one's basic attachment needs fulfilled" (Mikulincer & Shaver, 2007, p. 280), is the root cause of loneliness (Wéry et al., 2019) through the lens of attachment theory. Therefore, the trajectories of pornography use across developmental periods in an individual's life may be partially associated with their relational or attachment trajectories (Willoughby et al., 2018).

Historically, sexual addiction was seen as a disorder of intimacy and attachment (Flores, 2004). Likewise, studies have found addictive sexual behaviors, including internet pornography use, have been directly linked to insecure attachment styles (Efrati, 2018; Faisandier et al., 2012). Taking into consideration the nexus between insecure attachment patterns and loneliness (Borawski et al., 2021; Spence et al., 2020), internet pornography use can be hypothesized as a

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defense mechanism to escape the negative emotions of attachment anxiety and loneliness by transforming them into excitation and pleasure (see also Wéry et al., 2019) or compensating them in fantasy in the virtual world (Birchard, 2011).

Insecure attachment style is a significant variable to examine in counseling-related social science research (Hazan & Shaver, 1987; Shaver & Mikulincer, 2007), as there has been an alarming prevalence of insecure attachment styles in the general population—with estimates ranging from 26.5%–71.4% in various studies (Milyavskaya & Lydon, 2012; Schröder et al., 2019; Wedekind et al. 2013). Therefore, attachment styles (Armstrong & Mellor, 2013; Efrati, 2018; Efrati & Amichai-Hamburger, 2019; Niazof et al., 2019; Weisskirch & Delevi, 2011) and loneliness (Bozoglan et al., 2013; Butler et al., 2018; Efrati & Amichai-Hamburger, 2019; Willoughby et al., 2016; Yoder et al., 2005) are the two potential antecedents or correlates to internet pornography use I examined in this study to more deeply understand the phenomenon of internet pornography use in the developmental context of an individual (Willoughby et al., 2018).

The current literature has established young adults, individuals between 18 and 25 years (Arnett, 2000; Hochberg & Konner, 2020), seek out and view porn more often than any other generation (Kinnaman & Stone, 2016). According to statistics shared by Pornhub (2019)—the most popular porn site—61% of Pornhub visitors were between the ages of 18 and 34. Among young adults, young men consume pornography at an alarming rate compared to young women (Hald, 2006; Lim et al., 2017). Young adulthood is a critical developmental period, a phase of maturation and change (Wood et al., 2018). This developmental stage is the transition between adolescence and full-fledged adulthood with distinctive biological, social, and psychological features (Arnett, 2000, 2010; Hochberg & Konner, 2020). United Nations Educational, Scientific

and Cultural Organization (UNESCO, 2013) has identified youth as a period of vulnerability worldwide.

Several studies on internet pornography use in the United States targeted the impact on young adults, particularly university students (Carrol et al., 2008; Dwulit & Rzymski, 2019; Hald & Malamuth, 2008; Štulhofer et al., 2010). However, these results have not fully represented young adults from all racial/ethnic minority groups in the United States (Sheik, 2006; D. R. Williams, 2018), mainly due to researchers' inappropriate use of recruitment strategies among racial/ethnic minority groups and lack of knowledge of the cultural differences among ethnic minorities (Flores et al., 2021; George et al., 2014). As a result, racial/ethnic minority groups such as African Americans, Hispanic Americans, and Asian Americans have been underrepresented or not uniquely addressed in the studies on internet pornography use.

Although a few studies have been conducted among Hispanic Americans and African Americans (Perry & Schleifer, 2019; Perry & Whitehead, 2019; Rothman & Adhia, 2016) there has been an extreme paucity of research on pornography use among various subethnic minority groups among Asian Americans (e.g., Asian Indians). In 2022, Asian Indians were the second-largest group among Asian Americans next to Chinese Americans. In addition, Asian Indian immigrants alone comprised nearly 6% of the U.S. foreign-born population, making them the second-largest immigrant group in the country after Mexicans (Hanna & Batalova, 2020). The noticeable increase of the Asian Indian population in the United States and the lack of research on internet pornography use among the U.S-born and immigrant Asian Indian American young adults pointed out the need for the current study. It can be assumed internet pornography use is a problem among Asian Indian young adults given the reported high prevalence of insecure

attachment (Hiebler-Ragger et al., 2016) and loneliness (Achterbergh et al., 2020; Creaven et al., 2021) among the general population of young adults.

Among the largest gaps in the research literature has been the lack of studies exploring pornography use as a dynamic behavior rather than a static variable that does not change over time (Willoughby et al., 2018). Quantitative studies, in general, do not address the dynamic nature of internet pornography use except for a few longitudinal studies (Ma & Shek, 2013; Rasmussen & Bierman, 2016). However, qualitative studies have the potential to address a few elements of the dynamic nature of internet pornography use by describing the lived experience of porn consumers (Gesser-Edelsburg & Abed Elhadi Arabia, 2018; Palazzo & Bettman, 2020; Rothman et al., 2015). Therefore, an additional qualitative research design was essential to understand the dynamic nature of internet pornography in its developmental context. This literature gap supported the choice of a mixed methods design.

Research Design

In this study, I used an explanatory mixed methods design to examine the consumption of internet pornography among Asian Indian American young adults. I collected data from young adults aged 18 to 25 years (until their 26th birthday; Society for Adolescent Health and Medicine, 2017) and adults aged 26–35. This study followed a two-phase mixed methods design in which qualitative data would help provide more detail about the initial quantitative results (Creswell, 2013, 2014; Creswell & Plano Clark, 2018; Sheperis et al., 2017). In the first phase, the quantitative component involved a survey method with questions that inquired about the prevalence of internet pornography use among U.S.-born and immigrant Asian Indian American young adults and its relationship with loneliness and adult attachment styles. In the second phase, qualitative in-depth interviews were used phenomenologically to explore and describe the lived

experiences of internet porn use of a few voluntary participants who had already participated in the quantitative phase, which might contextualize the initial quantitative results.

The following research questions guided this study:

1. What is the prevalence of internet pornography consumption among the U.S.-born and the immigrant Asian Indian American young adults and adults?

2. Is there a significant association between internet pornography use, loneliness, and attachment style among the U.S.-born and the immigrant Asian Indian American young adults and adults?

3. How do loneliness and attachment style affect the level of internet pornography use in the U.S.-born and the immigrant Asian Indian American young adults and adults?

4. How do Asian Indian American young adults' and adults' descriptions of their lived experience with internet pornography inform the association between internet pornography use, loneliness, and attachment style?

Justification for the Study

Research findings regarding the prevalence of internet pornography use (Pornhub, 2019; Webroot, n.d.), its significant psychological correlates (Butler et al., 2018; Kor et al., 2014), and its adverse effects on mental health (Camilleri et al., 2021; Mikorski & Szymanski, 2017) among Asian Indian American young adults can provide research-based guidelines for counselors who deliver mental health care services to this specific population. Internet pornography use has been widespread worldwide and has been most common among younger adults (Sinković et al., 2013). However, young adults from racial/ethnic minority groups in the United States, like Asian Indian Americans, have been underrepresented in research (Flores et al., 2021; George et al., 2014). Addressing the issues of an underrepresented group is also a social justice issue that promotes

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the principle of equity (Wagstaff, 1994) and the spirit of multiculturalism (Ratts, 2011). In short, the imperative need of this study was justified by (a) the alarming prevalence rates of internet pornography, (b) the adverse effects of pornography on family and society, (c) exigency of identifying the vulnerable population associated with porn consumption, (d) addressing social justice and multi-cultural issues, (e) the relevance for research and clinical practice, and (f) the need to give voice to the voiceless.

Alarming Prevalence Rates of Internet Pornography Use

The "triple-A engine" of internet pornography (i.e., accessibility, affordability, and anonymity) is the crucial factor that accumulates many cybersex consumers (Cooper & Sportolari, 1997). Porn use statistics tabulated by Webroot cybersecurity showed a high prevalence of pornography use worldwide (Webroot, n.d.; see also Baumgardner, 2020). According to Webroot (n.d.), 28,258 internet users watched pornography every second, and 40 million Americans visited porn sites regularly. The forced lockdown in March 2020 due to COVID-19 accelerated online porn use worldwide. The high prevalence of porn consumption has adverse effects on families, society, and individuals worldwide (George et al., 2019; Perry, 2017a; Perse, 1994).

Adverse Effects of Internet Pornography

Although consensus has been lacking within the scientific community regarding the benign and malignant aspects of internet pornography use (Allen et al., 1995), studies that reflect the adverse consequences of internet pornography use (Butler et al., 2018; Gilliland et al., 2011; Harkness et al., 2015; Kohut & Štulhofer, 2018; Mikorski & Szymanski, 2017; Zillmann & Bryant, 1988a) have outnumbered those that have touted its benefits (Morrison et al., 2004; Poulsen et al., 2013). Internet porn consumption may lead to (a) sexual objectification of the

other (Barak et al., 1999; Mikorski & Szymanski, 2017), (b) viewing of women as sexual objects (Perse, 1994), (c) sexual risk-taking behavior (Harkness et al., 2015), (d) belief in the rape myth (Foubert et al., 2011), (e) trivialization of rape as a criminal offense (Zillmann & Bryant, 1988a), and (f) behavioral aggression (Allen et al., 1995). Pornography can also cause significant damage to families, couples, and children (Bridges et al., 2003; Fagan, 2009; Peter & Valkenburg, 2008; Perry, 2017a; Schneider, 2000, 2003; Zillmann & Bryant, 1988a).

Exigency of Identifying the Vulnerable Population Associated With Porn Consumption

Young adults and adolescents are assumed to be most at risk of adverse consequences of internet pornography consumption (Owens et al., 2012; Shin & Lee, 2019; Sinković et al., 2013; Štulhofer et al., 2012). As their identity is still developing, adolescents and young adults may be more likely to uncritically interpret sexually explicit material and perceive it as a realistic depiction of sexual activity (Peter & Valkenburg, 2006). However, the younger generation has become the top consumers of internet pornography (Mowlabocus & Wood, 2015; Sabina et al., 2008; Yoder et al., 2005). In the United States, nearly 9 of 10 young men and almost one third of young women aged 18–26 reported viewing pornography (Carroll et al., 2008). The 18–34 age category accounted for 61% of all Pornhub visitors in 2019 (Pornhub, 2019). In a study conducted by Sabina et al. (2008), 72.8% of participants had their first exposure to internet pornography before the age of 18.

Relevance for Research and Clinical Practices

The purpose of this dissertation was to explore two significant correlates of internet pornography use—loneliness (Butler et al., 2018; Efrati & Amichai-Hamburger, 2019; Yoder et al., 2005) and adult attachment patterns (Niazof et al., 2019)—through the lens of attachment theory, a contemporary psychoanalytic theory. I hope this dissertation will provide a unique

contribution to the body of literature by examining the functioning of pornography use as a defense mechanism to escape loneliness (Butler, 2018) and compensate for the lack of intimacy in individuals with insecure attachment (Middleton et al., 2006; Ward and Siegert, 2002). To date, no empirical studies have examined the relationship between these three variables among Asian Indian Americans, a racial/ethnic minority group in the United States. As internet pornography use is problematic among the general young population in the United States, I surmise it is also a problem among the younger generation of ethnic/racial minority groups in the United States, specifically Asian Indian American young adults. The findings can help counselors provide more effective interventions or empirically supported treatments (Herbert, 2015) to the problematic porn consumers among the Asian Indians in the United States (Sheperis et al., 2017), thus contributing to the field of social science research and mental health counseling.

Addressing Social Justice and Multicultural Issues

The lack of adequate representation of racial/ethnic minority groups has been an ongoing issue in research (Sheperis et al., 2017). This study addressed this social justice issue by focusing on Asian Indian Americans. Bhatt et al. (1993) observed Asian Indians are among the least studied ethnic groups in the United States (see also Das, 2002), and no study on internet pornography has been done so far among Asian Indians in the United States. This paucity of research has possibly been exacerbated by the reluctance of individuals to participate in studies related to sexual behavior, a topic considered taboo within the Asian Indian community (Math et al., 2014).

The research on Asian Indians is also challenging because of the aggregation of "Asians" as a racial group rather than examining the experience of a specific ethnic population (Srinivasan

& Guillermo, 2000). The lack of minority representation among social science researchers and the deficit of funding for minority research might have exacerbated the deficiency of studies among Asian Indian Americans (Stahl & Hahn, 2006; see also Taffe & Gilpin, 2021). Therefore, it is difficult for mental health counselors to provide empirically supported treatments (Herbert, 2015) for this ethnic minority group. Mental health professionals cannot assume research based on the general U.S. population is cross-culturally applicable. Therefore, from the social justice point of view, it is imperative to address internet pornography issues among Asian Indian Americans.

Giving Voice to the Voiceless

To develop a comprehensive view of the phenomenon of internet pornography in this study, it is imperative to give voice to ethnic minority groups underrepresented in the research literature. Focusing specifically on the subjective experiences of the participants amplified the voice of the underrepresented minority groups (i.e., Asian Indian Americas). This quantitative study explored the prevalence of internet pornography use among the population under study and its relationship with the potential triggers of loneliness and adult attachment styles. The quantitative aspect of this study, however, did not incorporate participants' voices to fully understand the essence of this phenomenon. Quantitative results alone are inadequate to describe and fully explain complex phenomena (Creswell & Plano Clark, 2018) like internet pornography consumption. Hence, there was also a need to use a qualitative approach to understand the phenomenon in more detail, especially in terms of clear voices and participant perspectives. A mixed methods design was appropriate to achieve the goals of this research. Therefore, I used a qualitative phase to explore in greater depth the initial results from the quantitative phase using an explanatory sequential mixed methods design (Creswell & Plano Clark, 2018).

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Theoretical Framework

Bowlby's (1969) and Ainsworth's (1973) attachment theory, combined with the conceptual models of Gagnon and Simon's (1973) sexual script theory and Griffith's (2005) six-phase addiction model, served as the theoretical foundation of this study. Attachment theory has traditionally been used to explain user behavior in online platforms (D'Arienzo et al., 2019; Efrati, 2018; Efrati & Amichai-Hamburger, 2019; Eichenberg et al., 2017), including internet pornography use (Maas et al., 2018).

Incorporating insights from psychoanalytic schools (Babić et al., 2016; Shaver & Mikulincer, 2005), attachment theory can be used to interpret pornography use as a phobic strategy (defense mechanism) that allows users to avoid any real encounter with others due to relationship anxiety. Besides its role in explaining the phenomenon of internet pornography use, attachment theory serves as an effective tool to comprehensively conceptualize two of pornography's correlates used in this study—loneliness (Bartholomew, 1990; Erozkan, 2011; Hazan & Shaver, 1987; Mikulincer & Shaver, 2014) and attachment styles (Ainsworth et al., 1978; Bowlby, 1969, 1973, 1980).

Adult attachment styles (i.e., secure, anxious, avoidant, and dismissive) are directly derived from attachment theory (Bartholomew & Horowitz, 1991), and the aforementioned adult attachment styles are the modification of the three main child attachment patterns proposed by Ainsworth: (a) secure, (b) ambivalent insecure, and (c) avoidant insecure (Ainsworth, 1967; Ainsworth & Bell, 1970; Ainsworth, Bell, et al., 1971; Ainsworth, Blehar, et al., 1978; Ainsworth & Wittig, 1969). Similarly, theories of loneliness have been greatly indebted to Bowlby's (1969) attachment theory (Mikulincer & Shaver, 2014), as loneliness has been understood as a feeling of being disconnected (separation anxiety) from a positive relationship

with attachment figures (Borawski et al., 2021; Mikulincer & Shaver, 2007; see also Nottage et al., 2022; So & Fiori, 2022). Considering the great potential of attachment theory to explain the main variables used in this study, I used attachment theory as the umbrella theory.

To this traditional model of attachment theory, I incorporated insights from the addiction model and sexual script theory to better understand the phenomenon of internet pornography. The addiction model is very much related to attachment theory because the latter is used to explain many problematic and addictive behaviors, including social networking addiction (D'Arienzo et al., 2019; Monacis et al., 2017) and substance use disorder (Borhani, 2013; Schindler, 2019). Flores (2001, 2004) interpreted addiction as an attachment disorder. Thus, the addiction model was used to interpret participants' level of porn consumption on the spectrum of internet pornography use. Although the theoretical lens of attachment theory, combined with the addiction model, was adequate to interpret several behavioral and substance abuse addictions in general, the incorporation of sexual script theory further strengthened the theoretical foundation of this study, as sexual scripts (Gagnon & Simon, 1973) could distinctly explain how attachment distress might lead particularly to sexually related addictive behaviors like internet pornography use (Butler, 2018). Therefore, I integrated insights from sexual script theory to this general model of attachment theory to help readers find the link between insecurity in attachment relationships and internet pornography use. Some studies have paired sexual script theory and the addiction model to understand the bidirectional relationship between pornography use and loneliness (Butler et al., 2018; Thombs & Osborn, 2013).

According to Butler et al. (2018), sexual scripting in internet pornography could affect attachment relationships and lead to addictive behaviors. Bridge (2020) established that attachment theory and sexual script theory together could explain sexually related behaviors.

Likewise, while demonstrating the relationship between pornography use and insecure attachment through the conceptual model of sexual script theory, Butler et al. (2018) noticed the mediation of loneliness. According to Butler et al., pornography's sexual scripts—eroticism, objectification, promiscuity, and misogyny—are antithetical to secure attachment, which is "conceptually linked to loneliness" (p. 134). Pornography viewers may incorporate the obscene actions and images they view into their own sexual scripts (Braithwaite et al., 2015). According to Willoughby et al. (2018), the alterations of sexual scripts can increase the use of pornography.

Previous studies (Willoughby et al., 2016; Yoder et al., 2005) have established a circular association between pornography use and loneliness (i.e., loneliness leads to pornography use, and pornography use intensifies loneliness) and its role in causing relationship distress. The association between pornography use, loneliness, and attachment styles may be explained in various ways through the theoretical lenses used in this study. For example, pornography consumers may experience intense loneliness due to attachment rupture and relationship distress (Willoughby et al., 2016). To overcome the emotional pain caused by loneliness, one might adopt addictive sexual behaviors like internet porn viewing as a coping mechanism. This pathway from loneliness to pornography use can also be neurobiologically explained by the addiction model through the brain's dopaminergic reward system, partially by oxytocin (Fonagy et al., 2008). According to Fonagy et al., the release of oxytocin during porn watching can inhibit the neural systems that causes the generation of negative effect like loneliness. Because of the immediate feel-good effect of pornography (Butler, 2018), it can probably be used as a coping mechanism to escape the distressing feelings of loneliness. Integrating the theoretical models of sexual script theory and addiction model into the central theoretical perspective of this study—

attachment theory—helps readers understand the relationship between internet pornography, attachment patterns, and loneliness from various perspectives.

Limitations of the Study

This study had five notable limitations. First, the lack of generalizability in this study was considered a limitation as it did not collect data by random sampling (Krathwohl, 2009). The likelihood of confounding variables (Creswell, 2014; Krathwohl, 2009) was a second limitation of the study. I did not address how to control several confounding variables that might have directly or indirectly impacted internet pornography use, such as the current pandemic-driven loneliness and religiosity. Third limitation was the social desirability response bias (Arnold & Feldman, 1981) due to the sensitivity of the topic (e.g., pornography use). Fourth, I did not look into the relationship between participants' religious affiliations and their level of porn consumption. Finally, the absence of culturally appropriate assessment tools (Chadda & Deb, 2013; Shen, 2015; Sheperis et al., 2017; Sue et al., 2019) was another limitation of the study.

Definitions of Principal Terms

The following terms were used throughout this dissertation. Definitions are offered here for clarity.

Attachment styles refers to the specific attachment behaviors guided by the internal working models (Bowlby, 1969; Erozkan, 2011). Attachment styles can be broadly classified into secure and insecure attachment styles. The insecure attachment style includes dismissive, preoccupied, and fearful attachment styles. Each attachment style is operationally defined by calculating the combined standardized scores (z-scores) of each style in the Relationship Questionnaire (Bartholomew & Horowitz, 1991) and Relationship Scales Questionnaire (Griffin & Bartholomew, 1994a, b).

Empirically supported treatment is a psychological intervention that is buttressed by quantitative scientific research (Herbert, 2015).

Internet pornography use refers to the use of the internet as the medium to watch pornography (Chen & Jiang, 2020; Cranney et al., 2018). This study defines internet pornography use as a spectrum ranging from less problematic to more problematic levels of internet porn consumption based on the content of internet porn and its consequences. It is operationally defined as a participant's total score on the Problematic Pornography Consumption Scale (Bőthe et al., 2018).

Loneliness is an individual's subjective perception of deficiencies in their social relationships network (Weiss, 1973). Loneliness is operationally defined as the total score an individual gets in the University of California Los Angeles Loneliness Scale, version three (UCLALS3, Russell, 1996).

Immigrant Asian Indian Americans are people born in India who migrated to the United States.

Pornography is any erotic material intended primarily to cause sexual arousal in the user or viewer and has that primary effect. Here, both intention and effect matter.

Syro-Malabar Catholic Church is the second-largest Oriental Catholic Church and a major archiepiscopal church which its headquarters (curia) in Kerala, India. It has 35 dioceses worldwide, including a diocese in the United States, which Pope John Paul II established in 2001 for the Asian Indian immigrants in the United States with its headquarters in Chicago. The area of the Syro-Malabar diocese of Chicago comprises the whole United States.

U.S.-born Asian Indian Americans are people who are Americans by birth with ancestry from India.

Young adulthood is the category of people from 18 to 25 years of age (Petry, 2002).

Chapter 2

Literature Review

Internet pornography use has been steadily increasing for the last 3 decades because of its anonymity, affordability, and accessibility (Cooper, 1998; Cooper & Sportolari, 1997), and it has been accessed primarily by men, particularly young adults (Dwulit & Rzymski, 2019; Mowlabocus & Wood, 2015; Sabina et al., 2008; Yoder et al., 2005). Exposure to vast consumption of internet pornography use invites significant consequences to individuals, families, couples, and children (Braun-Courville & Rojas, 2009; Camilleri et al., 2021; Fagan, 2009; Fisher & Kohut, 2017; Perry, 2017b; Peter & Valkenburg, 2008; Poulsen et al., 2013; Schneider, 2000, 2003; Sinković et al., 2013; Vaillancourt-Morel et al., 2020; Zattoni et al., 2020; Zillmann & Bryant, 1988b), including increased risk for significant physical and mental health problems (Barak et al., 1999; Bridges & Morokoff, 2011; Butler et al., 2018; Carroll et al., 2008; George et al., 2019; Harper & Hodgins, 2016; Kohut & Štulhofer, 2018; Koletić, 2017; Kor et al., 2014; Leonhardt et al., 2018; Mikorski & Szymanski, 2017; Perry, 2017b; Willoughby et al., 2018; Willoughby et al., 2014; Willoughby & Leonhardt, 2020; Wordecha et al., 2018). Concurrent with the exponential growth in the prevalence of internet pornography, there has been a subsequent increase in research focusing on the effects of internet pornography use as well (Poulsen et al., 2013).

To better understand the research questions in this study, I first examine existing literature on various facets and related aspects of internet pornography use, followed by an introduction to the target population in this research—U.S.-born and immigrant Asian Indian young adults and adults in the United States. Next, I focus on the two potential triggers of internet pornography use—loneliness and adult attachment styles—which I have chosen to

examine extensively due to their developmental significance in the life span of an individual. The following section of the literature review centers on three theoretical lenses—attachment theory, addiction model, and sexual script theory—that help explain the mutual relationships among the three principal variables in this study: internet pornography use, loneliness, and attachment patterns. I conclude the literature review by describing how the current study addressed the gap in the research literature.

Internet Pornography Use

The word "pornography" derives from the combination of ancient Greek words *porne* (harlot) and *graphein* (to write; Jenkins, 2021). Therefore, pornography's literal etymological meaning is "writing about harlots" (Maltz & Maltz, 2010). However, apart from a single usage of the compound *pornographoi* (painters of prostitutes) by Athanaeus in the second century CE, the word pornography remained unknown until it was reintroduced by the French author Rétif de la Bretonne for the title of his treatise on prostitution, *Le Pornographe,* in 1769 (Gladfelder, 2013). In 1806, the label *pornographique* was first applied to a written document or art in France when these items were deemed sexually explicit, and the first citation for pornography appeared in English in 1842. However, the term did not become common in English until 1857 (Campbell, 2012). The modern Greek word πορνογραφί α (por-no-grah-o-phia) is a re-borrowing of the French *pornographie* or its adjective *pornographique*. Although researchers agree on the etymology of the term (D'Orlando, 2011), there is no agreement on the conceptual definition of pornography.

Multiple Definitions of Pornography

According to Rea (2001), the definitions of pornography in the current literature include one or more elements of the following six categories: (a) the sale of sex for profit, (b) a form of

bad art, (c) depicting men or women as sexual objects, (d) a form of obscenity, (e) a tool of

oppression, and (f) a material that is intended to produce or has the effect of producing sexual

arousal. In the contemporary world, pornography generally refers to any erotic material produced

to sexually arouse the audience (Ashton et al., 2018), which aligns with the sixth category of the

definitions of pornography. However, Rea's categories were not inclusive, as there could be

definitions of pornography that do not have any of the characteristics picked out by these six

categories. For instance, from a feminist perspective, pornography is a graphic instrument of

man's domination and oppression through the ultimate degradation of sexual servitude (Mann,

2012). Through the lens of critical theory, pornography has been interpreted as a political tool to

exacerbate racial stereotypes about both male and female Black hypersexuality (Anderson et al.,

2018; Bernardi, 2007). From a hedonistic perspective, people watch pornographic material to

increase their well-being (D'Orlando, 2011).

In addition to the previously mentioned sexualized connotations, pornography has taken

an additional, nonsexualized meaning since the early 1950s. It is difficult to define pornography

because various genres of pornography have been used in the literature (Manning, 2006).

Merriam Webster Dictionary (n.d.-a) described pornography as sensational material (such as

violence) to elicit an intense emotional reaction. The phrase "pornography of violence" was used

by Cottee (2019) in his book, *ISIS and the Pornography of Violence,* to depict the brutal and

spectacular violence of the neo-jihadist group, Islamic State or Islamic State in Iraq and al-Sham.

The discussion on the definition of pornography has become more complex as the

perception of what is and is not pornography is culturally relative and changes over time and

across disciplines (McKee et al., 2020). The concept of pornography is also related to an

individual's own experiences, including their cultural, moral, and religious beliefs (Ciclitira,

2002). As a result, there is no unanimously accepted definition of pornography in the literature. According to D'Orlando (2011), the existing literature has been unanimous only in recognizing the difficulty of defining pornography.

Conceptual Definition of Pornography

The definition for pornography I used in this study was a modified version of that offered by Olen and Barry, "erotic material that is intended primarily to cause sexual arousal in the user or viewer [and] does have the primary effect" (as cited in Rea, 2001, p. 133). The principal modification I purposefully incorporated into this definition was the substitution of the conjunction "or" with "and" to underline that both intention *and* effect count, not intention *or* effect that counts. Consequently, statues, images, or pictures of naked people—even some objects depicting human genitalia, sexual arousal, or violence against the subjects—can appear nonpornographically in works of art, documentary films, places of worship, or scientific magazines (Rea, 2001). They belong to *erotica* that deals with pleasure and art of sexuality; instead, they connote a positive emotional relationship (Linton, 1979). The existing literature has not really differentiated pornography from erotica (Campbell, 2012; D'Orlando, 2011). One distinguishing factor between erotica and pornography is that the latter is often used as a dehumanizing tool to treat people, especially women, as things and sex objects. Today, the internet has become the leading agent to accelerate this dehumanizing process through porn consumption (Shor & Seida, 2019).

Internet Pornography Use

The expression "internet pornography use" has been used as a hypernym that encompasses the use of the internet as the medium to engage in diverse gratifying sexual activities (Chen & Jiang, 2020; Chen, Ding, et al., 2018; Chen, Yang, et al., 2018; A. Cooper,

Delmonico, et al., 2004) that include watching pornography, online pornography exchange, engaging in sexual chats, using sex webcams, searching for sexual partners, and engaging in sexual role-playing. All these gratifying sexual activities meet the criteria of the conceptual definition of pornography, as they are intended primarily to cause sexual arousal in the consumer and produce that primary effect (Rea, 2001). As this definition seemed to be very broad, I used a narrow definition of internet pornography use—the act of watching pornography by means of the internet. In addition, studies have also found watching pornography is the most popular gratifying sexual activity on the internet (Camilleri et al., 2021; Carroll et al., 2008; Chen & Jiang, 2020; Cranney et al., 2018; Duffy et al., 2019). However, excessive internet pornography use is still not a disorder in official diagnostic manuals.

Absence of Formal Diagnostic Criteria

Internet pornography addiction was not a formally recognized disorder in the *International Classification of Diseases*, 11th revision (ICD-11; World Health Organization, 2019) or the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5; American Psychiatric Association, 2013). Hence, there was no unique term to represent this problematic sexual behavior. Therefore, I used the broad term *internet pornography use* to address this sexual behavior. Due to the absence of diagnostic criteria in the DSM-5, numerous terms have been used in the existing literature on internet pornography use to describe this phenomenon, such as (a) internet sex addiction (Bostwick & Bucci, 2008; Griffiths, 2001, 2012, 2017; Kaur et al., 2015), (b) cybersex addiction (Agastya et al., 2020; Castro-Calvo et al., 2016; Giordano & Cashwell, 2017; Laier & Brand, 2014; Schneider, 2000; Snagowski et al., 2016), (c) internet pornography addiction (Brand et al., 2016; Fernandez et al., 2017; Love et al., 2015; Zimbardo et al., 2016), (d) cyber pornography use (Fernandez et al., 2017), (e) online sexual

addiction (Ahmad et al., 2015), and (f) problematic internet pornography use (Allen et al., 2017; Antons & Matthias, 2020; Chen, Yang, et al., 2018; Crosby & Twohig, 2016; Fall & Howard, 2015; Harper & Hodgins, 2016).

Although these terms are slightly different, they all have three fundamental components in common: (a) the medium (the internet), (b) the content (sexual behavior), and (c) problematic use (the compulsive behavior; Chen & Jiang, 2020). Internet addiction with its subtypes was proposed for inclusion in the DSM-5. However, the American Psychiatric Association (2013) rejected the proposal for internet addiction to be included in the first release of the DSM-5. Instead, the committee narrowed the scope of the proposed disorder by including only the internet gaming disorder (IGD) in the third section of DSM-5, leaving internet addiction itself unacknowledged and its other subtypes, such as pornography addiction and social networking addiction, explicitly excluded (Love, 2014; Petry et al., 2015). The absence of diagnostic criteria in formal manuals—DSM-5 and ICD-11—makes the classification process of internet pornography use complex.

Classification of Internet Pornography Use

Although the previous literature has distinguished between problematic and nonproblematic use of internet pornography, this binary classification is insufficient because pornographic content and its impact differ in degrees or levels among consumers. In terms of content, provisional discrimination between soft-core and hard-core pornography is required to assess the level of internet pornography use among users (George et al., 2019). Soft-core pornography, according to George et al., contains images of sexually intimate poses that are not focused on genitalia. Hard-core pornography, on the other hand, involves depicting naked

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women or men in which stimulation of the other individuals (e.g., penis-in-vagina penetration, anal penetration, or oral stimulation) is explicit (Westheimer & Lopater, 2005).

In addition to content, the consequences of pornography use are also important in defining whether internet pornography use is problematic or nonproblematic. Internet pornography use can cause sociofunctional and psychological impairment in various degrees among consumers (George et al., 2019). The extent to which one's internet pornography use is negatively impacting significant areas of life (e.g., work and profession, love and sex, and social and family life) should be taken into consideration. As the content of pornography and its impact on consumers differ in degrees, the categorical classification of internet pornography consumption into two discrete groups (e.g., problematic and nonproblematic) is insufficient to accommodate various levels of internet porn use. This insufficiency in categorical classification necessitates a dimensional approach to include multiple levels of internet pornography use among consumers.

The Spectrum of Internet Pornography Use

A dimensional approach leads to a spectrum design of internet pornography use that ranges from less problematic to more problematic levels of porn consumption. The modern understanding of mental health as a spectrum also helps justify a spectrum design of internet porn consumption (Lobo & Agius, 2012). Therefore, I defined internet pornography use in this study as a spectrum ranging from less problematic to more problematic levels of internet porn consumption based on the content of internet porn and its consequences. As per the definition, addiction to internet pornography finds its place in the more problematic level of the spectrum due to its adverse implications for the audience, whereas an occasional watching of internet porn can be accommodated in the less problematic level of this spectrum. As the compulsivity of

viewing porn is a defining factor in differentiating internet pornography use as less problematic, problematic, and more problematic in this spectrum design, it can also be called the internet pornography compulsivity continuum.

Theoretical Biases of Internet Pornography Use

The terms *internet pornography addiction* (Brand et al., 2016; Fernandez et al., 2017; Love et al., 2015; Zimbardo et al., 2016), *compulsive internet porn use* (Wood, 2005, 2011), or *compulsive sexual behavior* (Miner et al., 2009; Schneider, 2003) have often appeared in the literature to denote the problematic levels of internet pornography use. But the use of specific terms like *compulsive* and *addiction* as a suffix or a prefix with internet pornography use has implied a theoretical bias toward two diverse models (Leonhardt et al., 2018; Wéry et al., 2019). The phrase compulsive internet porn consumption has been associated with the theoretical framework of obsessive-compulsive disorder (Kor et al., 2014), whereas the addiction model provided input for the term internet pornography addiction (Kraus, Kreuger, et al., 2018; Kraus, Voon, et al., 2016b; Kühn & Gallinat, 2016;).

Pornography Use as a Sexual Addiction. The excessive use of internet pornography can be interpreted as a type of sexual addiction through the lens of the addiction model (Carnes, 2001; de Alarcón et al., 2019; Grubbs et al., 2015). The activation of brain reward pathways in someone who engages in uncontrolled and maladaptive internet pornography is similar to that of someone suffering from a substance addiction (Hilton & Watts, 2011). Such activity diminishes the user's capacity to control sexual behaviors despite harmful consequences (Kor et al., 2013). Therefore, Wéry et al. (2019) conceptualized dysfunctional use of cybersex (e.g., excessive use of internet pornography) as a "behavioral addiction" (see also Alavi et al., 2012).

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Pornography Use as a Sexual Compulsivity. On the contrary, some researchers have categorized pornography as a sexual compulsivity rather than an addiction because of differences in how the brain responds to pornography compared to substance addictions (Raymond et al., 2003; Wood, 2011). Umehara et al. (2016) found selective serotonin reuptake inhibitors, the most commonly used first-line pharmacological treatment for obsessive-compulsive disorder, also alleviate the symptoms of problematic sexual behavior, including internet pornography use. This finding has been used to argue that internet pornography use has an obsessive-compulsive etiology (Atmaca, 2020; Coleman, 1991; Gola & Potenza, 2016; Raymond et al., 2003). This alternative model conceptualizes excessive consumption of internet porn as an anxiety-driven mechanism rather than driven by sexual desire per se, as the addiction model does (Kor et al., 2014).

Integrating Theoretical Biases. The ongoing debate on whether pornography use is best classified as a compulsion or an addiction has made it difficult to conceptualize and operationalize internet pornography use. As a result, although some definitions have focused on objective behavior (e.g., weekly hours of pornography use; A. Cooper, Putnam, et al., 1999; A. Cooper, Scherer, et al., 1999), others have focused on the subjective experience of the internet porn user (e.g., the perceived addiction of porn use or psychological distress regarding pornography use; Grubbs et al., 2015).

The dimensional approach I used in this study alleviated this tension between theoretical models by incorporating addictive and compulsive aspects of internet pornography use in the conceptual definition. In the spectrum model, addictive porn use stands at the extreme level of the dysfunctional pole of the internet pornography use spectrum, and the compulsive dimension stands next to it, thus accommodating both theoretical models. The recent findings in

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neurobiology have supported the use of an addiction model to explore internet pornography use (Hilton & Watts, 2011; Love et al., 2015; Stark & Klucken, 2017). Therefore, I primarily used the addiction model as a theoretical lens to understand how a porn consumer progresses from lower to higher levels in the spectrum of internet pornography use.

Prevalence of Internet Pornography Use

Internet pornography consumption has become ubiquitous (Dwulit & Rzymski, 2019; Zattoni et al., 2020). The accessibility, affordability, and anonymity of pornography attract many cybersex consumers (Cooper & Sportolari, 1997). According to recent studies, in developed countries such as Australia and the United States, 46%–91.5% of men and 16%–60.2% of women were active porn users (Bridges & Morokoff, 2011; Regnerus et al., 2016; Rissel et al., 2017; Solano et al., 2020). Webroot (n.d.) cybersecurity's porn usage statistics revealed a high prevalence of pornography use worldwide (see also Baumgardner, 2020). According to Webroot (2008), 28,258 internet users watched pornography every second, and approximately 40 million Americans visited porn sites on a regular basis. Every day, 2.5 billion porn-related emails are sent or received, and 68 million (25%) porn-related search queries are generated. Pornhub, the most popular porn website, reported over 39 billion searches and 42 billion visits in 2019, implying 115 million visits and a daily data transfer of 18,073 terabytes (Pornhub, 2019).

The forced lockdown in March 2020 due to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also known as coronavirus disease 2019 (COVID-19), a novel coronavirus, accelerated online porn use all over the world. The statistical information released by Pornhub (2020) shed light on the enormous increase in porn consumption due to the outbreak of COVID-19 and the ensuing quarantines and lockdowns. Worldwide traffic to Pornhub rose 11.6% on March 17, 2020. Pornhub statistics showed a 38.2% increase in France when its

official lockdown period started on March 17, 2020. Italy had a 57% upsurge in traffic to Pornhub on March 12, 2020. Germany had a 6.2% rise in traffic to Pornhub on March 14, 2020. Russia's web traffic to Pornhub registered an increase of 6.6% on March 15, 2020. In Spain and Switzerland, traffic to Pornhub went up 61.3% and 11.5%, respectively, on March 17, 2020. Traffic rose 6.4% in the United States and 7.2% in Canada on March 17, 2020 (Pornhub, 2020). India witnessed a 95% increase in traffic to Pornhub on March 27, 2020 (Kannan, 2020). People tried to access porn sites on mirror domains after telecom operators in India blocked several adult sites. After the outbreak of COVID-19, there was an increase in interest in coronavirus-themed porn in many countries (e.g., China, Italy, Spain, Sweden, France, and the United States; Zattoni et al., 2020). Coronavirus porn consisted primarily of sex with masks, surgical gloves, and hazmat suits (Pornhub, 2019).

It is also worth noting the prevalence of various types of pornography. Revenge porn—the nonconsensual distribution of an intimate image or video motivated by revenge—recently emerged as a new epidemic in the United States (Gabriel, 2020; Rosenberg & Dancig-Rosenberg, 2021). Image-based sexual abuse, although not necessarily motivated by revenge, has been rampant in society, and women were usually victims (DeKeseredy, 2015; Rackley et al., 2021; McLoughlin & O'Brien, 2019). Another emergent form of pornography that has received attention, particularly in Europe, was *hijab pornography*, that is, pornographic content depicting female performers wearing Islamic hijab (Mirzaei et al., 2021). There has been exponential growth in the use and distribution of child pornography on the internet (Knack et al., 2020; see also Morgan & Lambie, 2019; Quayle et al., 2006). This widespread consumption of internet porn in various forms has the potential to have a global impact on societal, familial, and individual lives.

Effect of Internet Pornography Use

Researchers examined the impact of internet pornography use on society, families, couples, and children by assessing the maladaptive emotional, cognitive, and behavioral outcomes caused by porn viewing (Kor et al., 2014). Although scientific consensus on the benign and malignant aspects of internet pornography use has been lacking (Allen et al., 1995), studies that have reflected the negative consequences of internet pornography use outnumbered those that touted its benefits. In the following section, I review the literature on the positive and negative effects of pornography use.

Adverse Effects of Internet Pornography Use

The adverse effects of internet pornography consumption include social consequences, consequences on families and couples, and consequences on children. Excessive internet pornography consumption has a negative impact on the consumer's interpersonal, vocational, and intrapersonal relationships (Sniewski et al., 2018; P. J. Wright et al., 2017). The following are the negative effects of pornography on families, society, and children.

Social Consequences of Internet Porn Use. Consequences of internet porn consumption with social repercussions include (a) sexual objectification of the other (Barak et al., 1999; McTavish, 2020; Mikorski & Szymanski, 2017), (b) viewing of women as sexual objects (Perse, 1994; Peter & Valkenburg, 2009), (c) belief in the rape myth (Foubert et al., 2011), (d) trivialization of rape as a criminal offense (Zillmann & Bryant, 1988a), and (e) sexual risk-taking behavior (Harkness et al., 2015). Pornography use has also been associated with gender inequality, strong approval of conventional gender roles, and greater acceptance of a power imbalance between men and women in sexual relationships (Hald et al., 2013; To et al., 2015; P. J. Wright & Bae, 2015; P. J. Wright & Funk, 2014). The meta-analysis by Allen et al. (1995)

found an association between exposure to pornography and behavioral aggression (see also Richardson, 2018). George et al. (2019) suggested that internet pornography use correlated positively with diminished social integration, delinquent behavior, and depressive symptoms. Kohut and Štulhofer (2018) established that pornography use was negatively associated with mental well-being.

Consequences on Families and Couples. Pornography can cause significant damage to families and couples. Exposure to vast consumption of pornography among couples can result in (a) marital instability (Perry, 2017a; Zillmann & Bryant, 1988a), (b) family conflicts and break up of marriage (Schneider, 2000, 2003), (c) decreased sexual satisfaction (Schneider, 2000), (d) sexual relations without emotional attachment (Zillmann & Bryant, 1988b), (e) acceptance of extramarital sexual intercourse (Carroll et al., 2008; P. J. Wright, 2013a; P. J. Wright, Bae, et al. 2013; P. J. Wright & Randall, 2012), (f) decreased feelings of intimacy with their current partner (Philaretou et al., 2005), (g) marital dissatisfaction (Bridges et al., 2003), (h) partner critical of the body (Albright, 2008), (i) loss of libido in one's partner or sexual boredom (Poulsen et al., 2013; Štulhofer et al., 2010), and (j) acceptance of male dominance and female servitude (Zillmann & Bryant, 1988a). Research has indicated men who used pornography were more likely to request specific pornographic sex acts from their partner to maintain their level of sexual arousal (Sun, Bridges et al., 2016; Sun, Miezan, et al., 2015).

Consequences on Children. Children are deprived of quality time and attention from their parents due to parental addiction to pornography or one parent being preoccupied with the addicted spouse (Schneider, 2000). There is an increased risk of those children becoming consumers of pornography themselves (Fagan, 2009). Students who engage in excessive pornography may exhibit greater academic maladjustment (Ohuakanwa et al., 2012). According

to Peter and Valkenburg (2008), more frequent exposure to sexually explicit internet material was significantly associated with sexual identity uncertainty and a favorable attitude toward uncommitted sexual exploration. Pornography, according to Braithwaite et al. (2015), was associated with potentially risky sexual behavior.

Positive Effects of Internet Pornography Use

Although most of the research has focused on the possible adverse outcomes of pornography use, some researchers have identified potential positive effects associated with internet pornography use, such as building positive sexual self-esteem (Morrison et al., 2004), increased sexual knowledge (Weinberg et al., 2010) and enhancing sexual quality among couples (Daneback et al., 2009; Poulsen et al., 2013). Kohut et al. (2016) reported pornography users held more gender egalitarian attitudes than nonusers. Gouvernet et al. (2017) concluded pornography was not inherently pathogenic. Having discussed the conceptual definition of internet pornography and its various consequences on individuals and society, I next describe how internet pornography use is associated with demographic variables used in this study.

Internet Pornography Use and Demographic Predictors

The existing literature has focused on demographic variables influential in internet pornography use. Researchers have identified many demographic predictors of the consumption of internet pornography, such as religiosity, age, gender, first exposure to pornography, relationship status, culture, and internet use. Each demographic variable in relation to pornography consumption is discussed in the following section.

Pornography Use and Religiosity

Religiosity is a potential alleviating factor of internet pornography use. P. J. Wright (2013b) examined the relationship between pornography consumption and its predictors using

nationally representative data collected from U.S. women between 1973 and 2010 ($n = 18, 225$) and discovered that the less religious women were more likely to consume pornography. Several cross-sectional and longitudinal studies have discovered a negative relationship between pornographic consumption and higher levels of religious attendance among adolescents and young adults (Cranney et al., 2018; Hardy et al., 2013; Leonhardt et al., 2018; Rasmussen & Bierman, 2016). Rasmussen and Bierman (2016) reported a buffering effect of religiosity on pornography consumption. Perry and Hayward (2017) found pornography use was negatively correlated with the frequency of church attendance, perceived importance of religious faith, prayer frequency, and perceived closeness to God and positively correlated with increasing religious doubts.

Pornography Use and Internet Consumption

With unlimited internet access and the extensive use of smartphones, pornography has become extremely common all around the globe (Perry & Longest, 2019). The accessibility, affordability, and anonymity (Cooper, 1998; A. Cooper, Delmonico, et al., 2004) of the internet has accelerated the consumption of internet pornography. The internet has made pornography production and distribution easier; anyone can create, upload, and share pornographic content (Klaassen & Peter, 2015). According to Kleinman (2017), porn sites had more monthly visitors than Netflix, Amazon, and Twitter combined. Around 30% of all data transferred across the internet were porn related. One of the largest free pornographic video-sharing websites, Youporn, streams 6 times more bandwidth than Hulu—a U.S. streaming platform (Kleinman, 2017). Pornhub, a Canadian pornographic video-sharing website and the largest pornography site on the internet, claimed it received 21.2 billion visits and streamed 75GB of data per second in 2015 alone. This is enough porn to fill the storage capacity of approximately 175 million 16GB

iPhones (Dines, 2016; International Business Times, 2016). Currently, it is estimated that 10%–30% of internet bandwidth is devoted to sexually explicit material, with Mind Geek (operator of sites such as Pornhub) ranking among the top three companies (along with Netflix and Google) in terms of internet bandwidth consumption (Castleman, 2016; see also Potenza, 2018).

Pornography Use and Gender

Internet porn consumption among men and women differs in prevalence, motives, and brain functions. Most studies have discovered that men watched pornography more often than women (Stella, 2020). In a study by Carroll et al. (2008), 87% of men and 31% of women reported viewing pornography. In a cross-sectional online survey among young Australians, Lim et al. (2017) found 81% of young men and 28% of young women aged 15–29 watched pornography at least weekly. In a study conducted among Indian adolescents, Chandel and Lakhani (2018) discovered that eroticism was the main motive of internet use for boys and surveillance was the primary motivator for girls. Davis et al. (2018) found significant gendered differences in how young heterosexual Australians aged 15–29 saw and identified behaviors in pornography, such as violence, romance, and sexual pleasure.

Gender differences in internet pornography viewing have a neurological basis as well. The male brain is designed to be more visually responsive to sexual stimuli than the female brain (Chung et al., 2013). By analyzing a billion web searchers, Ogas and Gaddam (2011) discovered that while a single cue might trigger arousal in the male brain, a woman's brain requires multiple cues to become aroused. Another relevant theme is gender inequality in the available pornographic images. In a quantitative content analysis of 400 pornographic videos on the four most popular porn websites (i.e., Pornhub, RedTube, YouPorn, and xHamster), Klaassen and Peter (2015) found pornography objectified women through instrumentality by focusing

primarily on women's sexual body parts. In contrast, men were often depicted as dominant and women as submissive during sexual activities.

Pornography Use and Age

Pornography consumption has increased across all birth generations (Price et al., 2016). In a national longitudinal survey of adolescents and young adults, Rasmussen and Bierman (2016) discovered pornography use increased sharply with age, especially among boys. Using General Social Survey data, Price et al. (2016) revealed 20% more men and 10% more women under 36 years old viewed pornography in the 2010s compared to the 1970s. On the contrary, P. J. Wright (2013a, 2013b) pointed out the percentage of adult U.S. males who consumed pornography increased only slightly over time. P. J. Wright examined the growth in male porn consumption since the early 1970s and concluded that it increased by only 0.3% per year prior to 1986 and 0.1% after 1986. However, the public believes the current generation of young adults is much more likely to consume pornography than previous generations due to its easy accessibility (Shapiro, 2005). This perception of pornography consumption among young adults in the 21st century, according to Shapiro, has led some to refer to the current generation as "Generation XXX [or the] Porn Generation" (p. 1).

Pornography Use and Early Exposure to Porn

Although it is plausible that early exposure to pornography leads to higher consumption later in life, the causal relationship between pornography and early exposure to pornography is uncertain (Cranney et al., 2018). According to Beyens et al. (2015), pubertal timing and sensation seeking predicted exposure to internet pornography in adolescents. A cross-sectional online survey among young Australians suggested the median age of first intentional exposure to pornography was 13 years among men and 16 years among women (Lim et al., 2017). Thus, the

age of first exposure is an important variable to consider in pornography research to explore if the age of first exposure to pornography is causally associated with later life usage of pornography (Cranney et al., 2018).

Pornography Use and Relationship Status

Most studies have not addressed the effect of differences in relationship status on pornography consumption; instead, most researchers have studied a specific relationship status. For example, most studies have examined the relationship between internet pornography use and relationship quality among married couples (Doran & Price, 2014; Muusses et al., 2015; Newstrom & Harris, 2016; Perry, 2017a; Poulsen et al., 2013). Heterosexual couples were the target population of a few other studies (Bridges & Morokoff, 2011; Maas et al., 2018). Randall and Langlais (2019) compared pornography use among virgins and nonvirgins. On the other hand, Carroll et al. (2008) controlled for relationship status (i.e., dating status) in their study of pornography acceptance among emerging adults. Few studies on internet pornography use have examined relationship disparities (Daspe et al., 2018). Exploring the potential influence of various relationship statuses (i.e., single, married, or cohabiting) is therefore critical because people living alone might consume more porn than those in some relationships.

Cultural Differences and Pornography

According to Stadler (2018), "A medical diagram of the naked body in the doctor's office isn't pornography, but in a different space it could be" (p. 171), pointing to the decisive role of the cultural setting in defining pornography. Moreover, culture continues to be an autonomous expression of a society's understanding of and moral judgments about sexual matters (Bradley, 2018). Therefore, to better understand the relationship between culture and internet pornography use, the reciprocal relationship between culture and religion must first be recognized (Beyers,

2017) because religion is a vital segment of culture that promotes the moral standards needed to understand a sociocultural phenomenon. Geertz (1973), an anthropologist, famously described religion as a cultural system composed of myths, rituals, symbols, and beliefs created by humans to give their personal and collective lives a sense of meaning. In a study by Jones et al. (2013), 65% of the public said viewing pornography was morally wrong, and 29% said it was morally acceptable. Among millennials, 45% said viewing pornography was morally acceptable. People of different Christian denominations held different views, with 88% of White Evangelical Protestants, 63% of White mainline Protestants, 67% of White Catholics, and 78% of Hispanic Catholics agreeing that pornography was morally and culturally unacceptable, pointing to the effect of religious views in understanding pornography (Jones et al., 2013). Despite the fact that pornography is banned in some Arab and other Muslim countries (Baishya & Mini, 2020; Natour, 2021), Muslim countries accounted for six of the top eight porn-searching countries (Mango News, 2016). Culture has a role in the perception and prevalence of internet pornography use.

To conclude, the literature review revealed the complex and multifaceted nature of internet pornography use. Most of the literature examined pornography consumption in the general U.S. population (Carroll et al., 2008; Dwulit & Rzymski, 2019; Hald & Malamuth, 2008; Štulhofer et al., 2010). These studies neither adequately represented nor specifically addressed porn consumption among ethnic minority groups in the United States, such as Hispanic Americans, African Americans, and Asian Americans. As each ethnic group is unique because of distinct religious, moral, cultural, social, and political values and traditions (Hamer et al., 2018), porn consumption among each racial and ethnic minority group must be investigated independently to get a clear picture of pornography use among each ethnic group. Although a

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few studies have investigated porn consumption among Hispanic Americans and African

Americans (Perry & Schleifer, 2019; Perry & Whitehead, 2019; Rothman & Adhia, 2016), there

is an extreme paucity of research on pornography use among various subethnic minority groups

among Asian Americans such as Chinese, Asian Indians, and Filipinos. This study focuses on

Asian Indian Americans, the second-largest group among Asian Americans after Chinese

Americans (Hanna & Batalova, 2020). The noticeable increase of the Asian Indian population in

the United States and the lack of research on internet pornography necessitated the current study.

Asian Indian Population in the United States

Asian Indian Americans are U.S.-born or immigrant Americans who trace their ancestry

to India. However, Asian Indians have not been labeled consistently in the academic literature.

North American literature uses the term "Asian Indian," but British and Australian literature

refers to "Indian" to identify this socioculturally distinct racial group (Dogra et al., 2013;

Durvasula & Mylvaganam, 1994; Goodman et al., 2010; Maheshwari & Steel, 2012). The

purpose of the 1980 U.S. Census using the term Asian Indian instead of Indian was to avoid

confusion with Native Americans, also known as American Indians (Das, 2002). Asian Indians

have also been labeled "South Asian Indians" (Daniel et al., 2018; Radhakrishnan et al., 2019),

as India belongs to South Asia or the Indian subcontinent and has a high degree of sociocultural

similarities with other South Asian countries hailing from the subcontinent (e.g., Bangladesh,

Bhutan, Nepal, Pakistan, Sri-Lanka, Afghanistan, and the Maldives; Badrinathan et al., 2021;

Yefremov et al., 2020). Furthermore, Asian Indians were also referred to under the generic name

of "Hindus" at the beginning of Asian Indian immigration history, although the majority were

not Hindus (Das, 2002). Therefore, the ethnic identity formation of an Asian Indian in the United

States had to undergo a trajectory of transformations from "Hindu" to "Asian" to "South Asian"

to "South Asian Indian," and to "Asian Indian" (Durvasula & Mylvaganam, 1994). The

multilingual, multiethnic, and multicultural character (Pattanayak, 2008; Racova, 2020) of Asian

Indians in the United States gives them a unique identity among Asian Americans. In the

following section of the literature review, I briefly describe the uniqueness of Asian Indians

among other Asian groups in the United States and the demographic characteristics of this

population.

The Uniqueness of Asian Indians Among Asians in the United States

The U.S. Census has categorized Asian Indians as a subset of the "Asian" racial category

since 1980, suggesting Asian Indians are officially Asian, that is, inhabitants of Asia or people of

Asian descent (Merriam-Webster, n.d.-a; Schachter, 2014). However, Asian Indians have

historical, cultural, geographical, and political differences from other Asian groups that mark

their uniqueness (Gross, 2008). In 2022, in the United States, Asian Indians were the second-

largest Asian group next to the Chinese and the second-largest immigrant group next to

Mexicans (Hanna & Batalova, 2020; Migration Policy Institute, n.d.). Therefore, it is crucial to

delineate the general demographic characteristics of the Asian population in the United States to

better understand the uniqueness of Asian Indians among Asians on U.S. soil. It is essential to

clarify critical demographic and economic characteristics of Asian Americans, such as

population statistics in general and in various U.S. metropolitan cities, economic status, and

educational level.

Asian American Population Statistics

The U.S. Asian population is diverse; around 23 million Asian Americans trace their

origins to more than 20 countries in East and Southeast Asia and the Indian subcontinent

(Budiman & Ruiz, 2021). According to Budiman and Ruiz, in 2019, Chinese Americans were the

largest Asian-origin group in the United States, with 5.4 million people making up 23% of the Asian population. The second largest Asian-origin group was Asian Indians, with 4.6 million people (20%), followed by Filipinos, with 4.2 million people (18%), Vietnamese (2.2 million), Korean (1.9 million), and Japanese (1.5 million). None of the remaining groups had a population above 60,000. According to a Pew Research survey in 2019, California had the highest Asian population, approximately 6.7 million, followed by New York (1.9 million), Texas (1.6 million), New Jersey (958,000), and Washington (852,000). Most Asian Americans (55%) lived in these five states as of 2019 (Budiman & Ruiz, 2021).

Evidence from various U.S. Census years has indicated that the Asian population in the United States has grown exponentially. In the 1870 census, approximately 63,254 individuals were classified as Asian by U.S. Census Bureau officials (Gibson & Jung, 2005). The total Asian population rose to 980,000 in 1960 (Budiman & Ruiz, 2021). According to Budiman and Ruiz (2021), the post-1965 immigration wave from Asia caused the nation's Asian population to skyrocket to 11.9 million by 2000 and almost double to 23.2 million by 2019—a 95% increase in less than 2 decades. Asians now comprise about 7% of the nation's population (Jin, 2021). According to Budiman and Ruiz, Asian Americans are projected to exceed 46 million by 2060. They are predicted to be the nation's largest immigrant group by the middle of the 21st century, as the Asian population might surpass Hispanics in 2055. By then, Asians will have comprised 36% of all U.S. immigrants, and Hispanics will have made up only 34%, according to 2019 population projections from the Pew Research Center (see also Passel & Cohn, 2008).

Economic Status of Asian Americans

Asian Americans have outperformed the general population in terms of economic well-being. In 2019, when the median annual income of households led by Asian people was $85,800,

it was only $61,800 among all U.S. households (Budiman & Ruiz, 2021). According to the authors, immigrant Asian families earned slightly more than those led by U.S.-born Asians ($88,000 versus $85,000). However, economic welfare varied significantly across various Asian origin groups. For example, the household income of Burmese Americans was significantly lower than that of total Asian Americans ($44,400 versus $85,800; Zhang, 2021). Budiman and Ruiz (2021) also noted only two Asian origin groups had higher median household incomes than other Asian groups—those led by Asian Indian Americans ($119,000) and those led by Filipino Americans ($90,400).

Education Level of Asian Americans

According to Pew Research Center report from 2019 (Budiman & Ruiz, 2021), around 54% of Asians aged 25 and older had a bachelor's degree or more education, compared with 33% of the overall U.S. population in the same age category. However, there were wide disparities among people from various Asian countries. Asian Indians aged 25 and older had the highest level of educational achievement among U.S. Asians, with 75% holding a bachelor's degree or higher in 2019. Bhutanese adults had the lowest percentage of Asian origin adults with a college degree (15%).

Asian Indians in the United States outperform all other Asian groups regarding education and economic well-being. Furthermore, as of 2019, India had the highest number of unauthorized immigrants (525,000) of any Asian country (Budiman & Ruiz, 2021). Having discussed the uniqueness of Asian Indians among Asian Americans, in the next section, I describe current demographic trends among this ethnic group.

Demographic Characteristics of Asian Indians in the United States

Demographics refer to the statistical characteristics of a particular population (Jung & Ejermo, 2014; Merriam-Webster, n.d.-b; see also Cherlin, 2014). Demographic information about Asian Indians in the United States was crucial for determining if the participants chosen for this study were a representative sample of the target population for generalization purposes (Salkind, 2010). Essential features of the Asian Indian population in the United States include settlement patterns, acculturation stress and assimilation, mental and physical health issues, family dynamics, and religious practices.

Residential Settlement Patterns

According to Pew Research Center (Budiman, 2021), New York, California, and Texas were the three states with the highest concentrations of Asian Indians in 2019. The oldest established Asian Indian communities in the United States were in San Francisco and Los Angeles (Hess, 1974). Historically, the Asian Indian community preferred big towns such as New York City, Los Angeles, San Francisco, Dallas, and Chicago to small towns mainly because of the availability of jobs in large cities and the personal choice of being a part of an urban and ethnically diverse environment (Hanna & Batalova, 2020). Still, there were sizable Asian Indian communities in suburban areas (e.g., Silver Springs, Maryland, Fremont, California, Queens, and New York; Times of India, 2011). The metro areas with the highest number of Asian Indian populations in 2019 were New York (711,000), Chicago (238,000), San Francisco (234,000), Dallas (208,000), Washington (192,000), San Jose (189,000), Los Angeles (171,000), Houston (161,000), Atlanta (137,000), and Philadelphia (137,000; Pew Research Center, 2021a).

Acculturation Stress and Assimilation

According to Joseph et al. (2020), acquisition of a new culture and attachment to the heritage culture can positively impact an immigrant community. Such cultural integration is true of Asian Indian immigrants, as the majority have blended with the cultural values of U.S. society while retaining their Indian culture (Sharma-Chopra, 2019). However, acculturation stress, defined as an acculturation gap between older people and their adult children (Mui & Kang, 2006), is a permanent reality among immigrant groups. Thus, when Asian Indian parents strive to preserve traditional Indian values and transmit them to their children (Pavri, n.d.), it might result in generational conflicts between parents and their U.S.-born children, and the children might feel torn between two divergent cultures (Segal, 1991; Sharma-Chopra, 2019). In contrast, Mathur (2000) identified considerable evidence of bicultural identity among Asian Indian children.

Ethnic Groups Within an Ethnic Community

Although race is a more fluid concept influenced by current social and political thinking (Parker et al., 2015), the U.S. Census Bureau in 1980 identified Asian Indians as a unique racial or ethnic group. However, the Indian population in the United States is not homogenous, and several subgroups within the Asian Indian population retain their own cultural and religious practices (Durvasula & Mylvaganam, 1994). In general, India is divided into three major ethnic groups: Indo-Aryans (72%), Dravidians (25%), and Mongoloid and other minority groups (3%; Sousa, 2019). Most Asian Indian ethnic subgroups (except Hindi speakers) in the United States distinguish themselves based on language. Therefore, although Gujaratis, Punjabis, Marathis, and Bengalis all fall within the Indo-Aryan ethnic group, they primarily identify themselves based on the Indo-Aryan language of their state in India—Gujarati (Gujarat), Punjabi (Punjab),

Marathi (Maharashtra), and Bengali (West Bengal; Cardona, 2017). Similarly, Malayalis,

Kannadigas, Telugus, and Tamils—who belong to the Dravidian group—identify themselves

based on the languages of South Indian states such as Malayalam (Kerala), Kannada

(Karnataka), Telegu (Andhra Pradesh and Telangana), and Tamil (Tamil Nadu; Krishnamurti,

2020; Pavri, n.d.). People with Mongoloid racial ancestry are mainly found in Northeastern states

in India (e.g., Assam, Arunachal Pradesh, Mizoram, Manipur, Meghalaya, Nagaland, Tripura,

and Sikkim). These ethnic subgroups have distinct cultural characteristics in terms of cuisine,

eating habits, religion, clothing styles, hairstyles, and language (Hamer et al., 2018).

Mental Health Issues

Despite the growing number of Asian Indians in the United States, they have been

underrepresented in the U.S. mental health literature (Durvasula & Mylvaganam, 1994). Only a

few studies (Leung et al., 2012; Mehta, 1998; Rastogi & Wadhwa, 2006) have provided some

insight into the mental health of the Asian Indian population and their use of the mental health

care system. According to the findings of a survey of 96 Asian Indians in the United States

conducted by Roberts et al. (2016), those with depressive symptoms were more likely to have

social, family, or relationship problems. Leung et al. (2014) found Asian Indian immigrant

communities experienced significantly increased levels of depression, anxiety, and psychosocial

distress regardless of gender, age, and generation (see also Lee et al., 2009; Roberts et al., 2016).

Leung et al. (2014) further explained that many Asian Indians were less inclined to seek

assistance for mental health problems than physical health problems. In a 1982 study, Sue and

Morishima (1982) indicated mental illness was shameful and stigmatizing to Asian Americans

but expressed hope this attitude might change as the community adopted prevailing societal

beliefs about mental health. However, culturally associated stigma regarding mental health

service use is still an issue in this community (Karasz et al., 2019). Some Asian Indian Americans are at a greater risk of experiencing psychiatric symptoms due to their migrant status and acculturation issues (Chandra et al., 2016).

Multilingual Community

India is multilingual, with 121 languages and over 19,500 dialects spoken as mother tongues (Indian Express, 2018). Fourteen of these languages have at least 10 million speakers (Kawoosa, 2018). The Asian Indian community in the United States reflects this diversity. First-generation Asian Indians continue to speak their native language with family and friends in their community (Dayer-Berenson, 2011). Regional differences in the use of language are also visible in the United States. For example, Hindi is primarily spoken by immigrants from northern India, while Asian Indians from South India do not (Racova, 2020). Immigrants from southern India speak regional languages such as Tamil, Telegu, Kannada, or Malayalam. Most Asian Indians speak English fluently, making their transition to American culture easier (Dayer-Berenson, 2011; Segal, 1991)

Marriage, Family, and Community Dynamics

The structure of Asian Indian families is essentially different from Western European and most U.S. families (Substance Abuse and Mental Health Services Administration, 2014). Asian Indians are group-centered, altruistic, and cherish individual sacrifice for the benefit of the group or family (Segal, 1991). Asian Indian culture and religion frequently use family as the unit of analysis rather than individuals (Durvasula & Mylvaganam, 1994). Asian Indian Americans generally agree that parenthood and marriage are extremely important in one's life (Pew Research, 2012a). Asian Indians (78%) are more likely than others to say that being a good parent is one of the most important aspects of their lives. Arranged marriages and same caste

marriages are still common in India (Allendorf, 2013), and this practice is mirrored in the Asian Indian community in the United States. Marriage in an Asian Indian family may be viewed as taking place between two families rather than between two individuals (Sharma et al., 2013). These conventional norms, however, may cause conflict between children who have assimilated into U.S. culture and their parents (Choi et al., 2008).

The institution of dowry is another feature of Asian Indian society in relation to marriage. A *dowry* is a payment made by the bride's family to the groom's family in the form of property or valuable security (Kochuparambil, 2021). In 1961, India passed the Dowry Prohibition Act, which outlawed the practice (Peja, 2017). However, it is still prevalent in India (Sukumar, 2017). There are no known cases of dowry related homicide or suicide in the United States.

Multireligious Community

India is a secular country where followers of many religions can live and practice freely. Most of the world's Hindus, Jains, and Sikhs live in India (Majumdar, 2018). India also has the second-largest Muslim population and is home to millions of Christians and Buddhists (Pew Research Center, 2021b). According to the Pew Research Center (2012b), 973 million (79.5 %) of the Indian population were Hindus, 176 million (14.37 %) were Muslims, and only 31 million (2.5%) were Christians in 2010. However, the religious composition of Asian Indians in the United States differs significantly from that of India. Only 51% of Asian Indian Americans are Hindus, though nearly all Asian American Hindus (93%) traced their ancestry to India, according to a 2012 survey conducted by Pew Research Center (Desilver, 2014). In 2012, 18% of Asian Indian Americans claimed to be Christians, while only 10% claimed to be Muslims. In a 2015 survey conducted among Asian Indians in the United States, 80% reported religion was important in their lives (Wike & Simmons, 2015).

Civic and Political Engagement

Despite constituting slightly more than 1% of the U.S. population and less than 1% of all registered voters (Times of India, 2021a), Indian Americans are active participants in civic and political affairs. Citizenship is critical in determining Asian Indian political commitment (Brettel, 2020). According to Badrinathan et al. (2021), in the 2020 Indian American Attitudes Survey—a nationally representative internet-based survey of 1,200 Indian residents in the United States—U.S.-born citizens reported the highest levels of engagement, followed by foreign-born U.S. citizens, with noncitizens trailing behind.

Asian Indians have a long history of civic and political engagement regarding the issue of naturalization. Asian Indian immigrants were dynamically involved in the fight for residency and citizenship rights in the early 1900s (Das, 2002). Leaders like Dalip Saund, who wrote *My Mother India* and became the first person of Asian descent elected to serve as a U.S. representative (Saund, 1930), and Taraknath Das, who believed in the formation of a free society devoid of race discrimination and called for an end of unusual restrictions imposed on immigrants from Asia (Saha, 2000), mobilized the Indian community in California to counter-attack anti-Indian sentiments (Hess, 1974; Pavri, 2018). The Ghadar Party (1913–1948), organized by Indians, particularly Sikhs, was formed in San Francisco to end British rule in their homeland of India (Britannica, 1998).

Since the 1980s, the Asian Indian community has been actively raising funds for their preferred candidates. In the 2012 congressional elections, Asian Indians contributed $20.6 million to U.S. domestic politics (Chakravorty et al., 2017). According to the Pew Research Center (2012c), Asian Americans were more likely to support the Democratic Party (50%) than the Republican Party (28%), with roughly one fifth (22%) not supporting either party. In 2021,

U.S. President Joe Biden appointed or nominated more than 20 Indian Americans to be part of the U.S. government, with as many as 17 of them in crucial positions alongside Vice President Kamala Harris, who also has roots in India (Times of India, 2021b).

Relations With India

Many Indian immigrants have brought with them identities rooted in their ancestral homeland (Badrinathan et al., 2021). Asian Indians frequently visit India to keep in touch with friends and family. They are interested in Indian politics and contribute to the election campaigns of Indian political parties, in addition to being active in U.S. politics. Asian Indian immigrants are also involved in charitable work for their mother country (Stuteville, 2015). Asian Indian Americans are generous in sending funds to India in the aftermath of a natural disaster or for development activities to help the poor (Chakravorty et al., 2017). Similarly, India's leaders consider Indian communities around the world to be important. Despite concerns over the years about a brain drain from India, or a phenomenon in which India's best talent moved to the United States and Europe, India has remained the top provider of immigrant scientists and engineers (Srivastava, 2015). India's leaders believe that its emigrants can still benefit the country economically and culturally (Economic Times, 2013; Khadria & Kumar, 2015).

Other Demographic Trends

Asian Indians in the United States have experienced unprecedented and rapid demographic changes, particularly in population size, English proficiency, educational attainment, and economic characteristics, compared to the general U.S. population and other immigrant groups in the United States. The Asian Indian population in the United States increased from 1.9 million to 4.6 million between 2000 and 2019, whereas it was only 815,000, according to the 1990 U.S. Census (U.S. Census Bureau, 1990). Pew Research Center (2021a)

reported, among Asian Indians, 32% were U.S.-born, and 68% were foreign-born as of 2019.

Among the foreign-born Asian Indians, 49% became U.S. citizens mainly through naturalization.

The largest group among the foreign-born were those residents in the United States for 21 years

or more (31%), followed by those with a residency of fewer than 5 years (29%), 6–10 years of

residency (14%), 11–15 years of residency (13%), and 16–20 years of residency (13%; Budiman

& Ruiz, 2021). On average, Asian Indians have a higher education level and English proficiency

compared with many other new immigrant groups (Rastogi & Wadhwa, 2006). Around 96% of

U.S.-born and 77% of immigrant Asian Indians were proficient English speakers in 2019

(Budiman & Ruiz, 2021). Although 13% of Americans hold a postgraduate degree, that rate has

increased to 24% for all Asians, 41% for U.S.-born Asian Indians, and 43% for foreign-born

Asian Indians. Asian Indians outperformed many other minority groups in the United States

regarding economic well-being (Chakravorty et al., 2017). According to Pew Research Center,

while 13% of all Americans were poor in 2019, the rate among Indian Americans was only 6%

(Budiman & Ruiz, 2021).

In short, Asian Indian Americans have established a distinct identity among Asian

Americans mainly due to progress in education, economic well-being, and the high influx of

immigrants from India. However, the transformation of the Asian Indian community from an

academically and economically vulnerable group in the 19th and early 20th centuries to the rich

and educationally thriving ethnic minority community of the 21st century includes a painful

immigration story of struggles and exclusion (see Appendix A). Today, the Asian Indian

community in the United States has remained heterogeneous along ethnic, linguistic, cultural,

and religious lines.

Having discussed the various facets of the research problem (internet pornography use) and demographic characteristics of the target population, I next examine the potential triggers or correlates of internet pornography use that might shed some light on the etiology of internet pornography use. Several correlates of internet pornography use have been evident in the research literature: (a) depression (Harper & Hodgins, 2016), (b) increased stress and anxiety (Leonhardt et al., 2018; Wordecha et al., 2018), (c) loneliness (Butler et al., 2018; Yoder et al., 2005), (d) insecure attachment (Kor et al., 2014), and (e) low life satisfaction (Willoughby et al., 2018). Among the various potential triggers, I have chosen two variables for further investigation: (a) attachment patterns (secure and insecure) because of their developmental significance in an individual's life (A. P. Brown, 2011; Hazan & Shaver, 1987); and (b) loneliness, because of its significant correlation with internet pornography use (Butler et al., 2018; P. T. Brown, 2018; Efrati & Amichai-Hamburger, 2019; Yoder et al., 2005). The connection between loneliness and internet porn consumption has recently become an important topic of mental health research due to the outbreak of the COVID-19 global pandemic (Alheneidi et al., 2021; Zattoni et al., 2020).

Loneliness

Loneliness is a common human experience, particularly among older (Chawla et al., 2021) and younger generations (Berguno et al., 2004). For example, 20%–34% of older people in 25 European countries (Yang & Victor, 2011) and 25%–29% in the United States (Ong et al., 2016) reported loneliness. Around 80% of children aged 8–10 years have reported feeling lonely at school (Berguno et al., 2004). Bu et al. (2020) found young adults aged 18–30 had a high risk of loneliness. This psychological construct has recently received growing attention in the academic milieu due to the coronavirus pandemic (Banerjee & Rai, 2020; Gomboc et al., 2021).

In this study, I discussed the complexity of understanding loneliness, its theoretical roots, its conceptualization, its consequences, and the relationship between pornography and loneliness.

The Complexity of Understanding Loneliness

Scholars differ in conceptualizing the phenomenon of loneliness. Most definitions of loneliness emphasize perceived deficits in relationships. Perlman and Peplau (1981), for example, defined loneliness as a discrepancy between one's desired and achieved levels of social relations (see also Antonelli-Salgado et al., 2021; Lee et al., 2021; Mann et al., 2017; Peplau & Perlman, 1982; Wang et al., 2017). For Li et al. (2021), loneliness was an unpleasant feeling caused by the dichotomy between social status and expected social interactions. Several other scholars have also observed loneliness from a relationship perspective, such as (a) a condition of being disconnected from a positive relationship (Woodward, 1967), (b) a longing for connection due to the dissatisfying relational life (Hull, 2021; P. J. Wright & Silard, 2021; Williams & Solano, 1983), or (c) a lack of attachment relationships (Mikulincer & Shaver, 2007). According to H. S. Sullivan (1955), loneliness is "the exceedingly unpleasant and driving experience connected with the inadequate discharge of the need for human intimacy, for interpersonal intimacy" (p. 290). Other definitions have focused on emotion. Qualter et al. (2015), for example, defined loneliness as a fleeting negative emotion triggered by a person's perceived social isolation. According to Cacioppo and Hawkley (2005), loneliness is a complex emotion of negative feelings and cognitions, including anger, fear of negative evaluation, unhappiness, pessimism, shyness, and negativity.

Most definitions of loneliness have included an emotional component and were always negative in nature (Clore & Ortony, 2013). However, whether loneliness is primarily an emotion, a mental representation, or a behavioral difficulty is debatable (P. J. Wright & Silard, 2021)

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because these factors are found to be antecedents or consequences of a lonely experience (MacKenzie, 2003). For example, loneliness can be caused by isolation or social deficiencies rather than by loneliness itself (Yanguas et al., 2018). In contrast, for Hawkley and Cacioppo (2010), loneliness was synonymous with perceived social isolation but not with objective social isolation (see also Piejka et al., 2021). Thus, an individual can be alone without feeling lonely and feel lonely even when with other people (Hawkley, 2018; McClelland et al., 2020). In short, there has been a lack of conceptual clarity and consistency in defining the term loneliness.

Theoretical Roots of Loneliness

To comprehensively conceptualize the phenomenon of loneliness, I discuss the historical roots of the theories of loneliness. Some researchers have considered Bowlby's (1969) attachment theory to be the forerunner of modern theories of loneliness (Hawkley, 2018; Mikulincer & Shaver, 2014). Bowlby's theory emphasizes the importance of the infant's affectionate bond with the caregiver (K. N. Levy & Johnson, 2019). Attachment theory sees insecure-ambivalent attachment patterns as a precursor to loneliness. Children with these attachment patterns are more likely to be rejected by their peers than others (Berlin et al., 1995). These rejections may impede their social development and increase their distrust of others, fostering ongoing loneliness (Hawkley 2018). In other words, "Loneliness is a form of separation anxiety that results from failure to have one's basic attachment needs fulfilled" (Mikulincer & Shaver, 2007, p. 280). In this study, attachment theory guided the conceptualization and operationalization of loneliness.

Conceptualization of Loneliness

In this study, I used the theory of loneliness developed by the sociologist Weiss (1973) in his book, *Loneliness: The Experience of Emotional and Social Isolation*. Weiss (1989) defined

loneliness as an anxious situation that arises when the individual is separated from their attachment figure and tries to overcome the anxiety through repression (see also Akbag & Imamoglu, 2010). As a result, behaviors potentially damaging to attachment relationships may make a person chronically vulnerable to loneliness (Berlin et al., 1995; Hazan & Shaver, 1987; Mikulincer & Shaver, 2007). Weiss (1973) was one of the first researchers to consider loneliness from multiple perspectives. In the current study, I discuss the social provisions and types of loneliness developed by Weiss, which guided me to operationalize loneliness.

Social Provisions. The belief that different relationships meet different interpersonal or social needs, also known as social provisions, underpins Weiss's (1974) typology of loneliness. Weiss identified six social provisions that, if not met, lead to feelings of loneliness (Chiu et al., 2016; Hawkley, 2018; Weiss, 1998). These social provisions were (a) attachment, provided by relationships in which the person receives a sense of intimacy, safety, and security; (b) social integration, provided by a system of relationships in which individuals share interests and concerns; (c) opportunity for nurturance, derived from relationships in which the person feels responsible for the well-being of another; (d) reassurance of worth, represented by relationships in which the person's skills and abilities are validated; (e) reliable alliance, represented by perceived access to assistance in times of need and derived from relationships in which the person can count on assistance under any circumstances; and (f) guidance, provided by relationships with trustworthy and authoritative individuals who can provide advice, suggestions, and solutions (Weiss, 1973; see also Russell et al., 1984). The interpersonal deficit experienced by a person as a result of the loss of a specific relationship is determined by the social provisions provided by that relationship (Weiss, 1974).

Types of Loneliness. Weiss's (1973) typology of loneliness flows from the idea of social provisions. Weiss distinguished two types of loneliness: emotional and social. However, researchers have opposing views about the types or forms of loneliness (Russell, 1982). According to Russell (1982), one school of thought holds that there is a common core of experiences representing loneliness; thus, different types of loneliness are irrelevant. An alternative view is that two or more qualitatively distinct types of loneliness exist. Weiss resolved this dilemma by integrating these opposing perspectives. According to Weiss (1973), while both social and emotional loneliness share a core set of experiences, the subjective experience of loneliness distinguishes them. Social and emotional loneliness differ in their subjective experiences, antecedents, and emotional and behavioral consequences (Russell et al., 1984).

Furthermore, Weiss (1973) found that social and emotional loneliness are distinct experiential states with different social provisions or interpersonal needs. According to Weiss, emotional loneliness is due to an absence of attachment and close intimate relationships. Social loneliness, on the other hand, results from a lack of social reassurance and is a reaction to social deficiencies. Several studies support this typology (Gomboc et al., 2021; Labrague et al., 2021; Russell et al., 1984; Saine & Zhao, 2021). Moreover, the two forms of loneliness are associated with different affective reactions and coping behaviors (Russell et al., 1984). There is evidence of a connection between emotional loneliness with anxiety and social loneliness with depression (Schwab, 1997; see also Knoke et al., 2010).

Operational Definition of Loneliness

Differences in subjective experiences associated with social and emotional loneliness make the operationalization of loneliness problematic. However, integrating these dimensions is

essential to understand loneliness comprehensively. Therefore, I operationally defined loneliness in this study by computing the social and emotional loneliness items found in the revised version of the University of California at Los Angeles (UCLA) Loneliness Scale (Russell et al., 1980; Russell et al., 1984). This questionnaire consists of 20 statements, half describing feelings of loneliness (i.e., emotional loneliness) and the other half expressing feelings of nonloneliness or satisfaction with social relationships (i.e., social loneliness). Thus, this scale is a good criterion for testing differences in the subjective experiences of social and emotional loneliness. These findings are consistent with Weiss's (1973) conceptualization of the two forms of loneliness.

Consequences of Loneliness

Loneliness is a common experience in adolescents and young adults and is related to several mental and physical health problems (Bu et al., 2020; K. Cooper et al., 2021). Neuroscientific studies have shown how neural alterations lead to these health issues (Cacioppo et al., 2014). Hence, I discuss the impact of loneliness on the brain and its role in mental and physical illness.

Impact of Loneliness on the Brain

Cacioppo et al. (2014) concluded loneliness affects the brain and behavior and increases the risk of death. According to Cacioppo et al., two interconnected biological mechanisms— changes in the hypothalamic-pituitary-adrenal axis activity and compromised functioning of the innate immune system—play a critical role in mediating the effect of loneliness on poor health outcomes (Cacioppo et al., 2014). Zilioli and Jiang (2021) found loneliness was associated with a flattened diurnal cortisol slope, that is, reduced changes in cortisol levels during waking hours that are indicative of a dysregulated hypothalamic-pituitary-adrenal axis, and higher C-reactive protein levels. Investigating the causal impact of induction of loneliness on vagal activity during

social stimuli processing, Piejka et al. (2021) discovered that even a brief induction of loneliness can result in a blunted vagal suppression during social information processing.

Loneliness: A Risk Factor for Mental and Physical Illness

Loneliness is an established risk factor for physical and mental illness (Cacioppo & Cacioppo, 2018; Masi et al., 2011; Preece et al., 2021). Loneliness has been linked to many mental disorders, including (a) depression (Banerjee & Rai, 2020; Chang et al., 2019; Ebesutani et al., 2015; Groarke et al., 2021; Mehus et al., 2021; Xu & Chen, 2019), (b) anxiety (Banerjee & Rai, 2020; Ebesutani et al., 2015; Mehus et al., 2021), (c) chronic stress (Huang et al., 2019), (d) insomnia (Benson et al., 2021; Griffin et al., 2020; Hom et al., 2020), (e) late-life dementia (Hawkley & Cacioppo, 2010; Sundström et al., 2020; Sutin et al., 2020; Wilson et al., 2007), (f) Alzheimer's disease (El Haj et al., 2016), and (g) diminished optimism and self-esteem (Wilson et al., 2007). Boursier et al. (2020) found evidence that perceived feelings of loneliness predicted excessive social media use and anxiety, suggesting isolation probably reinforces the individuals' sense of loneliness, thus reinforcing the need to be part of virtual communities.

The feeling of loneliness has also been associated with (a) psychosis (Fulford & Mueser, 2020; Knafo, 2020; Stefanidou et al., 2021); (b) personality disorders (Hepp et al., 2020), particularly with borderline personality disorders (Hauschild et al., 2018; Miller et al., 2020); (c) decline of cognitive functioning (Cheng et al., 2021; Hawkley & Cacioppo, 2010; Kidambi & Lee, 2020); and (d) altered attentional and affective functioning (Layden et al., 2017). Loneliness was correlated with obesity (Hajek & König, 2019; Qualter et al., 2018) and drug addiction (Cao & Liang, 2020; Jain & Swami, 2020). Furthermore, loneliness has been consistently associated with the incidence of suicidal ideation (Antonelli-Salgado et al., 2021) and is a significant risk

factor for premature mortality and suicide (Cerel et al., 2019; Chang et al., 2019; Fazel &

Runeson, 2020; McClelland et al., 2020).

Application of Loneliness to Internet Pornography Use

After reviewing the literature on types of loneliness, its consequences, and the theoretical

lens for understanding loneliness, I reviewed studies that looked at the relationship between

loneliness and internet pornography use. In *The Centerfold Syndrome*, Brooks (1995) identified a

"pervasive disorder" derived from a combination of loneliness and pornography. Brooks

concluded loneliness was one of the primary reasons people engage in pornography. The more

one uses pornography, the lonelier one becomes, and the pattern becomes cyclical (Efrati &

Amichai-Hamburger, 2019; Yoder et al., 2005). According to Willoughby et al. (2016),

relationship distress can lead to loneliness, which can lead to pornography viewing.

Bozoglan et al. (2013) investigated the relationships between loneliness, self-esteem, life

satisfaction, and internet addiction among university students in Turkey and found loneliness

was the most important variable associated with internet addiction. Using structural equation

modeling, Butler et al. (2018) explored the bidirectional relation between pornography use and

loneliness through the lens of script theory and the addiction model. Butler et al. concluded those

who viewed pornography were more likely to experience loneliness, and those experiencing

loneliness were more likely to view pornography.

To conclude, the literature review underlines the significance of conceptualizing

loneliness through the attachment lens. Attachment theory is also helpful in understanding the

association between internet pornography use and loneliness, as insecure attachment patterns can

trigger the later onset of loneliness and internet porn viewing. Hence, the need to explore the

attachment theory of Bowlby (1969/1982) and Ainsworth (1973) and the various attachment

patterns discussed in their studies.

<div align="center">**Adult Attachment Patterns**</div>

Bowlby's (1969/1982, 1973, 1980) and Ainsworth's (1973) attachment theory is the

conceptual bedrock of the *adult attachment pattern*—another principal variable used in this

study. A detailed understanding of the formation of an attachment pattern in a child and its later

translation into an adult attachment style (Hazan & Shaver, 1987) is pivotal to understanding the

possible association between internet pornography use and attachment patterns among the target

population. I next discuss the attachment theory of Bowlby and Ainsworth, adult attachment

patterns, and the application of attachment patterns to internet pornography use.

Attachment Theory

Attachment theory is the joint work of Bowlby and Ainsworth (Bretherton, 1992). Its

seminal ideas originated mainly with the pioneering work of Bowlby (1958). In the 1930s,

Bowlby worked as a psychiatrist and psychoanalyst in a child guidance clinic in London, where

he treated many maladjusted children with emotional disturbance (Bretherton, 1992; McLeod,

2017). These clinical experiences informed Bowlby on the significance of the child's

relationship with the caregiver in the child's development, prompting Bowlby to develop

attachment theory within an evolutionary biological framework (Bowlby, 1969/1982; Gazzillo et

al., 2020). Bowlby emphasized the nexus between early infant separation from the mother and

consequent traumatic experiences and later maladjustment (Salcuni, 2015).

Ainsworth's methodology paved the way for empirical testing of Bowlby's ideas and

contributed to the theory's expansion (Bretherton, 1992). Ainsworth coined the concept of the

attachment figure as a secure base from which a child can explore the world (Ainsworth, 1979;

Cassidy et al., 2013). Although Bowlby and Ainsworth worked independently of each other during the early stages of their careers, both were influenced by Freud and other psychoanalytic thinkers (e.g., Bretherton, 1992). Though attachment theory incorporates much psychoanalytic thinking (Petters, 2019), many of its principles also derive from ethology, cybernetics, cognitive psychology, developmental psychology, information processing, and control theory (Bretherton, 1992; see also Bowlby, 1977, 1988).

Attachment theory is based on the relations formed and developed between an infant and their primary caregiver (Bowlby, 1969/1982, 1973, 1980). Bowlby (1969) defined *attachment* as a "lasting psychological connectedness between human beings" (p. 194). Attachment is a reciprocal and bidirectional process involving the caregiver nurturing the child and the complementary child behavior that evokes parental care (R. Sullivan et al., 2011). According to attachment theorists, children form secure or insecure attachments in response to caregivers' consistent availability and responsiveness during emotional distress (Bowlby, 1969). The tenets of attachment theory have gained a prominent place in recent scientific studies (Bosmans et al., 2020; Gazzillo et al., 2020; Helly et al., 2021; Raby et al., 2021; Rholes et al., 2021; Sochos, 2021). Internal working models, child attachment patterns, and mental representations of self and others are some of the basic tenets of attachment theory.

Internal Working Models

Bowlby (1969) described how the unique relationships between infants and their caregivers provided the foundation for future relationships. Early interactions with caregivers are incorporated into *internal working models*—mental representations of attachment relationships that include judgments and evaluations of the self, the other, and the self in relation to the other—guiding infants in subsequent attachment experiences within their interpersonal

environment (Benoit & DiTommaso, 2020; Bowlby 1969, 1973; Gazzillo et al., 2020; Smith et al., 2021; Yaakobi, 2019). As a result of the internal working model, the relationship with the primary caregiver serves as a prototype for later relationships outside the family (Bowlby, 1969). These models are not fixed but are open to change with new attachment-relevant experiences (Bowlby, 1980; Rholes et al., 2021).

Script-like representations are an essential component of the attachment tenet of the internal working model (Waters & Waters, 2006). According to Mikulincer and Shaver (2007), internal working models function as a relational if-then script. If the if-then script derives from the interaction with a warm and supportive attachment figure, a secure base script is formed (Nivison et al., 2020; H. S. Waters, Rodrigues et al., 1998; T. E. Waters, Ruiz et al., 2017). The following is an example of an if-then proposition in a secure base script: If I encounter a problem, I can approach my colleagues or friends; because they are available and supportive, their support will give me comfort and motivation, and I can get back to what I was doing. (Waters & Waters, 2006; see also Raby et al., 2021). This secure base script promotes optimism and hope in future interpersonal relationships and helps individuals cope well with relational problems and feelings of loneliness.

On the other hand, people with insecure attachment patterns, particularly anxious and avoidant, possess sentinel and rapid flight-fight scripts, respectively (Ein-Dor et al., 2011). Sentinel scripts include high sensitivity to signs of impending danger and a predisposition to warn others about the threat while staying close to others in an unsafe situation. On the other hand, flight-fight scripts prompt the individual to take immediate self-protective action by escaping or acting against the danger when it is imminent. There is evidence for the psychological reality of various scripts. Using a prompt-word outline method, Waters and Waters

(2006) found participants with secure attachment patterns wrote more stories around the secure base script than insecurely attached people, pointing to the different script-like representations of secure base experiences (see also Mikulincer et al., 2009). In short, the internal working model is not the passive residual of experience but an ongoing process of active construction and elaboration of experiences (Waters & Waters, 2006). This tenet of attachment theory is central to understanding child attachment patterns.

Child Attachment Patterns

Internal working models guide attachment behaviors, and these specific attachment behaviors form a child's attachment style (attachment pattern or attachment organization) (Bowlby, 1969). The patterns include infants' strategies to gain proximity and security from the caregiver when distressed or feeling threatened (B. Wright et al., 2015). By using a strange situation procedure, a test that involved observing a child's reactions in a situation where the child's mother and a stranger (a safe adult unknown to the child) would interact with the infant, Ainsworth proposed three main child attachment patterns: (a) secure, (b) ambivalent insecure, and (c) avoidant insecure (Ainsworth, 1967; Ainsworth et al., 1971; Ainsworth et al., 1978; Ainsworth & Bell, 1970; Ainsworth & Wittig, 1969). Another attachment pattern, disorganized insecure attachment, was later added (Gazzillo et al., 2020; Main & Solomon, 1986).

When caregivers sensitively and appropriately cater to their child's emotional and physical needs, they are more likely to form a secure attachment characterized by enjoyable human companionship and cherished close relationships (Bosmans et al., 2020; Dujardin et al., 2016). Secure attachment style in children is a protective factor (Haselbeck et al., 2019). When caregivers respond inconsistently to their child's needs, the child may learn they cannot rely on others for protection and is more likely to develop an insecure attachment pattern (Bowlby,

1969/1982; see also Benoit & DiTommaso, 2020) characterized by anxiety and avoidance in

relationships (Bowlby, 1980; Karreman et al., 2019; see also Smith et al., 2021). According to

Bowlby (1977), attachment quality becomes stable over time.

Adult Attachment Patterns

A child's attachment bond with their primary caregiver remains stable throughout

adulthood (Hazan & Shaver, 1987; Nabi & Rizvi, 2015; Shaver & Brennan, 1992). Therefore,

the various attachment styles reported by Ainsworth et al. (1978) and Bowlby (1969, 1973,

1980) for infants have been found in adulthood as well (Hazan & Shaver, 1987). In this study, I

examined adult attachment patterns using Bartholomew and Horowitz's (1991) model. To

categorize adult attachment styles, Bartholomew and Horowitz used two orthogonal dimensions:

positive and negative views of self and others (Akbag & Imamoglu, 2010; Brennan et al., 1998;

Mikulincer et al., 2002; Shaver & Mikulincer, 2002).

These attachment styles are examined under two orientations—attachment anxiety and

attachment avoidance (Karreman et al., 2019; Shen et al., 2021; see also Pietromonaco &

Feldman Barrett, 2000). Attachment anxiety is characterized by fear of rejection and

preoccupation with relationships, whereas attachment avoidance is characterized by distress with

the intimate relationship (Karreman et al., 2019). Based on the parameters of negative and

positive models of the self and the other, as well as the individual's level of avoidance and

anxiety, adult attachments are classified as secure, preoccupied, fearful, and dismissive

(Bartholomew & Horowitz, 1991; Turan et al., 2016; see also Nabi & Rizvi, 2015). Individuals

with low avoidance and low anxiety are considered securely attached, whereas those with high

anxiety and avoidance tend to be insecurely attached (i.e., preoccupied, fearful, and dismissive;

Shen et al., 2021). According to Bartholomew and Horowitz (1991), attachment patterns share a spectrum of behaviors spanning from secure to insecure attachment.

Secure Adult Attachment Style. Secure individuals have both a positive self-image and a positive other image characterized by mutuality, closeness, and respect (Akbag & Imamoglu, 2010). These individuals generally have high self-esteem and trust in others. Secure individuals experience low anxiety and low avoidance (Nabi & Rizvi, 2015). The remaining three styles—preoccupied, fearful, and dismissive—are insecure attachment styles.

Preoccupied (Anxious) Adult Attachment Style. Preoccupied individuals are characterized by a negative view of themselves and a positive view of others (Nabi & Rizvi, 2015; Simpson & Rholes, 2017); they have low avoidance and high anxiety in relationships and tend to be highly dependent on others (Akbag & Imamoglu, 2010). These conflicting views lead anxious people to question their worth, and they experience negative affect, stress, fear of rejection, and abandonment (Cassidy & Berlin, 1994; Sheinbaum et al., 2015; Simpson & Rholes, 2017).

Fearful Adult Attachment Style. Those with a fearful adult attachment style have a negative view of themselves and others; they are shy, feel unworthy, and have a sense of mistrust in their relationships (Pace et al., 2012). Fearful adults experience high anxiety and avoidance and protect themselves from expected rejection in close relationships by avoiding intimacy with others (T. Levy, 2017).

Dismissive Adult Attachment Styles. Dismissive individuals have a positive view of the self and a negative view of others (Knoke et al., 2010); they generally seem to have low sociability, although they have high self-esteem (Griffin & Bartholomew, 1994b; see also Akbag & Imamoglu, 2010). Dismissive individuals are likely to be afraid of intimacy and dependency

and avoid intimate relationships to protect themselves from potential disappointment in a

relationship (Hazan & Shaver, 1987; Nabi & Rizvi, 2015).

Mental Representations of the Self and the Other

According to Bowlby (1969, 1973, 1988), the relationship with attachment figures

defines an individual's mental representation of the self through an internal working model.

Positive interactions with attachment figures can help people perceive themselves as valuable,

lovable, and unique, whereas negative interactions with attachment figures can distort these

positive self-representations. Therefore, attachment insecurities are associated with negative self-

representations (Pârvan, 2017; see also Mikulincer & Shaver, 2007, 2013). For example,

individuals with anxious and avoidant attachment styles have lower self-esteem and a vague self-

concept (Emery et al., 2018; Suzuki & Tomoda, 2015), whereas securely attached people may

incline toward healthy self-esteem during emerging adulthood (Rosen, 2016). Secure people

have a more balanced, complex, and coherent self-structure than insecure people (Mikulincer,

1995). Attachment insecurity has been associated with symptoms of psychopathology in

adulthood as well (Pascuzzo et al., 2015).

In accordance with attachment theory, individuals with different attachment styles have

diverse perspectives on the other (Bowlby, 1973). Positive interactions with significant others

promote a positive view of others, whereas emotionally negative interactions with attachment

figures contribute to a negative view of others (Mikulincer & Shaver, 2012, 2013). For example,

secure attachment is associated with high social competence (Vaughn et al., 2019). In contrast,

avoidant attachment is correlated with negative views of others (Chervonsky, 2019) and a

decreased desire to be with others when alone (Sheinbaum et al., 2015). Anxious attachment is

associated with (a) distrust in romantic relationships and cognitive and behavioral jealousy

(Rodriguez et al., 2015), (b) lower level of marital satisfaction (Mikulincer & Shaver, 2007, 2014), (c) frustrating interactions with attachment figures (Cassidy & Berlin, 1994), and (d) concern about losing one's partner (Simpson & Rholes, 2017).

Application of Attachment Theory to Internet Pornography Use

Attachment theory insights have been used in studies to explain better the link between attachment patterns and internet pornography use. People with insecure attachment patterns have been more likely to engage in pornography viewing than people having a secure attachment. For example, Weisskirch and Delevi (2011) found higher attachment anxiety was associated with a positive attitude toward sexting (i.e., texts that solicit sexual activity). Individuals with an anxious attachment style consumed more online pornography and engaged in compulsive sexual behavior than those with a secure attachment style (Efrati, 2018; Efrati & Amichai-Hamburger, 2019; Niazof et al., 2019). Armstrong and Mellor (2013) investigated whether attachment, intimacy, and anxieties concerning interpersonal interactions were possible differentiating factors for those convicted of internet child pornography offenses. Armstrong and Mellor discovered that those who engaged in internet child pornography reported significantly less secure attachment than nonoffenders. The same group was also characterized by a highly fearful attachment style and a more negative view of themselves than nonoffenders. Having reviewed the recent literature about the principal components of adult attachment patterns, I next describe their association with the other two variables of the study—internet pornography use and loneliness.

Relationship Between Internet Pornography Use, Loneliness, and Attachment Styles

I have reviewed the literature on two potential triggers of internet pornography— loneliness and attachment patterns—and their relationship to internet pornography use (Butler,

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2018; Efrati, 2018; Efrati & Amichai-Hamburger, 2019; Niazof et al., 2019; Yoder et al., 2005).

In this segment, I discuss relevant studies that investigated the relationship between internet

pornography use, loneliness, and attachment patterns. I begin with research on the relationship

between loneliness and attachment patterns.

Loneliness and Attachment Patterns

Studies of attachment styles have indicated individuals with specific attachment styles

show differences in levels of perceived loneliness (Erozkan, 2011; Hazan & Shaver, 1987;

Mikulincer & Shaver, 2014). Akbag and Imamoglu (2010) examined the predictive power of

attachment style on shame, guilt, and loneliness. They found attachment patterns had a more

significant effect on loneliness than other negative emotions among individuals with insecure

attachment styles (see also Mikulincer & Shaver, 2007, 2014). Loneliness has been positively

correlated to fearful, dismissive, and preoccupied attachment styles while negatively correlated

to the secure attachment style (Bogaerts et al., 2006; Deniz et al., 2005; Hazan & Shaver, 1987;

Wiseman et al., 2006). Insecure people are lonelier because they cannot satisfy their basic

attachment needs due to their negative perception of others. In contrast, secure people are less

lonely than others, as they easily develop close and intimate relationships due to a positive view

of themselves and others (Akbag & Imamoglu, 2010). Among insecure attachment patterns,

anxious attachment is more conducive to loneliness than avoidant attachment (e.g., Bogaerts et

al., 2006; Berlin et al., 1995). Attachment-anxious people exaggerate their unsatisfied needs for

love and security, which intensifies the psychological pain of insufficient or missing intimacy,

emotional closeness, and a partner's signs of acceptance, understanding, and care.

Internet Pornography, Loneliness, and Attachment Styles

The literature has been limited on the relationship between internet pornography use, attachment styles, and loneliness. Mikulincer and Shaver (2007) identified unfulfilled attachment needs in loneliness as a craving for proximity, love, and security when people were lonely, and pornography could serve as a temporary escape from this distressing feeling of loneliness (as cited in Butler, 2018; see also Chasioti & Binnie, 2021). Efrati and Gola (2019) concluded individuals with compulsive sexual behavior had an external locus of control, anxious attachment, greater loneliness, higher frequency of pornography use, and more sex-related online activities than other groups.

Employing an online survey, Efrati and Amichai-Hamburger (2019) examined psychological factors behind online sexual behavior among 713 Israeli adolescents and found participants' attachment orientations were crucial in understanding the impact of loneliness on online sexual activity and the frequency of pornography use. The analyses also revealed the effect of loneliness on the frequency of pornography use and sexually related online activities were dependent on attachment anxiety. Regardless of loneliness, adolescents who scored higher on attachment anxiety had a higher frequency of pornography use and a higher number of sexually related internet activities. Efrati and Amichai-Hamburger concluded anxiously attached people tried hard to achieve closeness, support, affection, and love. However, they lacked confidence that these resources would be made available and were afraid of being rejected by others. Thus, online sexual activity and pornography might compensate for anxious adolescents' intimacy needs regardless of their actual sensation of loneliness. Efrati and Amichai-Hamburger's study was a clear example of the interrelatedness between internet pornography use, attachment pattern, and loneliness through the lens of attachment theory.

Theoretical Framework

After examining internet pornography use, the target population, and the potential triggers of pornography, I have constructed a theoretical model to help explain the relationship between internet pornography use and the potential triggers or probable factors for pornography use. There are single-factor and multifactor theories to explain deviant sexual behaviors, including internet pornography use (Faupel, 2015), and traditional theories are mainly single-factor theories. According to Faupel (2015), a single-factor theory explains the development of sexually deviant behavior through the lens of a single underlying factor or a limited set of factors. For example, practitioners of Freudian psychoanalysis would interpret sexual deviance as a defense mechanism to overcome intrapsychic anxiety due to the unresolved problems experienced during childhood (Freud, 1905; see also Wood, 2021). Social cognitive theorists (i.e., social learning theorists) have explained how childhood sexual abuse and exposure to sexually explicit material can lead to diverse gratifying sexual activities in adulthood (Berliner & Elliot, 2002; Kegeles et al., 1988; Malamuth & Check, 1985; Van Wyk & Geist, 1984). Cognitive theorists have identified cognitive distortions as the reason for deviant sexual behavior (Keenan & Ward, 2000). Attachment theorists have explained insecure attachment and intimacy struggles as antecedent factors of internet pornography use (Olmstead et al., 2013; Szymanski & Stewart-Richardson, 2014).

Attachment theory has traditionally been used to explain user behavior in the online platform (D'Arienzo et al., 2019; Efrati, 2018; Efrati & Amichai-Hamburger, 2019; Eichenberg et al., 2017), including internet pornography use (Efrati & Gola, 2018). In recent literature, the addiction model (Love et al., 2015) and sexual script theory (Simon & Gagnon, 1986, 2003;

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Timmermans & Van den Bulck, 2018) have been widely used among researchers to explain internet pornography use.

A few scholars have found the inadequacy of using a single-factor theory to explain the phenomenon of sexually deviant behavior and have proposed theories that combine multiple factors to explain it. These multifactor (integrative) theories borrow heavily from single-factor theories or are fusions of single-factor theories (Salerno, 2014). For example, Marshall and Barbaree's integrated theory proposed that the combination of developmental experiences, biological processes, cultural norms, and psychological vulnerability are significant causal factors for sexually deviant behavior (Ward, 2002). Hall and Hirschman's quadripartite model, another multifactorial theory, emphasizes the combination of sexual arousal, thought processes, emotional control, and personality problems can cause sexually offensive behavior (Ward, 2001). Siegert's pathways model (Gannon et al., 2012), Finkelhor et al.'s (2017) precondition model, and Ward and Beech's integrated model (Faupel, 2015) are a few other multifactor theories used to explain several sexually deviant behaviors. However, these multifactorial theories address sexually deviant behaviors only in general and do not particularly explain internet pornography use.

Although a few single-factor theories address internet pornography use, they are insufficient to explain excessive internet pornography use in the context of multiple correlates (Salerno, 2014). As the current study uses two potential triggers or correlates—loneliness and attachment patterns—to explain internet pornography use, a single-factor theory may not fully understand the phenomenon of internet pornography. Realizing this limit of single-factor theories and the inadequacy of the aforementioned multifactor theories to understand internet

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pornography use, I constructed a new theoretical framework by integrating a few relevant single-factor theories to give the theoretical framework a multifactorial nature.

Attachment theory helps to understand two potential triggers of internet pornography used in this study: insecure attachment patterns and loneliness. As a result, attachment theory was the primary focus of this theoretical framework. To strengthen the theoretical foundation of this study, I incorporated two conceptual models into Bowlby's (1969) and Ainsworth's (1973) general attachment theory: Gagnon and Simon's (1973) sexual script theory (the cognitive component) and Griffith's (2005) six-phase addiction model (neurobiological factors). This integrative theoretical model can congruently explain the relationship between the three variables used in this study, as these conceptual models are interconnected. The addiction model was very much related to attachment theory because the latter has been used to explain many problematic and addictive behaviors, including social networking addiction (Monacis et al., 2017; J. B. Li et al., 2018) and substance use disorder (Borhani, 2013; Schindler, 2019). Similarly, Bridge (2020) established that attachment theory and sexual script theory together could explain sexually related behaviors (Bridge, 2020). The theoretical framework I developed for this study is presented in Figure 1.

Figure 1

Graphic Presentation of the Theoretical Framework
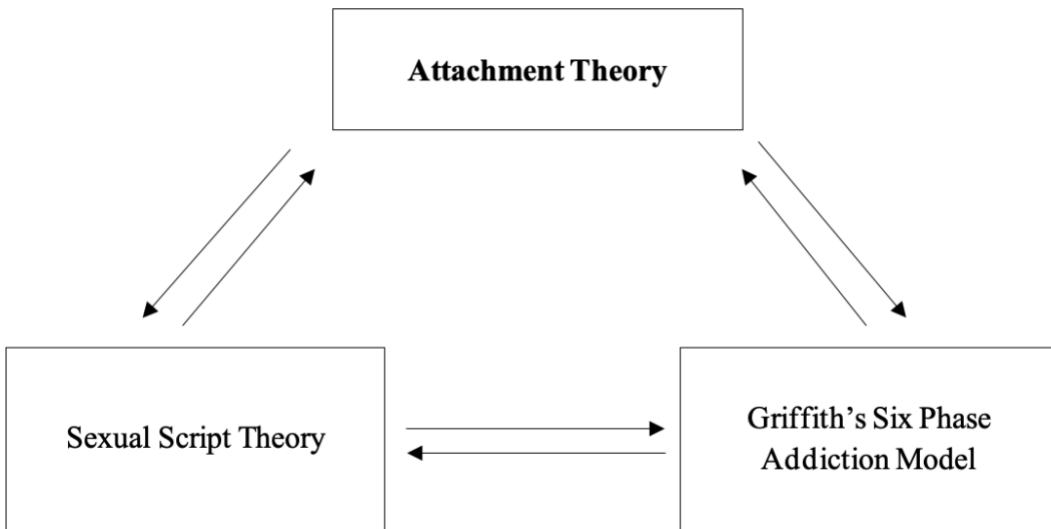
Attachment Theory

By incorporating insights from psychoanalytic schools (Babić et al., 2016), attachment theory can be used to interpret pornography as a phobic strategy (defense mechanism) that allows users to avoid any real encounter with others due to relationship anxiety. Besides its role in explaining the phenomenon of internet pornography use, attachment theory served as an effective tool to comprehensively conceptualize two of its correlates used in this study—loneliness (Mikulincer & Shaver, 2014; Hazan & Shaver, 1987; Bartholomew, 1990; Erozkan, 2011) and attachment styles (Ainsworth et al., 1978; Bowlby, 1969, 1973, 1980). Considering the great potential of attachment theory to explain the main variables used in this study, I used attachment theory as the umbrella theory of this study.

Into this traditional model of attachment theory, I incorporated insights from Griffith's (2005) six-phase addiction model and Gagnon's and Simon's (1973) sexual script theory to explore the phenomenon of internet pornography. The addiction model was very much related to attachment theory because the latter has been used to explain many problematic and addictive behaviors, including social networking addiction (D'Arienzo et al., 2019; Monacis et al., 2017) and substance use disorder (Borhani, 2013; Schindler, 2019). Flores (2001, 2004) interpreted addiction as an attachment disorder. The addiction model can be used to analyze participants' level of porn consumption on the spectrum of internet pornography use.

Although the theoretical lens of attachment theory combined with the addiction model was adequate to interpret several behavioral and substance abuse addictions in general, the incorporation of sexual script theory further strengthened the theoretical foundation of this study because sexual scripts (Gagnon & Simon, 1973) might distinctly explain how attachment distress might lead particularly to sexually related addictive behaviors like internet pornography use (Butler, 2018). Therefore, I integrated insights from sexual script theory and the addiction model into this general model of attachment theory that might help readers understand the link between insecurity in attachment relationships and internet pornography use.

Addiction Model

The literature has lacked a universally agreed-upon definition for addiction (Buchman et al., 2011). However, the medical model of addiction is a helpful tool for systematically examining the excessive use of internet pornography as it is similar to drug addiction in the onset of symptoms and the consequences (Alavi et al., 2012). Peele and Brodsky (1979) popularized the idea that addictions can exist even without psychoactive drugs in their masterpiece, *Love and Addiction*. In the next section, I provide a brief history of the addiction model, its basic tenets,

the rationale for using it as a theoretical lens to analyze internet pornography use, and its limitation.

History of Addiction Model

The English word *addiction* has a complex history of linguistic morphology. Addiction directly derives from the word *addicere*, a Latin compound of the verb *dicere* (to speak) and the preposition *ad* (to), meaning "to speak to" in the active voice (Rosenthal & Faris, 2019). According to Rosenthal and Faris, the Romans later used the passive voice of *addicere* in courts, meaning "bound to" or "enslaved by" during the 5th–3rd century BCE, taking on a very different connotation from the active voice (i.e., to speak to). However, this legal meaning of enslavement was not originally associated with substance-use behaviors (Maddux & Desmond, 2000). In the first century BCE, the verb *addicere* also began to be used positively, meaning 'devoted or attached to something' or 'a deep disposition to do an activity' (Cree, 2017). In the 17th century CE, "devotion" or "attachment" emerged as the prevailing meaning of addiction (Rosenthal & Faris, 2019). During this period, the term addiction became popular to refer to the use of psychoactive substances but in a positive sense to mean commitment or devotion (Maddux & Desmond, 2000). Recently, addiction has been used in popular culture to denote impaired control and stigmatize people negatively (Rosenthal & Faris, 2019).

The negative connotation of the word addiction (Cree, 2017) was the principal reason members of the American Psychiatric Association purposefully omitted this word from the four consecutive editions of the DSM from 1980 through 2000 (DSM-3, American Psychiatric Association, 1980; DSM-IV-TR, American Psychiatric Association, 2000); the term addiction was replaced with "dependence" to refer to the compulsive use of psychoactive substances.

However, addiction reappeared in DSM-5 (APA, 2013) as "substance-related and addictive disorder."

Many professionals, including clinicians and researchers, have agreed that individual behaviors outside substance abuse could become addictive (Karim & Chaudhri, 2012; Love, 2014; Potenza, 2015). Thus, the meaning of the word addiction has been broadened to include behavioral addictions (Grant & Chamberlain, 2016; Grant et al., 2014). Although the historicity of the existence of behavioral addiction is vague (Holden, 2001), data have suggested excessive engagement in behaviors like gaming, sex, and shopping may share clinical, genetic, neurobiological, and phenomenological similarities with substance addictions (Kraus, Voon, et al., 2016a). Moreover, the compulsive use of internet pornography can change the brain's structure (Kuss & Griffiths, 2012).

Basic Tenets of Addiction Model

The best way to determine whether excessive use of internet pornography is addictive is to compare it with the clinical criteria for other established drug-related addictions. To this end, in this study, I used the components of Griffith's (2005) addiction model—salience, mood modification, tolerance, withdrawal, conflict, and relapse. Furthermore, the diagnostic criteria for substance use disorders in DSM-5 fall into four categories akin to Griffith's model of addiction and include (a) impaired control, (b) social impairment, (c) risky use, and (d) pharmacological indicators such as tolerance and withdrawal (Virginia Commission on Youth, 2017).

Neurobiological Reasons to Use Addiction Model.

The literature on internet pornography has predominantly used an addiction model to understand the excessive use of internet pornography (Yoder et al., 2005). Advanced neurophysiology studies have also supported the rationale for using the addiction model to

diagnose the severity of internet porn addiction (Hilton, 2013; Hilton & Watts, 2011; see also Nestler, 2005, 2008). Porn affects the brain in ways very similar to harmful substances (Love et al., 2015). Therefore, internet pornography as a compulsive sexual behavior (Hilton & Watts, 2011) can become addictive in a neurological sense as it is associated with chemical changes in the brain analogous to those with cocaine and methamphetamine addictions (Schiffer et al., 2007). Taking insights from neuroscience, I conceptualized internet pornography use from an addiction model. There has been evidence from pharmacology, psychotherapy, studies related to Parkinson's disease, and brain studies to conclude the addiction model is appropriate for examining the phenomenon of internet pornography use.

Evidence From Pharmacology and Psychotherapy. Some researchers have evaluated the efficacies of similar pharmacological (Kafka, 2000; Kraus, Voon, et al., 2016) and psychotherapeutic (Twohig & Crosby, 2010) treatments for problematic internet pornography use and substance use addiction. *Naltrexone*, an opioid antagonist, and serotonergic antidepressants, particularly selective serotonin reuptake inhibitors (e.g., fluoxetine, sertraline, and citalopram)—effective in controlling urges and behaviors in people with substance and gambling addictions—are also effective at reducing cravings associated with problematic internet pornography use (Kafka, 2000; Kraus, Voon, et al., 2016). Cognitive behavioral therapy and acceptance and commitment therapy are proper psychotherapeutic techniques for the treatment of both internet pornography addiction and drug addiction (Fraumeni-McBride, 2019; Twohig & Crosby, 2010).

Evidence From Studies Related to Parkinson's Disease. Studies related to Parkinson's disease have supported the role of dopamine in contributing to substance use addiction and compulsive sexual behavior (Gatto & Aldinio, 2019; Weintraub & Claassen, 2017). For example,

dopamine replacement therapies (e.g., levodopa and dopamine agonists like pramipexole and ropinirole) among individuals with Parkinson's disease were related to impulse-control behaviors/disorders, including compulsive sexual behavior (Kraus, Voon, et al., 2016b; Potenza, 2015). These findings point to the neural connection between drug addiction and internet pornography addiction.

Evidence From Brain Studies. Holden (2001) indirectly added support to the rationale to study internet pornography use through the addiction model when he found that neuroadaptation, changes in neural circuitry that help perpetuate the behavior, occurs even in the absence of drug-taking. The recent finding in neurobiology that neural reward pathways in porn addicts are being activated similarly to those who suffer from substance addictions also supports the interpretation of excessive use of internet pornography as a behavioral addiction (Hilton & Watts, 2011). Nestler's (2005) finding that all kinds of addiction are a dysfunction of the brain's mesolimbic reward centers was a breakthrough in understanding addictive behaviors. According to Nestler, addiction can occur when pleasure/reward pathways are hijacked by exogenous drugs such as cocaine or opioids and by natural processes essential to survival, such as food and sex. Just as exogenously delivered medications impair dopamine receptors in the nucleus accumbens in addiction, so do endogenously functioning neurotransmitters.

The pathway from loneliness to pornography use can also be neurobiologically explained by the addiction model through the brain's dopaminergic reward system, partially by oxytocin (Fonagy et al., 2008). According to Fonagy et al., the release of oxytocin during porn watching can inhibit the neural systems that cause adverse effects like loneliness. Because of this immediate feel-good effect of pornography (Butler, 2018), it can probably be used as a coping mechanism to escape the distressing feelings of loneliness. Furthermore, Nestler (2008) found

that DeltaFosB, a protein in the nucleus accumbens, appeared to be over-expressed in the neurons of addicted people. This DeltaFosB induction plays a vital role in drug addiction and natural addictions, including sexual behavior of internet porn use (see also Wallace et al., 2008).

Voon et al. (2014) found men with compulsive sexual behavior had greater sex-cue-related activation of the anterior cingulate, ventral striatum, and amygdala than men who do not have compulsive sexual behavior. Studying a group of 12 patients with Parkinson's disease with hypersexuality, Politis et al. (2013) found increased sexual desire correlated with increased activations in the ventral striatum and cingulate and orbitofrontal cortices among participants. Kraus, Voon, et al. (2016b) noted dysregulated hypothalamic-pituitary-adrenal-axis function had been linked to drug addiction and sexual addictions (Fosnocht & Briand, 2016).

Detailed studies of brain functions have also revealed substance addiction creates various manifestations of cerebral dysfunction collectively labeled hypofrontal syndromes (Hilton & Watts, 2011). Hilton and Watts found the critical elements of these hypofrontal syndromes—such as impulsivity, compulsivity, emotional lability, and impaired judgment—are found in all kinds of addictive patients, including people who abuse normal sexual behavior. As all addictive behaviors have a neural basis, the addiction model was appropriate to understand how internet porn users move from the less problematic to more problematic levels on the spectrum of pornography use.

Limitation of the Addiction Model

Despite the growing body of research linking compulsive sexual behavior, like excessive internet pornography use, to substance addictions, significant gaps have complicated the classification of compulsive sexual behavior as an addiction (Kraus, Voon, et al., 2016a). Although neurobiological findings have supported the use of the addiction model to explain the

excessive use of internet pornography, it does not meet all criteria of the addiction model described in DSM-5, such as tolerance and withdrawal—two items assessing physiological dependence (Kraus Voon, et al., 2016a). Kraus, Voon, et al. (2016a) emphasized the diagnostic criteria of hypersexual disorder include two unique standards related to dysphoric mood states not found in the diagnostic criteria of substance use disorders (see also Kafka, 2010, 2013). Therefore, the onset of hypersexual disorder can be defined as a maladaptive coping strategy rather than a mechanism of warding off withdrawal symptoms. However, conceptualizing internet porn viewing as a maladaptive coping strategy is not in the scope of the addiction model. Hence, such a conceptualization challenges the applicability or clinical utility of the addiction model to fully explain hypersexual behavior like severe pornography consumption (Reid, 2015).

The addiction model is also limited as it explains only the effects of internet pornography on the consumer. The model does not address antecedents that would lead someone to use internet pornography. Thus, incorporating insights from a prominent theory like sexual script theory further strengthened the theoretical foundation of this study.

Sexual Script Theory

Sexual script theory (SST) is another valuable tool for exploring the relationship between internet pornography use and sexual behaviors (Marshall et al., 2021). In line with SST, watching internet pornography can potentially influence an individual's understanding of and ascribed meaning to sexuality and sexual behavior in marital and personal life (Séguin & Blais, 2019). In this section, I describe SST, its basic principles, internet pornography through the lens of SST, and its limitations.

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What Is SST?

SST was first proposed by sociologists John F. Gagnon and William Simon (1973) in their book, *Sexual Conduct: The Social Source of Human Sexuality*, integrating insights from three intellectual traditions—symbolic interactionism and the works of Kenneth Burke and Sigmund Freud (Bancroft, 2008). This theory uses the metaphor of script that guides the patterned sexual interaction of an individual (Dworkin et al., 2007; Wiederman, 2005). A script is a cognitive representation of events that guides actions and makes sense of behavior (Jones & Hostler, 2002; Marshall et al., 2021). Therefore, a sexual script is the cognitive understanding of an individual about their sexuality, and these scripts become the lens to interpret and respond to sexual situations (Rutagumirwa & Bailey, 2018). Sexual scripts are mainly unconscious mental schemas that guide how people behave and process information during a sexual encounter (Jones & Hostler, 2002). SST was founded on the idea that the sexual script of an individual defines their perception of sexuality, the choice of sexual actions, and the subjective experience of those sexual acts (Dworkin & O'Sullivan 2005). In short, the underlying principle of SST is that the script precedes the behavior.

The Formation of Sexual Scripts. Sexual scripts emerge in interaction within three distinct levels of human experience: (a) cultural/social, (b) interpersonal, and (c) intrapersonal (Mitchell et al., 2011; Séguin & Blais, 2019; Simon & Gagnon, 1986). Culture shapes one's sexual scripts (i.e., cultural script), which serve as guidelines for appropriate gender-based behaviors, emotions, and cognition in sexual experiences (Emmers-Sommer, 2018; Rutagumirwa & Bailey, 2018; Simon & Gagnon, 1986; see also Ross & Coleman, 2011). At the interpersonal level, the individual assimilates and molds the sexual scripts (cultural scenarios) into their specific contexts and acts spontaneously. Interpersonal scripts may change throughout the life

cycle due to the interaction with significant others (Simon & Gagnon, 1986). At the intrapersonal (intrapsychic) level, individuals combine internalizations of cultural and interpersonal scripts with their desires and preferences (i.e., intrapsychic scripts; Mitchell et al., 2011). Therefore, one's sociocultural context and identity define their sexual script. As sexual scripts reflect culture, some elements will be common to members of the same culture (Dotson-Blake et al., 2012). However, personal identity is multidimensional, and individuals simultaneously belong to many different cultural groups by their race, ethnicity, religion, social class, sexual identity, and education status (Dotson-Blake et al., 2012). As a result, sexual scripts may differ significantly between individuals, even within the same cultural group or subgroup.

Sexuality as a Social Construct. SST is founded on constructivism, or the subjective interpretation of reality (Rhodes, 2020). Humans continually recreate, perfect, and reinterpret sexual scripts in a fluid and dynamic process (Jones & Hostler, 2002). Therefore, SST is molded in the epistemology of social constructivism as it considers the importance of sociocultural context in designing the sexual script (Frith & Kitzinger, 2001). Sexuality is a sociocultural construct because one's sexual script guides sexuality. SST also includes individualistic and cognitive assumptions independent of the sociocultural context (Frith & Kitzinger, 2001). Furthermore, sociocultural institutions (such as the church, educational institutions, and the media) influence the formation of sexual scripts (Marshall et al., 2021), and interpersonal and intrapersonal factors continue to influence one's sexual scripts (Jones & Hostler, 2002).

Pornography and SST

Sexual scripts mediate the relationship between pornography and sexual behavior, especially sexually coercive behavior (Marshall et al., 2021). Braithwaite et al. (2015) found permissive sexual scripts mediated the association between more frequent pornography viewing

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and potentially risky sexual behavior (e.g., hooking up). Sun et al. (2016) concluded pornographic sexual script is negatively associated with sexual intimacy and positively correlated to sexual insecurities. Therefore, psychotherapy for excessive use of internet pornography should address sources, processes of development, and consequences of these sexual scripts.

Limitations of SST

Although SST is an effective tool to examine the power of cultural factors, including internet pornography, in defining one's sexual scripts (Braithwaite et al., 2015; Marshall et al., 2021; Sun et al., 2016), it is not devoid of criticism. SST does not fully include the intrinsic significance of human sexuality; instead, through the lens of SST, sexuality is merely a cultural construct and becomes significant only when an individual assigns meaning to it (Norton, 2018). According to Norton (2018), this understanding of sexuality is a tautological argument, as something does not become significant until significance is attached to it. Even though SST is helpful for examining the role of internet pornography in marital dissatisfaction, risky sexual behavior, objectification of the other, and so forth, it remains blind to the intrapsychic factors that lead someone to porn viewing.

Summary of the Literature Review

In summary, pornography has been a part of human life in various forms and mediums for many years (Duncan, 2019). However, the dawn of the internet has led pornography to new heights (Dwulit & Rzymski, 2019). Internet pornography use has been steadily increasing for the last 3 decades because of its anonymity, affordability, and accessibility (Cooper, 1998; Cooper & Sportolari, 1997); it is primarily accessed by men and particularly young adults (Mowlabocus & Wood, 2015; Sabina et al., 2008; Yoder et al., 2005). The forced lockdown in March 2020 due to

COVID-19 accelerated online porn use worldwide. Statistical information released by Pornhub (2020) shed light on the enormous increase in porn consumption worldwide due to the outbreak of COVID-19 and the consequent quarantines and lockdowns.

Research on internet pornography use, mostly quantitative, has tended to focus on identifying the negative interpersonal, sociocultural, vocational, and intrapersonal consequences for the consumer (Barak et al., 1999; Foubert et al., 2011; George et al., 2019; Harkness et al., 2015; Mikorski & Szymanski, 2017; Perry & Schleifer, 2018, 2019; Perse, 1994; Peter & Valkenburg, 2009; Sniewski et al., 2018; Zillmann & Bryant, 1988a). Other studies have assessed the damage pornography causes to families, couples, and children (Carroll et al., 2008; Perry, 2017a, 2020; Schneider, 2000, 2003; U.S. Conference of Catholic Bishops, 2015; P. J. Wright, 2013a; P. J. Wright, 2013b; P. J. Wright & Randall, 2012; P. J. Wright et al., 2013; Zillmann & Bryant, 1988b). On the contrary, a few studies have explored the positive impact of internet pornography use (Daneback et al., 2009; Morrison et al., 2004; Poulsen et al., 2013; Weinberg et al., 2010).

Literature regarding pornography consumption in the United States has mainly targeted the general population (Carroll et al., 2008; Hald & Malamuth, 2008; Štulhofer et al., 2010; Dwulit & Rzymski, 2019). Porn consumption among ethnic minority groups in the United States (e.g., Hispanic Americans, African Americans, Asian Americans) is not adequately represented or particularly addressed in those studies. Although a few studies have been conducted among Hispanic Americans and African Americans (Rothman & Adhia, 2016; Perry & Whitehead, 2019; Perry & Schleifer, 2019), there has been very little research on pornography use among various subethnic minority groups among Asian Americans (e.g., Asian Indian Americans).

In addition to consequences, in this literature review, I also concentrated on several correlates or potential triggers of internet pornography use, such as (a) depression (Harper & Hodgins, 2016), (b) increased stress and anxiety (Leonhardt et al., 2018; Wordecha et al., 2018), (c) loneliness (Butler et al., 2018; Yoder et al., 2005), (d) insecure attachment (Kor et al., 2014), and (e) poor self-esteem (Koletić, 2017; Kor et al., 2014). Among these correlates, loneliness and insecure attachment patterns stood out in the literature on pornography. Studies on loneliness have become prominent recently because of the outbreak of the COVID-19 global pandemic (Groarke et al., 2021). The research literature has substantiated the relationship between loneliness and internet pornography use (Butler et al., 2018; Yoder et al., 2005) and internet pornography use and attachment styles (Efrati, 2018; Faisandier et al., 2012). Studies have also found the nexus between insecure attachment patterns and loneliness (Borawski et al., 2021; Faisandier et al., 2012; Spence et al., 2020).

Although there have been bivariate studies done regarding internet pornography, there has been very little multivariate research that has examined relationships among internet pornography use, loneliness, and attachment patterns. I found only one study that explored the link between attachment difficulties and internet pornography use in individuals with loneliness (Efrati & Amichai-Hamburger, 2019). Research has examined demographic variables such as age (Price et al., 2016), gender (Petersen & Hyde, 2010; Stella, 2020), religiosity (Cranney et al., 2018; Hardy et al., 2013; Leonhardt et al., 2018), general internet use (Klaassen & Peter, 2015), and early exposure to internet pornography (Cranney et al., 2018) as significant predictors of internet pornography use.

Finally, I reviewed literature about single factor and multifactor theories to help me design a theoretical framework to study internet pornography use in relation to its potential

triggers or correlates. Traditionally, single factor theories have been used to explain sexual

behaviors, including internet pornography use. Psychoanalysis (Freud, 1905), social cognitive

theory (Berliner & Elliot, 2002; Kegeles et al., 1988), cognitive theories (Keenan & Ward,

2000), and attachment theory (Efrati, 2018) are among such theories. Attachment theory is

traditionally used to explain user behavior in the online platform (D'Arienzo et al., 2019; Efrati

& Amichai-Hamburger, 2019; Eichenberg et al., 2017), including internet pornography use

(Bőthe et al., 2018). The addiction model (Love et al., 2015) and SST are now widely used

(Simon & Gagnon, 1986; Timmermans & Van den Bulck, 2018) to explain pornography use.

However, a single factor theory cannot explain pornography use and its relation to the potential

triggers used in this study, as it is limited in its scope. There are multifactor (integrative) theories

(e.g., Marshall and Barbaree's integrated theory) that explain deviant sexual behaviors in general

(Gannon et al., 2012; Ward, 2001, 2002); however, such theories are inadequate to explain the

factors of internet pornography use, as they do not particularly address internet pornography use.

Hence, there is academic demand for constructing a theoretical framework of a multifactorial

nature to help explain the potential triggers of internet pornography use.

To conclude, there is ample social science literature on internet pornography use in the

United States. However, unidimensional data (i.e., collected mainly from the general U.S.

population) provide narrow and perhaps skewed information about internet pornography

consumption among the U.S. population. Most studies have not addressed potential factors

antecedent to internet pornography use. The gap in the literature includes: (a) limited data from

ethnic minority groups in the United States, particularly Asian Indians, regarding internet

pornography use; (b) studies that investigate the relationship between internet pornography and

the potential triggers (e.g., loneliness and attachment styles); (c), qualitative studies that give

voice to the lived experience of participants; and (d) a multifactorial theoretical framework to study internet pornography use in depth. Therefore, the current state of the science warrants research that (a) collect data from an ethnic minority group in the United States, like Asian Indian Americans; (b) investigate the potential triggers that lead to internet pornography use; (3) integrate both quantitative and qualitative data to understand the phenomenon of internet pornography use more profoundly; and (4) construct a theoretical framework of a multifactorial nature.

The Current Study

The current study addressed the gaps in the literature by collecting data from Asian Indians in the United States, an underrepresented ethnic minority group. This study focused primarily on the prevalence of internet pornography among U.S.-born and immigrant Asian Indian American young adults and adults and its relation to loneliness and attachment patterns. In this study, I used the ages 18–25 years (until the 26th birthday) to denote the young adult group age (Society for Adolescent Health and Medicine, 2017). I also collected data from adults who were 26–35 years of age to compare the phenomenon of internet porn use of young adults with another age group. Unlike prior research on internet pornography use, I used a dimensional approach by constructing a spectrum design of internet pornography use that ranges from less problematic to more problematic levels of porn consumption, including multiple levels of internet pornography use among consumers. I collected both quantitative and qualitative data to explore the topic in greater depth. Finally, I developed suggestions for clinical interventions with Asian Indian young adults and adults who struggle with excessive internet pornography use based on the results. The following research questions guided this study:

1. What is the prevalence of internet pornography consumption among the U.S.-born and the immigrant Asian Indian American young adults and adults?

2. Is there an association between internet pornography use, loneliness, and attachment style in Asian Indian American young adults and adults?

3. How do loneliness and attachment style affect the level of internet pornography use in the U.S.-born and the immigrant Asian Indian American young adults and adults?

4. How do Asian Indian American young adults' and adults' descriptions of their lived experience of internet pornography inform the association between internet pornography use, loneliness, and attachment style?

I used an explanatory sequential mixed methods design to address the research questions. First, scores on the Problematic Pornography Consumption Scale for various demographic variables were used to assess the prevalence of internet pornography use among U.S.-born and immigrant Asian Indian American young adults and adults. Second, together with the scores of Problematic Pornography Consumption Scale, the scores of the University of Los Angeles Loneliness Scale (version 3), Relationship Questionnaire, and Relationship Scales Questionnaire were used to analyze the relationship between internet pornography use, loneliness, and attachment styles. Finally, qualitative in-depth interviews were used in a phenomenological study to describe a few voluntary participants' lived experiences of internet porn use. Qualitative data served to illustrate, enhance, and confirm the quantitative findings. In this qualitative follow-up phase, I explored an in-depth understanding of internet pornography use with eight participants who also participated in the quantitative phase.

The theoretical underpinnings constructed for this study align with multifactorial theories. As no current multifactorial theories directly address internet pornography use, the

current research required the construction of a new theoretical framework by integrating relevant single-factor theories to provide the theoretical framework of a multifactorial nature. This integrative theoretical model incorporates insights from the conceptual models of Gagnon and Simon's (1973) SST and Griffith's (2005) six-phase addiction model into Bowlby's (1969) and Ainsworth's (1973) general attachment theory to better examine relationships among the three variables in this study.

Chapter 3

Self of the Researcher

This study was an exploration of a phenomenon I experienced as a priest during my ministry in India, Italy, and the United States. Having discussed the justification for this study and reviewed relevant research on internet pornography use, I consider it essential to share my personal role and interest in this research process and communicate awareness of my views, experiences, and biases concerning the phenomenon being investigated. As the researcher is the primary instrument of qualitative inquiry, self-reflexivity, introspection, and critical assessment of one's own beliefs and assumptions contribute to the study's transparency and reliability (Shufutinsky, 2020). Therefore, this chapter begins with disclosing my position in relation to the research (i.e., self-positioning of the researcher) to clarify who I am in relation to the research topic (Pitard, 2017).

Self-Positioning

I learned about internet pornography use among youth through my (a) professional training in counselor education and supervision at St. Mary's University, (b) acquaintance with a few Asian Indian immigrant communities in Europe during my master's program at Gregorian University in Rome, and (c) personal experience as an assistant parish priest and later a parish priest of a few churches in India. Twelve years ago, during my tenure as assistant pastor of a town parish in Kerala, India, I was consulted for the first time regarding issues of internet pornography. A young man in his 20s visited me, as a Catholic priest, to ask for some spiritual advice to get rid of his struggles. He identified himself as a bad guy addicted to internet pornography. However, he dared to openly share his struggles and futile attempts to give up porn viewing. When he was 15, his friend initiated him into watching pornography, and he started

entering adult sites regularly. Eventually, watching pornography gave way to engaging in sexual

chats and using sex webcams. He isolated himself from his family and friends to engage in

cybersex. He tricked his parents into believing he had many school assignments and would close

the door not to be distracted. I was upset and surprised to hear the trajectories of his internet porn

addiction. He regretted his choices and described how his life would have been much better had

he never started using pornography. It was my first experience of understanding how devastating

the impact of cyberporn can be in a young adult's life.

While doing a master's degree in Italy, I also met a few Asian Indian immigrant

adolescents and young adults struggling to end their internet pornography use. Still, they did not

want to seek help from their families due to social stigma and parental judgment. My days in the

United States pursuing a PhD degree in counselor education and supervision were eye-opening

to the damaging consequences of cyberporn among adolescents and adults. A doctoral internship

with a few Asian Indian immigrants helped me understand the issue of internet pornography in

the developmental context of an individual, as I had the opportunity to visit several Asian Indian

communities in Texas.

A young man in his early 20s told me:

Father, I have been watching porn since I was 13 years old because of a cousin. I don't

blame him. It's all my fault. Thank God, I haven't watched porn for the last 2 years. But

the naked images of women do not get rid of me and stay with me always. I can't help

looking at my mom and my sister with these sexualized eyes.

The tearful eyes of the young man informed me of the harmful consequences of watching

pornography, as it objectifies the human body and distorts one's vision of sexuality.

Some images will stay with the person for the rest of their life despite their ongoing battle to overcome pornography addiction. Many young adult men I spoke with had their first exposure to internet pornography before the age of 18 mainly due to the influence of friends. They also shared that watching pornography distorted the way they looked at girls. Although I listened to stories of excessive internet pornography use of adolescent and young adult men, I could not easily relate to those stories, as my childhood experiences regarding the internet and pornography use were different from the current young generation.

I was born in a small village in Kerala, India, in the early 1980s when there was neither television nor computer during my childhood. Malayalam, a minority language in India, is my mother tongue, and English was not popular then. I did my schooling in a public school in my village, where Malayalam was the language of instruction. I joined the seminary after high school (sophomore) to pursue studies to become a priest. I completed my bachelor's degree in philosophy and theology during my seminary formation, and I became a priest after 12 years of priestly formation. I was 26. Although I belong to Generation Y (i.e., millennials), the internet was unheard of even as a teenager. Social relationships in families, and with peers, were my principal sources of recreation.

As a child, I would go to the street soon after school lectures and play cricket or rural games with my peers for 2 or 3 hours until sunset. We did not have playgrounds or children's parks to play in; the street was the only convenient playground. Our game was constantly interrupted whenever a vehicle came, but only rarely would a vehicle pass through the road near my house. The games always gave me a purpose in life and a space for social relationships. When the game was over, we would gather to talk about the "big things" in our little world. I never knew what television was until I was 7 years of age.

The news became widespread when an affluent family in my village bought a television. Children in the village gathered around the house to see this 'costly' instrument of entertainment, as people who had television were considered affluent. When television came to my house after a year, my father would force me to watch the national news to enhance my general knowledge about what was happening around the world. There were only a few televisions in the entire village when I was in middle school, and people would go to nearby houses to watch a Malayalam movie every Sunday. There was only one channel available at that time, and the entire village would look forward to watching the Sunday movie on the TV. Around 50 people from neighboring houses would gather at my home on Sundays to watch the film. Watching the movie was a great social event, and my mother would distribute some homemade sweets during the interval of the movie. I always found happiness in the matrix of a real relationship with my friends and neighbors. When the commercial advertisements appeared during the film, everyone had to watch them as we did not have any other option. The Malayalam movies of that time did not include any erotic sex scenes; they were considered obscene and culturally inappropriate. So, pornography was very rare during my teenage years except for a few naked scenes on the weekly or monthly magazine, which some of my classmates would bring to the classroom. I always thought viewing those naked pictures was sinful because it contradicted the virtue of holiness from my faith perspective.

My father bought a computer when I was 23, but I rarely used it because there was no internet access. Besides, I was not allowed to use a laptop and the internet during the 12 years of seminary formation due to the institutional rules and regulations. I started using the internet regularly when I became a priest. I was not updated about internet pornography even during the

initial days of my priestly ministry, and my recalling of pornography was limited to the color print magazines available then.

Meanwhile, the family systems in my village had dramatically changed in this 21st century mainly due to the onset of the internet. Children were born with cell phones in their hands and devoted more time to chatting with friends on social media platforms than spending time with their parents. Virtual games have substituted real games. The quality of time parents spend with their children has also become low because of the job burden of working parents.

From first-hand experience, I understand many parents fail to spend at least a few minutes together with their children every day without distractions. This emotional negligence and absence of attachment with parents can make children lonely. Therefore, I believe there is a mechanism of compensation in the virtual world for what children miss in the real world of relationships with their parents. They feel emotionally satisfied in the world of the internet.

From my experience with immigrant families, I assume the situation is slightly different, as acculturation issues among Indian families can widen this gap between parents and children. There is an academic curiosity in me to know how the younger generation's parental attachment and loneliness influence their use of internet pornography. Exploring the lived experiences of young adults with internet pornography use will reveal its link toward attachment style and loneliness. Although I cannot deny my own curiosity to know the prevalence of internet pornography use among Asian Indian Americans and its relationship with loneliness and attachment styles, my primary motivations for this research were grounded in advocacy and support of the target population.

Bracketing the Personal Biases

Given my experiences and background, I worked to reflect on my positive and negative biases in this research. My personal biases and conscious and unconscious expectations influenced the interpretation of participants' words and experiences. Therefore, the phenomenological approach demanded that I transcend or suspend prior knowledge, biases, expectations, and experience to understand the phenomenon more deeply (Creswell, 2013). I used bracketing (*epoche*), a phenomenological method, to alleviate the potentially harmful effects of my biases that may spoil the research process (Tufford & Newman, 2012). However, my prior knowledge of internet pornography directly or indirectly influenced the present study, so I realize it was hard to bracket all my preconceived judgments on this phenomenon. Besides, I had an emic attitude toward the research, as I identify with Asian Indian culture.

First, I attempted to bracket all my concerns regarding my value-laden assumptions about the impact of pornography. For example, I believe internet pornography injures the moral tone of society. My value system has a pivotal role even behind the classification of internet pornography use as less problematic and more problematic in a spectrum of pornography use rather than simply problematic or nonproblematic. I believe that even casual viewing of pornography is morally wrong, as it teaches a person to view the other as an object for one's own sexual gratification, which violates a person's dignity. Further, I wanted to suspend my belief that the past (i.e., older generation) was better than the present (i.e., younger generation) or that the preinternet era was better than the current internet era. However, it was hard for me to distinguish my role as a researcher from my identity as a Catholic priest, and I acknowledge that my moral preconceptions might have influenced the research process.

Second, I bracketed my disciplinary bias to understand the phenomenon of internet pornography use. I have a particular interest in applying the psychodynamic theory as the theoretical bedrock of this study because I was trained in psychoanalytic psychotherapy during my master's program. I am naturally inclined to find psychodynamic reasons for internet pornography use among young adults in the relationship matrix of childhood experiences. I believe psychodynamic theories like attachment theory seem to be valuable tools to explore the worlds of internet addicts concerning their attachment orientation. Through the theoretical lens of attachment theory, researchers have found that adolescents with insecure attachment might seek refuge in virtual life to compensate for the difficulties derived from social anxiety (Badenes-Ribera et al., 2019). Through the eyes of object relations theorists like Kernberg (2012), I interpreted internet pornography as a defensive withdrawal of the porn consumer from the awareness of painful states of mind related to attachment trauma into the virtual world.

Third, I bracketed my societal, cultural, and personal biases (i.e., preconceptions and presuppositions) on the phenomena of internet pornography use. My first presupposition was immigrants were more vulnerable to internet pornography use, as immigration could cause a rupture in relationships, which could lead to internet pornography use. Likewise, I had a negative attitude toward the internet and everything related to it, as I was never exposed to it during my childhood, and culture instilled in me a negative attitude toward it. Considering my attempt to bracket out all the biases, I used the psychological phenomenological framework of Moustakas (1994), that focuses on Husserl's epoche (i.e., bracketing; Creswell, 2013). However, I admit that I might have unconsciously looked for themes that underscored my assumption regarding the relationship between attachment patterns and internet pornography use.

In conclusion, my biases and assumptions may have been prevalent in the qualitative phase of this explanatory mixed methods design. So, I was vigilant about the likelihood that I would unconsciously seek my own truths in the words of the participants, but readers now have a contextual basis for interpreting the findings of the research. As my biases and assumptions concerning internet pornography use were explicit, I reflected on my role as a researcher during the various stages of the research process, especially during the interviews, data analysis, and interpretation of the results. Introspection through journaling and writing memos throughout data collection and analysis were ways and means of examining and reflecting upon my engagement with the data (Cutcliffe, 2003).

Chapter 4

Methodology

The knowledge gap concerning the potential triggers of internet pornography use (Butler et al., 2018, Yoder et al., 2005) and its prevalence among Asian Indian Americans has been identified (Das, 2002). In this chapter, I outlined the methodology I used for this study—a sequential explanatory mixed methods design (Creswell, 2014). The purpose of this study was threefold: (a) to measure the prevalence of internet pornography use among a sample of Asian Indian American young adults and adults; (b) to explore the relationship between internet pornography use, loneliness, and attachment patterns; and (c) to explore the lived experience of problematic internet porn viewers. The following research questions guided this mixed methods design:

1. What is the prevalence of internet pornography consumption among the U.S.-born and the immigrant Asian Indian American young adults and adults?

2. Is there an association between internet pornography use, loneliness, and attachment style in Asian Indian American young adults and adults?

3. How do loneliness and attachment style affect the level of internet pornography use in the U.S.-born and the immigrant Asian Indian American young adults and adults?

4. How do Asian Indian American young adults' and adults' descriptions of their lived experience of internet pornography inform the association between internet pornography use, loneliness, and attachment style?

In this chapter, I first focus on the study's methodological congruence—the fit between research problem, research questions, and the research design (Richards & Morse, 2002). Next, I

describe the participants, sample, instrumentation, data collection, and data analyses procedures. I conclude the chapter by discussing the limitations of the research design.

Methodological Congruence

This mixed methods design being sequential, I employed an overarching paradigm (worldview) and multiple epistemologies that best fit this study's research situation (Creswell & Plano Clark, 2018). The term paradigm refers to the philosophical assumptions that define the researcher's action and worldview in social science research (Kuyini, 2017). Epistemology is the theory of knowledge (i.e., how we know what we know and the relationship between the knower and the known) embedded in the theoretical perspective and thereby in the methodology (Crotty, 1998). In this study, I used pragmatism as an overarching paradigm, and multiple epistemologies, theories, methodologies, and methods flowed from this paradigm.

Pragmatism: An Overarching Paradigm

As the study began quantitatively, I began from a postpositivist epistemology that directed the selection of instruments, the measurement of variables, the choice of statistical tools, and the assessment of statistical results (Creswell & Plano Clark, 2018; Kaushik & Walsh, 2019). When I moved to the follow-up qualitative phase, I shifted from a postpositivist approach to a constructivist perspective, as the qualitative phase elicited multiple meanings from participants' voices (Creswell & Plano Clark, 2018). This definitive shift from a postpositivist epistemology in the first phase of the research into a constructivist epistemology in the second phase was made possible because I used pragmatism as an overarching paradigm. Pragmatism is classically associated with mixed methods design and adopted by many researchers as an all-encompassing paradigm (Creswell & Plano Clark, 2018; Tashakkori & Teddlie, 2003). Pragmatism incorporates insights from postpositivist and constructivist epistemologies (see also

Morgan, 2014a) and, thus, retains a dialectic perspective when interpreting quantitative and qualitative results together (Creswell & Plano Clark, 2018). Postpositivism usually supports quantitative methods and deductive reasoning, whereas constructivism emphasizes qualitative approaches and inductive reasoning; however, pragmatism embraces the two extremes and offers a flexible approach to the research design (Feilzer, 2010; Morgan 2007; Pansiri 2005) by focusing on both approaches to inquiry (Morgan 2014b). Thus, pragmatism allowed me to adopt a pluralistic stance of gathering all types of data to best answer the various research questions in this research design. Further, considering the strong nexus between pragmatism and social issues (Morgan, 2014b), the choice of this paradigm was also justified because the current research was geared toward a racial/ethnic minority group in the United States (i.e., Asian Indian Americans).

Epistemological Congruence

Pragmatism as an overarching paradigm helped integrate postpositivist and constructivist epistemologies in this mixed methods design. Postpositivism gave direction to the path of inquiry in the quantitative phase; constructivism steered the course of scientific investigation in the qualitative follow-up phase.

Postpositivist Epistemology in the Quantitative Phase

The survey-based quantitative segment of this mixed methods design was molded within a postpositivist epistemology that aligned with a broad objectivist epistemology. According to objectivism, a concrete, knowable reality exists independently of consciousness and experience, and a researcher can acquire that objective truth and meaning through careful investigation (Crotty, 1998). Therefore, objectivism presumes a distinction between the knower and the known (Daly, 2007). According to Crotty (1998), this objectivist epistemology presupposes an ontological stance (i.e., assumptions about the nature of reality) of *realism*, that is, reality is one.

Deriving from a postpositivist epistemology informed by objectivism, I believed I could explain the reality without influencing it by choosing to engage in survey research and employing the quantitative methodology of statistical analysis (Crotty, 1998; Hiller, 2016; Kivunja & Kuyini, 2017).

Constructivist Epistemology in the Qualitative Phase

The qualitative phase was embedded in a constructivist epistemology that fit in the general subjectivist epistemology. According to subjectivism, meaning does not come from an interplay between subject and object but is imposed on the object by the subject (Crotty, 1998). This subjective epistemology presumes an ontological stance of *relativism*—the reality is multiple (Chiari, 2020; Crotty, 1998) or individuals form their own realities (Creswell, 2016). Epistemologically rooted in subjectivism, constructivism also claims knowledge is constructed through a meaning-making process in the researcher's mind, shaped by their interactions with participants (Kivunja & Kuyini, 2017). Using semistructured in-depth interviews, the researcher relies entirely on the coresearchers' (i.e., participants') view and develops themes about the phenomenon based on their interpretation of participants' subjective experiences (Kaushik & Walsh, 2019; Neubauer et al., 2019). This epistemological congruence of postpositivism and constructivism in a single study was made possible through an overarching paradigm of pragmatism, as it was pluralistic by its nature and oriented to real-world practice (Creswell & Plano Clark, 2018).

Theoretical Congruence

The theoretical framework of the current study had both qualitative and quantitative segments. On the one hand, in the quantitative phase, integrating the conceptual models of sexual script theory and addiction model into the overarching model of attachment theory aligned with a

pragmatic paradigm and a postpositivist epistemology. Here, the theoretical framework followed a postpositivist logic because psychometric scales were used to measure this study's central variables (e.g., attachment styles, loneliness) associated primarily with attachment theory. The addiction model and sexual script theory aligned with this postpositivist element of attachment theory, as they all followed a deductive approach (Creswell, 2016; Daly, 2007). Therefore, potential relationships between variables emerged after the initial phase through the lens of theories used in this study (Creswell & Plano Clark, 2018; Maxwell, 2013).

On the other hand, guided by a constructivist epistemology and a pragmatic paradigm (Morgan 2014b), this theoretical framework also followed an inductive approach in the qualitative phase, as research was developed from individual perspectives to general patterns, and finally, to broad understandings (Creswell & Plano Clark, 2018). Here, I used the theories to focus on the lived experience during the coding process and interpret the combined results at the end of the study. Furthermore, a specific reason for integrating the conceptual models of sexual script theory and addiction model into the overarching model of attachment theory itself was pragmatic, strengthening the study's theoretical foundation by looking at the phenomenon from various perspectives.

Methodological Congruence

The methodology outlined the procedural assumptions (Daly, 2007). In the matrix of a pragmatic paradigm, I used a correlational research methodology (quantitative) and a phenomenological research methodology (qualitative) in this mixed methods research design. In the quantitative phase, I employed an online survey to collect data using three psychometric tools, informed by postpositivist epistemology. In the qualitative phase, through the constructivist form of inquiry, I used in-depth interviews with a sample of purposefully chosen

participants to collect qualitative data. I used Moustakas's (1994) method of analysis to distill the

lived experience of the participants. The methodological congruence of the study is depicted in

Figure 2.

Figure 2

Flowchart of Methodological Congruence of the Mixed Methods Design
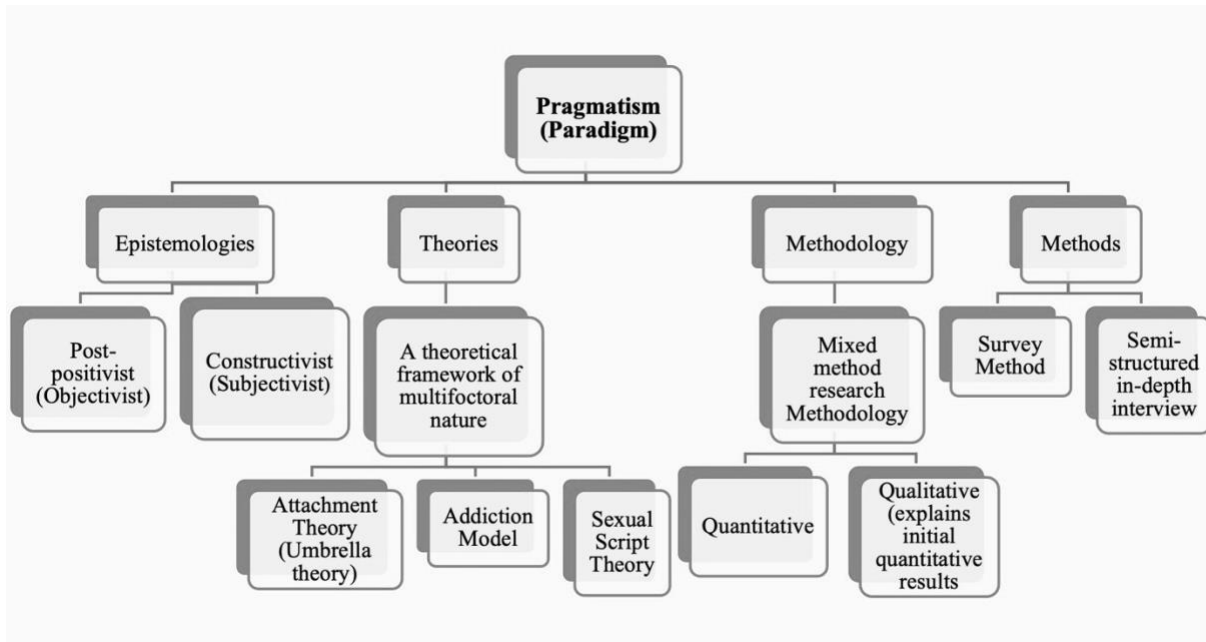
Research Design

I used a mixed methods design to address the research questions. This mixed methods

research design involved collecting, analyzing, and integrating both quantitative and qualitative

data at some stage of the research process within a single study (Creswell & Plano Clark, 2018;

Dawadi et al., 2021). Quantitative and qualitative methods complemented each other and

provided a complete picture of the research problem. As I conducted this study in two distinct

phases—beginning with a quantitative phase and following with a qualitative phase—it was a

sequential mixed methods design. Because the details of the subsequent qualitative phase emerged based on my interpretation of the initial quantitative phase results, this study followed an explanatory sequential mixed methods design.

Explanatory sequential design is a two-phase mixed methods design. The researcher begins with the collection and analysis of quantitative or numeric data, followed by the collection of qualitative data to explain or elaborate on the initial quantitative results (Sheperis et al., 2017). Although the research procedures for this study were implemented as planned at the start of the research process, flexibility was required. Therefore, it was neither a fixed nor emergent design; instead, it fell somewhere in the middle and included both fixed and emergent aspects (Creswell & Plano Clark, 2018). The priority of this study was placed on the initial quantitative (QUAN) data collection with a minor emphasis on the qualitative (qual) follow-up. The structure of the explanatory sequential mixed design is shown in Figure 3.

Figure 3

Graphic Presentation of Explanatory Mixed Methods Research Design

Data Collection Phases in the Mixed Methods Design

The data collection procedures in the explanatory sequential mixed methods design involved collecting quantitative data, analyzing the quantitative data, and using the results to inform the follow-up qualitative data collection. In this design, quantitative and qualitative data collections were related, as the latter built on the former (Creswell & Plano Clark, 2018). Hence,

a greater emphasis on the initial, substantial data collection and a smaller focus on the qualitative follow-up was unique to this study.

Quantitative Data Collection Phase

The quantitative phase of this mixed methods design employed an online survey through Qualtrics to collect the data. Survey is probably the best research method available to the social researcher who wants to collect original data to describe relationships among variables and compare groups (Sheperis et al., 2017). It is a good tool for measuring attitudes and orientations in a large population (Babbie, 2016). The quantitative data collection segment of this explanatory mixed methods design included recruitment, characteristics of participants, sampling, sample size, instruments used in the online survey, and data collection procedures.

Recruitment. Upon obtaining institutional review board (IRB) approval, recruitment letters (see Appendix B) were sent to the parish priests of various Asian Indian based Christian churches (i.e., Syro Malabar Catholic Church, Malankara Orthodox Syrian Church, Malankara Orthodox Jacobite Church, Mar Thoma Syrian Church, and Syro Malankara Catholic Church) in the United States informing them of the study and asking them to distribute the flyer. I asked these parish priests to display the flyer on their church's announcement board. The parish priests were also asked to read a recruitment script at their faith gatherings (see Appendix C) and make the recruitment letter available to their parish's young adults and adults. Volunteers could anonymously participate in the study using the URL/QR code in the flyer. I also asked parish priests to send the flyer via email and WhatsApp. The same recruitment procedures were used with the leaders of various Asian Indian Associations (e.g., Indian American Association of Chicago, Association of Kannada Kootas of America, American Telugu Association, Gujarati Samaj Orgs) located mainly around U.S. metropolitan cities such as New York, Dallas, Houston,

Los Angeles, San Francisco, and Chicago (see Appendices D and E). Also, I asked the association leaders to upload flyers to the official website of their association. The recruitment flyer can be seen in Appendix F.

All recruitment materials contained a URL link to an anonymous Qualtrics survey. The link took potential participants to a study information page with an informed consent component (see Appendix G). During the initial consent process, participants were informed about the follow-up semistructured, in-depth interview. Participants were assured of anonymity unless they chose to participate in the qualitative phase. Potential participants had to choose responses indicating that they understood the study information and that they agreed to participate before the survey could continue. They would then complete questions determining their eligibility for the study. Those who met the study's inclusion criteria were presented with the instrumentation of the study, while others were removed from the survey and presented with a thank you message.

Participants. U.S.-born and immigrant Asian Indian young adults and adults in the United States were the target population of the current study. In this study, U.S.-born Asian Indians referred to Americans by birth with ancestry from India, and immigrant Asian Indian Americans referred to people born in India who migrated to the United States. The latter also included people born outside India (e.g., the Gulf countries) with ancestry from India and who migrated to the United States. There were four inclusion criteria for this study: (a) U.S.-born or immigrant Asian Indian American, (b) 18–35 years of age, (c) fluency in English, and (d) at least 10 years of residence in the United States (see Appendix H). Participants who were 18–25 years old comprised the young adult group (Society for Adolescent Health and Medicine, 2017) and participants who were 26–35 years old were placed in the adult age group.

Sampling. I used criterion-based convenience sampling or nonprobability sampling, as participants were chosen based on their convenience and availability. Participation in this study was voluntary. A convenience sample was considered appropriate in this study due to the need for volunteers (Creswell, 2014) because of the sensitive research topic (Fahie, 2014)—internet pornography use.

Inferential statistics assume the use of random sampling (Bernstein & Bernstein, 1999). Even though I used criterion-based convenience sampling, I proceeded under the assumption that I had a random sample. To account for the use of a convenience sample, I made attempts to enhance the homogeneity of participants by recruiting a specific age group (e.g., young adults), which might help control probable confounding variables. The goal was to obtain a heterogeneous sample from within relatively homogeneous communities of Asian Indian Americans.

Before recruitment, a power analysis was performed to determine the appropriate sample size for adequate power for various statistical tests. Using G*Power 3.1 software (Faul et al., 2009), a tool to conduct statistical power analyses for various tests, sample size requirements for a linear multiple regression, one-way ANOVA, and an independent t test were estimated. First, the sample size requirement for a linear multiple regression was conducted when $1-\beta = 0.95$, $\alpha = 0.05$ and a small effect size ($f^2 = 0.15$) were fixed. The program calculated a total sample size of 107 participants where actual power was 0.95, critical $F = 3.08$, and noncentrality parameter $\lambda = 16.05$. Second, the sample size requirement for an omnibus, one-way ANOVA when $1-\beta$ at 0.80, $\alpha = 0.05$ and a small effect size ($f = 0.15$) was as follows: total sample size = 540, actual power = 0.80, critical $F = 2.39$, and noncentrality parameter $\lambda = 12.15$. Finally, the sample size requirement for an independent t test when $1-\beta$ at 0.95, $\alpha = 0.05$ and a small effect size ($d = 0.15$)

was as follows: total sample size = 105, actual power = 0.95, critical t = 1.97, and noncentrality parameter λ = 3.62. According to the power analyses, a sample size of 540 participants would have been a sufficient number to allow adequate statistical power for the majority of the statistical analyses required for the validation of the psychometrically robust scales used in this study.

Instrumentation. The entire data collection process from instrument selection to instrument administration is called instrumentation (Sheperis et al., 2017). In an explanatory sequential mixed methods research design, data are collected over a period using both quantitative and qualitative forms of instrumentation. The quantitative instrumentation phase of this study had four sections in the online platform. First, I created a demographic questionnaire to gather background information on the participants. Second, the Relationship Questionnaire (RQ) and the Relationship Style Questionnaire (RSQ) were used to evaluate the attachment style of the respondent. Third, the University of California Los Angeles Loneliness Scale, version three (UCLALS3), assessed loneliness or social isolation. Fourth, the Problematic Pornography Consumption Scale (PPCS) was used to assess the level of internet pornography use. Questionnaires (demographic variables and scale items) were uploaded in *Qualtrics*—an online platform for questionnaires (Fisher, 2020). The software program saved data in an Excel spreadsheet, that I downloaded periodically. All online materials were also prepared using Qualtrics, secured by password, and retrieved only by me and my advisor.

Demographic Questionnaire. The demographic questionnaire gathered information about participants' gender, age, birthplace, marital status, and years of residence in the United States (see Appendix I). A few questions about general internet use and internet pornography use (e.g., age of first exposure, the duration and frequency of internet use, and so forth) were added

to the demographic questionnaire. To control for confounding variables, information regarding religiosity, drug use, and alcohol consumption were also collected as some studies found they were significant correlates of internet pornography use.

Self-Report Attachment Measures. In this study, I used two self-report attachment measures to measure the attachment patterns of participants. By evaluating two dimensions of anxiety and avoidance, the measures allowed me to categorize attachment patterns into secure, dismissive, preoccupied, and fearful (Griffin & Bartholomew, 1994b). According to Griffin and Bartholomew (1994b), these four attachment patterns were derived from two attachment dimensions: anxiety (self model) and avoidance (other model). The attachment anxiety (negative self model) was calculated by totaling the preoccupied and fearful items and deducting the sum of secure and dismissive items (Bartholomew, 1990; Griffin & Bartholomew, 1994b). The attachment avoidance (negative other model) was calculated by totaling the dismissive and fearful items and subtracting the sum of the secure and preoccupied items. The two self-report measures used in this study to categorize the participants into various attachment patterns were RQ and RSQ.

The RQ scale is a single-item measure of four short paragraphs, each describing a prototypical attachment pattern as it applies to close relationships in adulthood (Bartholomew & Horowitz, 1991; see Appendix J). There are two phases in administering this scale: RQ1 and RQ2. In the first phase, RQ1, participants are asked to select a paragraph-long description that best describes them without providing a numerical rating. In the second phase, RQ2, participants are asked to rate their agreement with each prototype (paragraph-long description) on a 5-point scale. The answer to each item is scored based on a Likert-type scale (1 = *not at all like me,* 2 = *not much like me*, 3 = *somewhat like me*, 4 = *mostly like me*, and 5 = *very much like me*). The RQ

is designed to obtain continuous ratings of each of the four attachment patterns. The highest of the four attachment prototype ratings is used to classify participants into an attachment category. According to Bartholomew (1990), it is essential to administer both RQ1 and RQ2, as administering RQ1 first serves as a counterbalancing effect to minimize order effects when participants rate their agreement with each prototype in RQ2. Regarding psychometric properties, the test-retest reliability for this measure was previously assessed as being in the range of 0.74–0.88 (Wongpakaran et al., 2021). There is evidence for good convergent and discriminant validity of the RQ across cultures (Schmitt et al., 2004).

The RSQ scale includes 30 items for measuring feelings about close relationships (Stein et al., 2002; see Appendix K). Each item is scored based on a Likert-type scale (1 = *not at all like me,* 2 =*not much like me*, 3 = *somewhat like me*, 4 = *mostly like me*, and 5 = *very much like me*). The items of this questionnaire are based on scales by Hazan and Shaver (1987), the RQ of Bartholomew and Horowitz (1991), and the Revised Scale of Adult Attachment Style by Collins and Read (1990). By evaluating two dimensions of anxiety and avoidance, the RSQ examines attachment styles of secure (Questions 3, 9, 10, 15, 28), preoccupied (Questions 6, 8, 16, 25), dismissive avoidance (Questions 2, 6, 19, 22, 26), and fearful avoidance (Questions 1, 5, 12, 24). Four items contribute to the score for each of the preoccupied and fearful patterns, whereas five items contribute to the score for each of the secure and dismissive patterns of attachment (as cited in Pehrabad et al., 2016). By calculating the means of the items of each style, the score of that style will be obtained (Griffin & Bartholomew, 1994b). Questions 6 (only for preoccupied), 9, and 28 were reverse scored. According to Bartholomew (1990), the highest of the four-attachment ratings can also classify subjects into an attachment category. For example, a participant receives the following total scores and mean rating for each attachment orientation:

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secure = 25 (*M* = 5), fearful =16 (*M* = 4), preoccupied = 14 (*M* = 3.5) and dismissive = 15 (*M* = 3). Here, the participant will be categorized as someone with a secure attachment pattern as they got a mean score of 5, which is the highest among the four attachment ratings. Roisman et al., (2007) reported high internal consistency of the two dimensions of the RSQ (Avoidance's Cronbach's α = .85, anxiety's Cronbach's α = .81) when used with 60 college students and 100 undergraduates.

University of California Los Angeles Loneliness Scale, Version-3. The University of California Los Angeles Loneliness Scale (UCLALS3; see Appendix L), developed by Russell (1996), assesses individual feelings of loneliness or social isolation. It is a 20-item self-report scale rated on a 4-point Likert scale: *never* (1), *rarely* (2), *sometimes* (3), and *always* (4) to screen for the presence of various degrees of loneliness. The 20-item list consists of 10 items worded in a negative or lonely direction and 10 items worded in a positive or nonlonely direction. Questions 1, 5, 6, 9, 10, 15, 16, 19, and 20 should be reverse scored. The UCLALS3 encompasses 20 questions about the loneliness that is numerically scored on a continuous basis, with the highest score being a stronger predictor of loneliness than a lower numerical score.

This measure is a revised version of both the original UCLA Loneliness Scale and the Revised UCLA Loneliness Scale. The first revision was done to make 10 of the 20 original items reverse scored. The second revision was done to simplify the scale so less-educated populations could comprehend it (Russell, 1996). The revised loneliness scale has high internal consistency, with a coefficient alpha of 0.94 (Russell et al., 1980). In another study by Russell et al. (1978), this revised scale had high internal consistency, with coefficient alpha of 0.96 and a test-retest correlation over 2 months of 0.73. Significant correlations with other measures of loneliness indicated convergent validity for the scale. Significant relations with measures of the adequacy

of the individual's interpersonal relationships and correlations between loneliness and measures

of health and well-being supported the construct validity (Russell, 1996). As of 1980, the use of

the UCLA Loneliness Scale was cited over 500 times in the *Social Science Citation Index* and

became one of the most widely used measures of loneliness (Russell, 1996). I obtained

permission from Dr. Daniel W. Russell, the original author of the UCLALS3, to use it in my

research (see Appendix M).

   Problematic Pornography Consumption Scale. Bőthe et al. (2018) developed the

Problematic Pornography Consumption Scale (PPCS; see Appendix N), a brief scale, based on

Griffiths's (2005) six-component addiction model to distinguish between nonproblematic and

problematic pornography use. Responses are recorded on the following 7-point Likert scale:

never (1), *rarely* (2), *occasionally* (3), *sometimes* (4), *often* (5), *very often* (6), *all the time* (7).

PPCS consists of 18 items and assesses the six core components of addiction: salience

(Questions 1, 7, 13), mood modification (Questions 2, 8, 14), conflict (Questions 3, 9, 15),

tolerance (Questions 4, 10, 16), relapse (Questions 5, 11, 17), and withdrawal (Questions 6, 12,

18). Three items measure each factor. The Cronbach's alphas of the aforementioned six factors

were .77, .84, .71, .78, .86, and .86, respectively, in the original scale. The Cronbach's alpha of

the total PPCS was .96. A cutoff score of 76 was used to determine normal and problematic use;

specifically, scores greater than 76 are indicative of problematic use. I obtained permission from

Dr. Beáta Bőthe, the original author of the PPCS, to use it in my research (see Appendix O).

Qualitative Data Collection Phase

   In the qualitative phase, phenomenological research was an appropriate design to address

the qualitative research question because the descriptions of the lived experiences of participants

who engaged in internet pornography was crucial to explain the initial quantitative results

(Richards & Morse, 2013). Phenomenology captured detailed descriptions of the phenomenon of internet pornography by examining the subjective experiences of individuals who used it (Eddles-Hirsch, 2015).

The phenomenological approach includes two broad branches—hermeneutic (interpretive) phenomenology (van Manen, 1990) and transcendental (descriptive) or psychological phenomenology (Moustakas, 1994). In hermeneutical phenomenology, it is assumed knowledge comes into being through language and interpretation (Richards & Morse, 2013). In transcendental or psychological phenomenology, there is less focus on the researcher's interpretation and more attention on the description of participants' experiences. Transcendental in phenomenological research means looking at the phenomenon with a fresh eye and open mind, resulting in obtaining new knowledge derived from the essence of experience (Moustakas, 1994). Moustakas focused on Husserl's epoche (i.e., bracketing) to create this new perspective toward the phenomenon under examination (Creswell, 2013). I embraced transcendental phenomenology in this study, as I was ready to describe my own biases and bracket them out.

Recruitment, Participants, and Sampling. As the explanatory sequential design aimed to explain and provide more detail about the initial quantitative results, I recruited volunteers for the qualitative phase from participants in the quantitative study. Therefore, at the end of the survey questions in the quantitative component, I provided participants with the option to participate in a follow-up interview. Interested interview volunteers opted into a section of the survey that allowed them to enter their contact information. Participants not interested in interviewing would exit the survey once they completed the survey questions. I asked interview volunteers to provide the following contact details: name/pseudonym, email address, mobile number, and the preferred method of communication.

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All participants who volunteered for the interview were contacted 3–4 weeks postinterview through their preferred means of communication (e.g., phone, email). I used the quantitative statistical results to systematize the follow-up sampling procedures and select the participants who could best explain the phenomenon of interest (Creswell & Plano Clark, 2018). Following the instructions of Creswell and Poth (2017), who suggested 5–25 participants, and Morse (1994), who recommended at least six participants for a phenomenological study, I chose eight participants for the in-depth interview. Volunteers who were not selected for the interview were thanked for volunteering and informed that the number of volunteers exceeded the number of interviews needed.

The inclusion criteria for the in-depth interview were the same as those for the survey component—they were (a) U.S.-born or immigrant Asian Indian American young adults and adults who are 18–35 years of age; (b) fluent English speakers; (c) willing to describe their experience of internet pornography use, loneliness, and attachment styles; (d) resident of the United States for at least 10 years; and (e) willing to have their interview audio-recorded. Participants were asked to provide a pseudonym prior to the start of the interview so their confidentiality would be preserved before the interview started. When the interviews were transcribed, I used a book of culturally appropriate baby names to assign new pseudonyms to the interviews to provide additional confidentiality.

Data Collection Procedures. I interviewed participants via Zoom/phone to gain an in-depth understanding of the phenomenon of interest. Selected participants were contacted for one-on-one, semistructured interviews through Zoom or phone. The participants who wanted to have visual anonymity could choose to participate via phone. I interviewed eight participants, which was sufficient to reach saturation of data (Faulkner & Trotter, 2017). As the qualitative follow-up

phase was tentative, I filed an addendum with the IRB when the follow-up data collection

procedures and interview protocols were firmly established.

Instrumentation. In this explanatory mixed methods design, I employed semistructured

in-depth interviews to collect the qualitative data. The semistructured in-depth interview guide

provided the instructions for the interview process based on the quantitative results. As Creswell

and Plano Clark (2018) pointed out, the objective of an explanatory sequential mixed methods

design was to use qualitative data to provide more detail about the initial quantitative results. In-

depth interviews sought answers for the unclear, surprising, and unexpected results (Creswell &

Plano Clark, 2018) by asking participants to describe their lived experience of internet

pornography use. I constructed open-ended questions for the semistructured interview after

analyzing the online survey results in the quantitative phase of data collection.

However, following the lead of Moustakas (1994), participants were asked general

questions about the experience of internet pornography use and the contexts that have affected

their experience of this phenomenon. These questions were designed to focus attention on

gathering data that would lead to a textual and structural description of the experiences and

ultimately provide an understanding of the shared experience of the participants (see Appendix

P). The following are examples of a few open-ended questions that were asked:

- Describe your feelings while watching internet pornography.

- Can you describe a few of your thoughts before watching internet pornography?

- What are some of the frequent thoughts you have after viewing pornography?

- How do you feel about yourself after watching internet pornography?

- How do you feel about others after viewing pornographic material?

Data Analyses in the Mixed Methods Design

In this explanatory sequential design, data analysis and integration occurred at multiple times. I conducted the data analyses as follows: (a) collect and analyze the quantitative data, (b) connect the anonymous quantitative results to the qualitative phase using a phenomenological methodology, (c) collect and analyze the qualitative data, and then (d) use the qualitative results to understand the initial quantitative results (Creswell & Plano Clark, 2018). The steps in data analyses are outlined in Figure 4.

Figure 4

Chart of Data Analyses
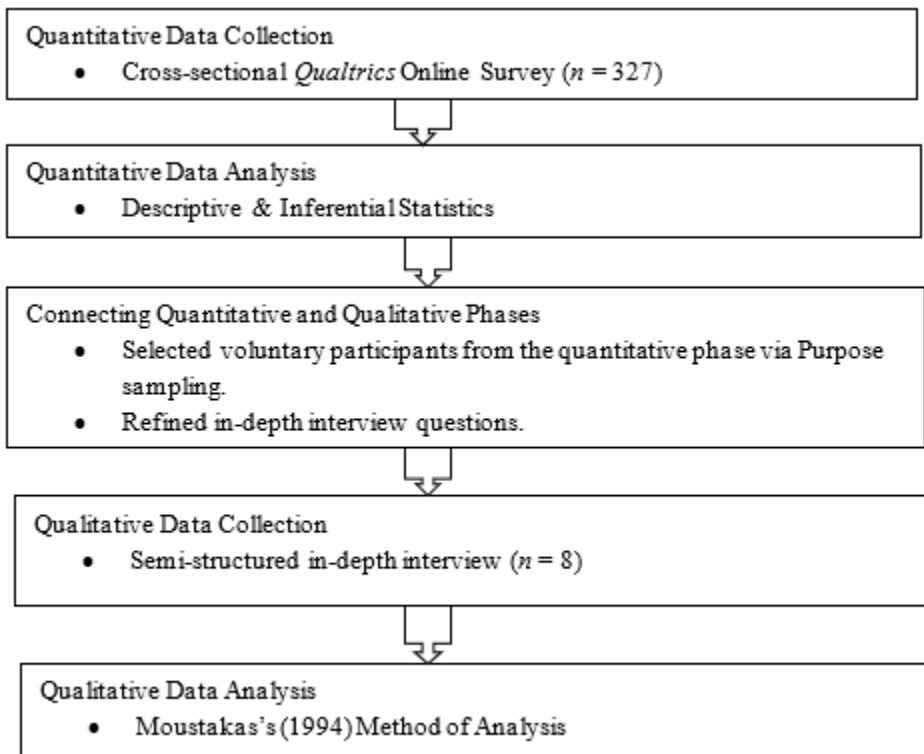
Phase 1: Quantitative Data Analysis

The first step in the data analysis process was to clean the data set to ensure complete responses. I also checked for outliers to evaluate their impact on the overall results. The data analyses of the current study (see Table 1) included both descriptive and inferential statistics. Descriptive statistics were used to describe the characteristics of the data set (i.e., each variable's mean, standard deviation, and frequency). I used inferential statistical tools such as t test and ANOVA to find the differences among the various categories or levels of demographic variables on PPCS scores. Other inferential statistical tools—such as regression, correlations, ANOVAs, MANOVA, and path analysis (structural equation modeling)—were used to explore the relationships among scores on the PPCS, UCLALS3, and the Self Report Attachment Measures (i.e., RQ and RSQ).

As recommended by Bartholomew (1990), I combined the obtained scores of the RQ and the RSQ to form a composite measure of adult attachment. First, I converted the attachment ratings of both scales into standardized scores (z scores). Then, the standardized parallel RQ and RSQ scores were combined to form a single composite measure of each attachment pattern. For example, the z-score of secure style in RQ was added with the z-score of the secure style in RSQ to get a single standardized score of secure attachment. I did the same procedure for fearful, preoccupied, and dismissive attachment patterns to have a standardized score for each attachment style. Then, I used the highest of the composite score of four attachment patterns to classify participants into an attachment category. Further, I used these composite attachment ratings to calculate the two attachment dimensions (i.e., attachment anxiety and attachment avoidance), which I would use in the statistical analyses to answer the research questions. This study used the following formula to measure attachment anxiety: (fearful + preoccupied) –

(secure + dismissive). The formula used to calculate attachment avoidance was as follows:

(fearful + dismissive) – (secure + preoccupied).

Table 1

Quantitative Data Analysis

Research questions	Statistical analysis	Variables
What is the prevalence of internet pornography consumption among the U.S.-born and immigrant Asian Indian American young adults and adults?	Descriptive statistics *and* frequencies	Demographics and *PPCS
	t test and ANOVA	Demographics and PPCS
Is there an association between internet pornography use, loneliness and attachment style in Asian Indian American young adults and adults?	Correlation	PPCS, *UCLALS3, *RQ, and *RSQ
	Regression	Demographics, RQ, RSQ, UCLALS3, and PPCS
	MANOVA	Attachment Styles, UCLALS3 and PPCS
How do loneliness and attachment style affect the level of internet pornography use in the U.S.-born and immigrant Asian Indian American young adults and adults?	Path analysis (structural equation modeling)	PPCS, UCLALS3, RQ, and RSQ

Note. *RSQ - Relationship Scale Questionnaire; *RQ – Relationship Questionnaire; *PPCS - Problematic Pornography Consumption Scale; *UCLA-LS3 - University of California Los Angeles Loneliness Scale, Version-3.

Phase 2: Qualitative Data Analysis

The qualitative phase of data analysis involved a phenomenological approach using semistructured interviews that would help elaborate the relationship between internet pornography use, loneliness, and attachment styles. I used Moustakas' (1994) method of analysis (see Table 2) as the data analytic strategy in the qualitative phase.

Table 2

Qualitative Data Analysis

Research question	Data analysis	Goal
How do Asian Indian American young adults' and adult's descriptions of their lived experience of internet pornography inform the association between internet pornography use, loneliness and attachment style?	Moustakas' transcendental phenomenology and analysis procedures Directed content analysis (Hsieh & Shannon, 2005)	To describe the lived experience of Asian Indian young adults' and adult's use of internet pornography

Moustakas's Method of Analysis. Moustakas's (1994) method of analysis is a modified version of Van Kaam's method of analysis and that of Stevick, Colaizzi, and Keen. According to Moustakas, phenomenological data analysis steps are generally similar for all psychological phenomenologists. Following the insights from Moustakas's method of analysis, I used the following steps in the qualitative phase of the study:

1. I described personal experiences with the phenomenon under study. I began with a complete description of my own experiences of the phenomenon (self-positioning; Shariff, 2014). I attempted to bracket (Tufford & Newman, 2012) my personal experiences so that the focus would be directed to the participants in the study (see Chapter 3).

2. Building on the data from the interviews, I went through the data (e.g., interview transcripts) and highlighted significant statements, sentences, or quotes that explained how the participants experienced the phenomenon. Moustakas (1994) calls this step horizontalization.

3. I developed a cluster of meaning units or themes from these significant statements.

4. I used these significant statements and themes to write a description of what the participants experienced (i.e., textural description).

5. I used these significant statements and themes to write a description of the context or setting that influenced how the participants experienced the phenomenon, called structural description. When the description and themes were identified, I conducted member checking with some participants to validate the findings (Lincoln & Guba, 1985).

6. From the structural and textural descriptions, I wrote a composite description that presented the essence of the phenomenon, called the essential, invariant structure (i.e., essence). Primarily, this passage focused on the common experiences of the participants. It means that all experiences have an underlying structure.

I used MAXQDA (VERBI Software, 2021), a qualitative data analysis software program, to assist me in analyzing the data.

Researcher Trustworthiness. Nonrandom sampling and volunteerism were sources of bias in this qualitative study. So, I took extra steps to establish trustworthiness in this phenomenological study. These steps included factors such as member checking and reflexive journaling. Member checking is a technique used by researchers to help improve the accuracy, credibility, and transferability of a study by asking the coresearchers to validate the interpretations of the data (Lincoln & Guba, 1985). A reflexive journal is the written record of what the researcher felt, thought, and did during the research process. It helps the researcher to examine their personal biases and belief systems while analyzing the data (Russell & Kelly, 2002).

Limitations of the Study

There were several limitations to the current study. The lack of random sampling was a significant limitation of this study (Krathwohl, 2009), which means that the findings cannot be generalized to the entire Asian Indian American young adult population (Sheperis et al., 2017). Given the limited resources and my lack of affiliation with the various subethnic Asian Indian groups in the United States, obtaining a fully representative sample did not appear feasible.

A second limitation of the study was the likelihood of confounding variables (Creswell, 2014; Krathwohl, 2009). Although I examined two primary potential triggers of internet pornography (i.e., loneliness and attachment styles), I did not address how to control for several potential confounding variables, such as the current pandemic-driven loneliness, depression, substance use, and religiosity (Bu et al., 2020; Estellon & Mouras, 2012). My sole focus was loneliness caused by relationship stress due to the absence of a close physical or emotional relationship. I did not address the physical limitations of the pandemic and the consequent loneliness.

Third, because pornography is a taboo subject in the Asian Indian community, social desirability may have skewed responses toward conformity to social norms regarding sexual matters (Arnold & Feldman, 1981; Sheperis et al., 2017). Furthermore, a few single-item self-report measures (e.g., general internet use, drug use, and alcohol use) may have exacerbated a significant social desirability response bias (Arnold & Feldman, 1981). Fourth, because I did not ask the participants' religious affiliations, it was not possible to determine whether the results differed across individuals on their PPCS because of their religious affiliations. Finally, another study limitation was the lack of culturally appropriate assessment tools (Chadda & Deb, 2013; Shen, 2015; Sheperis et al., 2017; Sue et al., 2019). The assessment scales used in this study

were developed in a western context and were not culturally adapted for the Asian Indian ethnic minority in the United States.

Summary

In Chapter 4, I addressed the methodology of the study, including research design, participants, sample size, recruitment, data collection procedures, instrumentation, and data analyses procedures. This chapter included a detailed explanation of the explanatory sequential mixed methods research design, including the quantitative and qualitative phases of data collection and data analyses procedures.

Chapter 5

Results

The purpose of this study was threefold: (a) to assess the prevalence of internet pornography use among a sample of Asian Indian young adults and adults; (b) to identify the association between internet pornography use, loneliness, and attachment styles; and (c) to describe the lived experience of internet porn consumers. To achieve these objectives, I used an explanatory sequential mixed methods research design consisting of two distinct phases: quantitative followed by qualitative (Creswell & Plano Clark, 2018). In the quantitative phase, I employed an online survey through Qualtric*s* to measure the prevalence of internet pornography consumption and examine the relationships between attachment styles, loneliness, and internet pornography use among the Asian Indian young adults and adults using psychometric scales such as the Relationship Questionnaire (RQ); the Relationship Scale Questionnaire (RSQ); the University of California Los Angeles Loneliness Scale, version 3 (UCLALS3); and the Internet Pornography Consumption Scale (PPCS). In the qualitative follow-up phase, I used semistructured in-depth interviews to explore the lived experience of problematic porn viewing to contextualize the initial quantitative results.

This chapter is divided into four sections. First, the preliminary analyses focus on descriptive analyses of the sample's demographic characteristics. Second, I present the summary statistics and reliability analyses of the psychometric instruments used in the study. In the third section, I summarize quantitative findings associated with each of the four research questions. Lastly, I provide a summary to describe how the qualitative results provide greater details about the initial quantitative findings of this study.

Preliminary Analyses

Recruitment letters and recruitment flyers included an invitation to participate in the Qualtrics survey using a URL/QR code. These flyers were developed and sent to Asian Indian-based Christian churches and Asian Indian associations in the United States to solicit participants for this study. The population of interest in this study was U.S.-born and immigrant Asian Indian young adults and adults in the United States. For this study, the eligible participants were defined as U.S.-born or immigrant adults between 18–35 years of age with at least 10 years of residence in the United States and English fluency.

Of 641 participants who provided informed consent, 212 (33.07%) were excluded from the study because they did not meet at least one of the inclusion criteria or did not fully complete the survey. The remaining 429 (66.93%) participants fully completed the online survey. However, of the total 429 participants, 102 reported "never" for all 18 items of the PPCS, forming zero-inflated and positively skewed data. I excluded those participants ($n = 102$) having no experience with internet pornography from this study and used only the data of the remaining 327 participants for the statistical analyses associated with the research questions. The data from those participants who had no experience with internet pornography use were not informative to the study because my aim was to identify the relationship between pornography use and its correlates.

At the end of the online survey, participants were asked to provide their contact details if they volunteered to participate in a follow-up interview, and 41 respondents provided their contact information. However, when contacted later, only eight participants responded. Those eight volunteers were interviewed in the qualitative phase.

Demographic Characteristics of Participants

Several demographic factors were relevant regarding this sample of Asian Indian young adults and adults. The demographic variables assessed in this study were age, birthplace country, gender, marital status, education level, employment status, importance of religious faith, attendance of religious services, frequency of porn viewing, age of first exposure to internet pornography use, frequency of drug use, and frequency of alcohol consumption. The descriptive statistics of demographic variables are explained in the following section.

For several of the demographic variables, a few of the group sizes were small, which could impact the statistical power of t and F tests and render some interpretations of the results useless. Therefore, I recoded demographic categories where appropriate to allow for more meaningful statistical analyses. Tables 3 and 4 contain both the raw and recoded data of the demographic variables used in this study.

Table 3

Demographic Characteristics of the Sample: Frequency and Percentage

Demographic variable	*n*	%	Cumulative %
Age			
Young adults (18–25)	173	52.9	52.9
Adults (26-35)	154	47.1	100.0
Birthplace country			
USA	131	40.0	40.0
India	147	45.0	85.0
Other (e.g., UAE)	49	15.0	100.0
Gender			
Men	185	56.6	56.6
Women	139	42.5	99.1
Nonbinary	2	0.6	99.7
Prefer not to answer	1	0.3	100.0
Marital status			
Single (never married)	236	72.2	72.2
Married/relationship	83	25.4	97.6
Divorced	2	0.6	98.2
Separated	3	0.9	99.1
Other	3	0.9	100.0
Education level			
High school/less than	96	29.4	29.4
Bachelor's degree	145	44.3	73.7
Master's degree	54	16.5	90.2
PhD/Professional degree	32	9.8	100.0
Employment status			
Employed	246	75.2	75.2
Unemployed	81	24.8	100.0
Total	327	100.0	

Note. *n* = Frequency

Table 4

Additional Demographic Characteristics of the Sample (Including Recoded Groups): Frequency

and Percentage (n = 327)

Demographic variable	*N*	%	Cumulative %
Importance of religious faith (recoded)			
Less religious	54	16.5	16.5
Somewhat religious	61	18.7	35.2
Religious	212	64.8	100.0
Religious service attendance (recoded)			
Marginally observant religious/nonobservant	63	19.3	19.3
Religiously observant	168	51.4	70.6
High religiously observant	96	29.4	100.0
Daily use of internet (recoded)			
Less frequent internet users	18	5.5	5.5
Moderately frequent internet users	191	58.4	63.9
Frequent internet users	118	36.1	100.0
Internet porn viewing			
Never	63	19.3	19.3
Less than once a year	27	8.3	27.5
Once a semester	29	8.9	36.4
Once a month	50	15.3	51.7
Once a week	57	17.4	69.1
More than once a week	65	19.9	89.0
Daily	36	11.0	100.0
Age of first exposure			
Less than 10 years old	34	10.4	10.4
10-12 years old	89	27.2	37.6
12-15 years old	104	31.8	69.4
15-18 years old	52	15.9	85.3
Above 18 years old	40	12.2	97.6
Never exposed	8	2.4	100.0
Drug consumption (recoded)			
Nonconsumers of drugs	230	70.3	70.3
Infrequent drug consumers	58	17.7	88.1
Frequent drug consumers	39	11.9	100.0
Alcohol consumption (recoded)			
Nonconsumers of Alcohol	72	22.0	22.0
Infrequent alcohol consumers	165	50.5	72.5
Frequent alcohol consumers	90	27.5	100.0
Total	429	100.0	

Note. N = Frequency

Age

Participants' ages ranged from 18–35 years old ($M = 25.84$, $SD = 4.98$) and were divided into two groups based on this study's research question: (a) young adults (18–25-year-olds) and (b) adults (26–35-year-olds). Of the 327 participants, 173 (52.9%) belonged to the category of young adults, and 154 (47.1%) belonged to the adult category (see Table 3).

Birthplace Country

Participants were mainly U.S.-born or Indian-born Asian Indian Americans. Of the 327 participants, 131 (40%) were born in the United States, and 147 (45%) were born in India. The other 49 (15%) participants were born outside India (i.e., United Arab Emirates, Oman, Qatar, Saudi Arabia, Kuwait, Bahrain, Canada, England, Austria, and Nigeria) and later migrated to the United States (see Table 3).

Gender and Marital Status

Participants' responses were recorded as male, female, nonbinary/third gender, and other. Of the 327 participants in the sample, 185 (56.6%) were male, 139 (42.5 %) were female, two participants (0.6 %) identified themselves as nonbinary, and one participant (0.3 %) preferred not to respond (see Table 3). Regarding marital status, 236 (72.2%) were single (never married), 83 (25.4%) were married or in a domestic relationship, 2 (0.6 %) were divorced, and 3 (0.9%) were separated. The remaining 3 (0.9%) participants reported "other," as they did not belong to any of the categories mentioned in Table 3.

Education Level and Employment Status

Nearly half of the participants ($n = 145$; 44.3%) who earned a bachelor's degree as their highest level of education formed the most prominent group. The remaining 32 (9.8%) had a doctorate (e.g., PhD) or a professional degree (e.g., DDS), 54 (16.5%) had a master's degree, and

96 (29.4 %) had some college/ high school degree (see Table 3). Regarding the current

employment status, over three quarters of participants (n = 246, 75.2%) who were currently

employed formed a significant group. A total of 81 (24.8%) reported they were unemployed (see

Table 3).

Importance of Religious Faith

Around two thirds of U.S.-born or immigrant Asian Indian young adults and adults (n =

212, 64.8%) said religion was at least "important" in their lives, with nearly half (n = 132,

40.4%) saying it was "very important." Approximately one in six (n = 61, 18.7%) said religion

was "moderately important." To facilitate statistical analysis, I recoded responses into three

categories. Those who responded "important" or "very important" were categorized into a new

group called "religious" (n = 212, 64.8%), and those with the response "moderately important"

were termed the "somewhat religious" group (n = 61, 18.7%). Those for whom religion was

either "slightly important" (n = 40, 12.2%) or "not important" (n = 14, 4.3%) were termed the

"less religious" (n = 54, 16.5%; see Table 4).

Attendance of Religious Services

Participants with a weekly attendance of religious services formed the largest group (n =

168, 51.4%) in this category. Those who attended religious services "several times a week" (n =

69, 21.1%) and "daily" (n = 27, 8.3%) formed the next two large groups. Those who participated

in religious services monthly (n = 28; 8.6%), once a semester (n = 15, 4.6%), and yearly (n = 10,

3.1%) formed the minority groups in this category. The remaining 10 (3.1%) participants

responded "never" when asked about the frequency of their religious attendance (see Table 4).

To run the statistical analyses in this study, I recoded participants who attended religious services

daily or several times a week into a new category called "high religiously observant" (n = 96;

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29.4%) and weekly religious attendees into a category called "religiously observant" ($n = 168$, 51.4%). The participants with low rates of religious attendance (i.e., monthly, once in a semester, yearly, or never) were recoded into a third category called "marginally observant religious/ nonobservant" ($n = 63$, 19.3%; see Table 4).

Daily Use of Internet

Three (0.9%) of the 327 participants spent less than an hour daily on the internet, forming the smallest group in this category. A total of 15 (4.6%) participants spent 1–3 hours daily on the internet. About 3–5 hours were spent on the internet by 88 (26.9 %) participants. A total of 103 (31.5%) participants who used the internet for around 5–7 hours daily comprised this category's most prominent group. The participants who used the internet daily for more than 7–9 hours comprised 83 (25.4%). The remaining groups in this category were the participants who daily spent 9–11 hours ($n = 20$, 6.1%) and more than 11 hours on the internet ($n = 15$, 4.6%; see Table 4). In this study, I arbitrarily categorized those participants who used the internet for more than 7 hours as "frequent internet users" ($n = 118$, 36.1%). The participants who used the internet for 3–7 hours daily were categorized as "moderately frequent internet users" ($n = 191$, 58.4%). The participants with less than three hours of daily internet use were recoded into "less frequent internet users" ($n = 18$, 5.5%; see Table 4).

Frequency of Internet Pornography Consumption

A total of 65 (19.9%) of 327 participants who responded "more than once a week" when asked to rate the frequency of internet porn consumption formed the largest group. The next largest group in this category consisted of 63 (15.2%) participants who reported they "never" watched porn. The remaining participants reported they watched internet pornography "once a

year" ($n = 27$, 8.3%), "once a semester" ($n = 29$, 8.9%) "once a month" ($n = 50$, 15.3%), "once a week" ($n = 57$, 17.4%), and "daily" ($n = 36$, 11.0%; see Table 4).

However, as single-item measures like this demographic variable are widely regarded as psychometrically suspect (Hoeppner et al., 2011), I decided not to use the score of this single-item rating scale for the rest of the analyses where participants' consumption level of internet pornography was required. Instead, I used an 18-item psychometric scale, PPCS, to measure the level of internet pornography consumption and for statistical analyses in this study because multiple-item scales will address a broader range of meanings to have the full scope of a construct (Hoeppner et al., 2011).

On the other hand, single items may be susceptible to unknown biases in meaning and interpretation, and a participant often needs more clarity to interpret the meaning of the item. In addition, this single item (i.e., How often do you typically view pornography?) did not seem accurate and reliable, as it did not include a clearly defined period. The absence of a reference period could also lead to inaccurate answers. However, the information from this demographic variable was helpful in formulating interview questions in the qualitative phase.

First Exposure to Internet Pornography Use

Of the 327 participants in this sample, 34 (10.4%) were first exposed to internet pornography when they were less than 10 years old. A total of 89 (27.2%) participants had their first exposure to internet porn viewing when they were between the ages of 10 and 12, and 104 (31.8%) were first exposed to internet pornography when they were 12–15. A total of 52 (15.9%) young adults and adults had their first experience of internet porn viewing when they were between 15 and 18 years of age, and 40 (12.2%) participants had their first exposure to pornography when they were over the age of 18. The remaining eight (2.4%) participants

reported that they were never exposed to internet porn viewing (see Table 4). It was unexpected and incongruent that eight participants who reported "never" for this question ("How old were you when you were first exposed to internet pornography use?") had some scores in the PPCS that measured the level of pornography consumption. One probable reason could be that those participants ($n = 8$) failed to interpret the meaning of this single-item rating scale, as single-item measures may be vulnerable to uncertain biases in meaning and interpretation (Hoeppner et al., 2011). I excluded those eight participants who reported they were never exposed to internet pornography from two of the statistical analyses (i.e., one-way ANOVA and multiple regression) that required the use of this demographic variable.

Frequency of Drug Consumption

Participants who had never used drugs made up the largest group in this category ($n = 230$, 70.3%). A total of 27 (8.3%) participants who reported they consumed drugs "once a month" comprised the next largest group. The remaining participants reported they consumed drugs "once a year" ($n = 20$, 6.1%), "once a semester" ($n = 11$, 3.4%), "once a week" ($n = 17$, 5.2%), "more than once a week" ($n = 11$, 3.4%), "daily" ($n = 9$, 2.8%), and "several times a day" ($n = 2$, 0.6%; see Table 4). In this study, the participants who reported they used drugs "once a week," "more than once a week," "daily," or "several times a day" were categorized as "frequent drug consumers" ($n = 39$, 11.9%). The participants who reported they consumed drugs "once a year," "once a semester," or "once a month" were grouped as "infrequent drug consumers" ($n = 58$, 17.7%). The participants who never used drugs were recoded as "nonconsumers of drugs" ($n = 230$, 70.3%; see Table 4).

Frequency of Alcohol Consumption

Almost a quarter of the participants ($n = 72$, 22.0%) reported they never consumed alcohol. The participants ($n = 99$, 30.3%) who consumed alcohol "once a month" formed the largest group in this category. The remaining participants reported they consumed alcohol "once a year" ($n = 25$, 7.6%), "once a semester" ($n = 41$, 12.5%), "once a week" ($n = 63$, 19.3%), "more than once a week" ($n = 23$, 7.0%), "daily" ($n = 2$, 0.6%), "several times a day" ($n = 2$, 0.6%; see Table 4). In this study, the participants who reported they used alcohol "once a week," "more than once a week," "daily," or "several times a day" were categorized as "frequent alcohol consumers" ($n = 90$, 27.5%). The participants who reported they consumed drugs "once a year," "once a semester," or "once a month" were grouped as "infrequent alcohol consumers" ($n = 165$, 50.5%). The participants who never used alcohol were recoded as "nonconsumers of alcohol" ($n = 72$, 22.0%; see Table 4).

Summary Statistics of Instrument Ratings

Summary statistics were calculated for each participant's score on the instruments used in this study to identify their psychometric properties. Statistics include scores on the PPCS, the UCLALS3, and the combined scores of the two attachment orientations (i.e., attachment anxiety and attachment avoidance) used in the RQ and the RSQ. As Table 5 suggests, the observations for the PPCS had an average of 49.98 ($SD = 23.93$, $Min = 19$, $Max = 124$). The observations for UCLALS3 had an average of 47.98 ($SD = 10.25$, $Min = 20$, $Max = 73$).

Table 5

Summary Statistics of the PPCS, the UCLALS3, and the Dimensions of Attachment Styles

Instrument	*n*	Minimum	Maximum	Mean	*SD*
PPCS	327	19.00	124.00	49.98	23.93
UCLALS3	327	20.00	73.00	47.98	10.25
Attachment anxiety	327	-13.50	12.74	0.26	4.44
Attachment avoidance	327	-14.01	12.54	0.01	4.35

To calculate summary statistics for the scores on attachment anxiety and attachment avoidance, I developed a common measurement scale by combining the attachment ratings of the RQ and the RSQ (Bartholomew, 1990). As the RQ and the RSQ differ in their ratings, it necessitated the conversion of the RQ and the RSQ scores into standardized scores (i.e., z-scores) to equalize the score from both scales. First, I independently calculated the z-scores of each attachment style (i.e., secure, fearful, preoccupied, and dismissive) found on both the RQ and the RSQ. Next, the standardized parallel scores of the RQ and the RSQ were combined. For example, the standardized RQ fearful score was combined with the standardized RSQ fearful score to have a single composite value of fearful attachment style. I did the same procedure for secure, preoccupied, and dismissive attachment patterns to have a standardized score for each attachment style. Then, I used these composite attachment ratings to calculate the two attachment dimensions (i.e., attachment anxiety and attachment avoidance), which I used in the subsequent statistical analyses to answer the research questions.

In this study, I used the following formula to measure attachment anxiety: (fearful + preoccupied) – (secure + dismissive). The formula used to calculate attachment avoidance is as follows: (fearful + dismissive) – (secure + preoccupied). Consequently, the observations for attachment anxiety had an average of 0.2631 (the sum of z-scores; *SD* = 4.44, *Min* = -13.50, *Max*

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= 12.74). The observations for attachment avoidance had an average of 0.0049 (the sum of z-scores; *SD* = 4.35, *Min* = -14.01, *Max* = 12.54). I explain the reliability analyses and descriptive statistics for study instruments in the following section.

Reliability Analyses and Descriptive Statistics for Study Instruments

In this section, I provide reliability analyses and descriptive statistics of the scores associated with the instruments used in this study. I calculated Cronbach's alpha coefficients to measure internal consistency of the scores associated with each instrument and instrument subscales (if applicable). I used a commonly acceptable rule suggested by George and Mallery (2003) for describing internal consistency when using Cronbach's alpha: $\alpha \geq 0.9$ = excellent, $\alpha \geq 0.8$ = good, $\alpha \geq 0.7$ = acceptable, $\alpha \geq 0.6$ = questionable, $\alpha \geq 0.5$ = poor, $0.5 > \alpha$ = unacceptable (see also Adadan & Savasci, 2011). The Cronbach's alpha coefficients are presented in Table 6. As Cronbach's alpha measures how closely a set of scale items is related (i.e., internal consistency; Tavakol & Dennick, 2011), Cronbach's alpha of the RQ cannot be provided because it has only one item in each subscale.

Table 6

Cronbach's α of the Scores Associated With the PPCS, the UCLALS3, and the Subscales of the RSQ (n = 327)

Instruments	*n* of items	Cronbach's α
PPCS	18	.945
UCLALS3	20	.921
RSQ (Subscales)		
Secure	5	.492
Fearful	4	.748
Preoccupied	4	.577
Dismissive	5	.636

In this section, along with reliability analyses, I also present the descriptive statistics regarding score division of the instruments to further identify the pragmatic value of each instrument used in this study. I used the PPCS scores to identify the frequency distributions of the data among problematic and nonproblematic porn consumers, and I employed the scores of UCLALS3 to calculate the frequency distribution of the data among participants with various levels of loneliness. I used the composite scores of the RSQ and the RQ to divide the participants into four attachment styles.

PPCS

Table 6 shows the PPCS had a Cronbach's alpha coefficient of .945 (α = .95), indicating excellent reliability (George & Mallery, 2003). The PPCS is an 18-item questionnaire used to assess the level of pornography use. Each item on the PPCS has a possible score ranging from 1 to 7. To understand the level of pornography consumption, Bőthe (2018) considered the PPCS scores between 18–76 as a "nonproblematic level of porn consumption," and the score above 76 as a "problematic level of porn consumption," making 76 the cut-off score. Of the 327 participants who watched pornography, 274 (83.8%) were in the nonproblematic level of porn consumption group, and 53 (16.2%) belonged to a group with a problematic level of porn consumption (see Table 7). A chi-square analysis demonstrated a statistically significant difference between the distribution of two groups of pornography consumption, X^2 (2, $n = 327$) = 149.361, $p < .001$.

Table 7

Problematic and Nonproblematic Consumers of Internet Pornography

Level of pornography consumption	*n*	%	Cumulative %
Nonproblematic consumption of porn	274	83.8	83.8
Problematic consumption of porn	53	16.2	100.0
Total	327	100.0	

Note. n = Frequency

UCLALS3

The UCLALS3 had a Cronbach's alpha coefficient of .921 (α = .92), indicating excellent reliability. The data distribution of UCLALS3 was close to a normal distribution. The normality assumption was also concluded by visually examining the histogram and Q-Q plot. The UCLALS3 is a 20-item questionnaire used to assess the level of loneliness. The total score ranges from 20–80. Higher scores indicate a higher level of loneliness. The most commonly used categorizations of scores were the following: 20–34 denoted a low degree of loneliness, 35–49 was a moderate degree of loneliness, 50–64 was a moderately high degree of loneliness, and 65–80 was a high degree of loneliness (Perry, 1990). Of the 327 participants, 35 (10.7%) reported scores between 20–34 (low degree), 139 (42.5%) reported scores between 35–49 (moderate degree), 138 (42.2%) reported scores between 50–64 (moderately high), and 15 (4.6%) reported scores between 65–80 (high degree; see Table 8). A chi-square analysis demonstrated statistically significant differences between the distribution of four groups of loneliness in this sample, X^2 (3, *n* = 327) = 160.034, p < .001.

Table 8

Categories of the UCLALS3

Degree of loneliness	*n*	%	Cumulative %
Low degree of loneliness	35	10.7	10.7
Moderate degree of loneliness	139	42.5	53.2
Moderately high degree of loneliness	138	42.2	95.4
High degree of loneliness	15	4.6	100.0
Total	327	100.0	

RQ and RSQ

The RSQ consisted of four subscales (i.e., four attachment styles): (a) secure (four items), (b) fearful (five items), (c) dismissive (four items), and (d) preoccupied (five items). The reliability statistics were calculated for each attachment subscale. The secure attachment in RSQ had a Cronbach's alpha coefficient of .492 (α = .49), indicating poor reliability (George & Mallery, 2003). The Cronbach's α coefficient of fearful attachment items was .748 (α = .75), implying acceptable reliability (George & Mallery, 2003). The Cronbach's α coefficient of preoccupied attachment items was .577 (α = .58), indicating poor reliability, and the Cronbach's α coefficient of dismissive attachment items was .636 (α = .64), which demonstrated questionable reliability (George & Mallery, 2003). Despite poor or questionable reliability for the three attachment subscales (i.e., secure, preoccupied, and dismissive), all inter-item correlations were above .20. According to Salkind (2014), Cronbach's alpha could be very low when a scale has less than 10 items. In that case, calculating the mean inter-item correlation of the items is an effective way of assessing reliability. Optimal mean inter-item correlation values range from .20 to .40 (Salkind, 2014), and all items of the subscales in this study had a mean inter-item correlation above .20. The RQ's Cronbach's alpha cannot be provided because each subscale has only one item.

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In the current study, I developed a common measurement scale by combining the

attachment ratings of the RQ and RSQ. This step necessitated the conversion of the RQ and the

RSQ scores into standardized scores (i.e., z-scores). By choosing the highest among the

combined z-score of each attachment style, the participants were categorized as secure, fearful,

preoccupied, and dismissive. Of the 327 participants, 90 (27.5%) had secure attachment style, 82

(25.1%) had fearful attachment style, 85 (26.0%) had preoccupied attachment style, and 70

(21.4%) had dismissive attachment style (see Table 9). A chi-square analysis demonstrated no

statistically significant difference among the distribution of four attachment categories in this

sample, X^2 (3, $n = 327$) = 2.65, $p = .45$; there were no significant differences between observed

and expected frequencies because the group sizes in this variable were similar.

Table 9

Four Attachment Categories from the Combined Scores of the RS and the RSQ

Attachment style	n	%	Cumulative %
Secure	90	27.5	27.5
Fearful	82	25.1	52.6
Preoccupied	85	26.0	78.6
Dismissive	70	21.4	100.0
Total	327	100.0	

Overall, reliability analyses of study instruments resulted in excellent ratings for the

PPCS and the UCLALS3. Given the small number of items within the subscales (i.e., four

attachment styles) of the RSQ (less than 10), assessing inter-item correlations yielded optimal

results (Salkind, 2014), and they were used as a method to assess reliability. Because the

dimensional subscales of attachment styles (i.e., attachment anxiety and attachment avoidance)

were constructed from different combinations of the four categorical subscales of attachment

styles (i.e., secure, fearful, preoccupied, and dismissive), the corresponding Cronbach's alpha coefficients were not calculated for them.

Quantitative Analyses of Data

In this section, I present results of the data analyses from the quantitative phase of this explanatory mixed methods design. Three research questions informed the quantitative phase of this study. The first question, "What is the prevalence of internet pornography consumption among the U.S.-born and immigrant Asian Indian American young adults and adults?" focused on identifying the distribution of internet pornography use among the target population based on various demographic characteristics. The second research question, "Is there a significant association between internet pornography use, loneliness, and attachment style among the U.S.-born and immigrant Asian Indian American young adults and adults?" required analysis of the correlations among the three variables. The third research question, "How do loneliness and attachment style affect the level of internet pornography use in the U.S.-born and immigrant Asian Indian American young adults and adults?" focused on the directed dependencies among variables.

Research Question 1—Prevalence of Pornography Consumption

Research Question 1 asked: What is the prevalence of internet pornography consumption among the U.S.-born and immigrant Asian Indian American young adults and adults? To answer the first research question, I used a *t* test and one-way ANOVA to compare mean scores of various categories of demographic variables on the PPCS score. The demographic variables used for this analysis were age, birthplace country, gender, marital status, educational level, employment status, importance of religious faith, attendance of religious services, general internet use, frequency of porn consumption, first exposure to internet porn, drug use, and

alcohol use. However, the mean scores of the various categories of the five demographic variables, such as participants' employment status, birthplace country, importance of religious faith, drug consumption, and alcohol consumption, showed no significant differences on the level of internet pornography consumption. On the contrary, the mean scores of the comparison groups of the remaining demographic variables (i.e., participants' age, martial status, gender, education level, marital status, attendance of religious services, general internet use, and age of first exposure to internet pornography) showed statistically significant differences on the level of internet pornography consumption. Detailed analyses of the significant results are presented in the following section.

Age and Pornography Consumption

Of the 327 participants, young adults (n = 173; 52.9%) had a higher mean score on the PPCS (M = 52.92, SD = 24.98) than adults (n = 154; 47.09%; M = 46.66, SD = 22.30). An independent samples t test was performed to test the hypothesis that a significant statistical difference exists between the PPCS mean scores for adults and young adults. The adults' and young adults' distributions were sufficiently normal for conducting a t test (i.e., skew < |2| and kurtosis <|7|; Byrne, 2010). Additionally, the assumption of homogeneity of variances was tested and satisfied via Levene's F test, $F(325)$ = 3.49, p = .063. The results of the independent samples t test indicated there was a statistically significant difference, $t(325)$ = 2.4, p = .018, and the null hypothesis can be rejected. Thus, there was a statistically significant difference between the young adults and adults on their PPCS scores. Cohen's d was estimated at .26, which is a small effect based on Cohen's (1988) benchmarks: small (d = 0.2), medium (d = 0.5), and large (d = 0.8). Therefore, young adult participants consumed internet pornography at a slightly, but statistically significantly, higher rate than adult participants in the study (see Table 10).

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Table 10

An Independent t Test: Mean Scores of Young Adults and Adults on the PPCS

| Distribution | Levene's test | | t | df | Sig. p | 95% CI | |
	F	Sig				Lower	Upper
Equal variances assumed	3.49	0.06	2.38*	325	.02	1.08	11.44
Equal variances not assumed			2.40*	325	.02	1.12	11.40

Note. CI = Confidence Interval of the difference, *p <. 05.

Gender and Pornography Consumption

An independent *t* test was conducted to determine if there was a statistically significant difference between men and women among Asian Indian American young adults and adults on their PPCS scores. Of 324 participants, men ($n = 185$; 57.1%) had a higher mean score on the PPCS ($M = 57.6$, $SD = 24.2$) than women ($n = 139$, 42.9 %; $M = 39.83$, $SD = 19.62$). An independent samples *t* test was performed to test the hypothesis that there was a statistically significant difference between the PPCS mean scores for men and women. The distributions of the two groups were sufficiently normal for conducting a *t* test (i.e., skew < |2| and kurtosis < |7.0|; Byrne, 2010). The assumption of homogeneity of variances was tested but not satisfied via Levene's test, $F(322) = 6.551$, $p = .011$. Therefore, I interpreted the results of *t* test when equal variances were not assumed in Levene's test. The results of the independent samples *t* test indicated there was a statistically significant difference, $t(320.13) = 7.30$, $p < .001$, and the null hypothesis was rejected. Thus, men were associated with a statistically significant larger mean score of the PPCS than the women. Cohen's *d* was estimated at 0.80, a large effect based on

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Cohen's (1988) guidelines. Thus, men were more likely to consume pornography at a

significantly higher rate than women (see Table 11).

Table 11

Comparison of Gender-Based Mean Scores on the PPCS

Distribution	Levene's test F	Sig	t	df	Sig. p	95% CI Lower	Upper
Equal variances assumed	6.55	.01	7.09**	322	<.001	12.85	22.72
Equal variances not assumed			7.30**	320.13	<.001	12.99	22.57

Note. CI = Confidence Interval of the Difference. As group sizes were small, I excluded the participants

who reported "nonbinary" ($n = 2$) and "prefer not to say" ($n = 1$) from this statistical analysis. **p <. 01.

Marital Status and Pornography Consumption

Of 319 participants, 236 with single marital status had a higher mean score on the PPCS

($M = 52.37$, $SD = 24.43$) than those who were married ($n = 83$, $M = 44.33$, $SD = 21.79$). To test

the hypothesis that the difference between the PPCS mean scores for single and married groups

were statistically significant, an independent samples *t* test was performed. The single and

married groups' distributions were sufficiently normal for conducting a *t* test (i.e., skew < |2| and

kurtosis < |7.0|; Byrne, 2010). Additionally, the assumption of homogeneity of variances was

tested and satisfied via Levene's test, $F(317) = 1.12$, $p = .292$. The results of the independent

samples *t* test indicated a statistically significant difference, $t(317) = 2.654$, $p = .004$, and the null

hypothesis was rejected. Thus, there was a statistically significant difference between single and

married people on their PPCS. Cohen's *d* was estimated at 0.34, which is a small effect based on

Cohen's (1992) guidelines. Therefore, participants with single marital status consumed internet

pornography at a slightly, but statistically significant, higher rate than the married participants in

the study (see Table 12).

Table 12

An Independent t Test: Mean Scores Differences Between "Single" and "Married"

	Levene's test				Sig.	95% CI	
Heading	*F*	Sig	*t*	*df*	2-Tail	Lower	Upper
Equal variances assumed	1.15	.29	2.7[**]	317	.004	2.09	14.02
Equal variances not assumed			2.8[**]	159.7	.003	2.38	13.72

Note. CI = Confidence Interval of the difference. As group sizes were small, I excluded the participants

who belonged to "divorced," (*n* = 3) "separated" (*n* = 3), and "other" (*n* = 3) categories from this

statistical analysis. [**]p < . 01.

Educational Level and Pornography Consumption

A one-way ANOVA was conducted to determine if there was a statistically significant

difference among participants with various levels of education on their PPCS. Participants who

earned "high school degree" (*n* = 96, 29.36%) had the highest mean score on the PPCS (*M* =

58.02, *SD* = 24.59). Participants who earned a "doctorate/professional degree" (*n* = 32, 9.79%)

had the lowest mean on the PPCS (*M* = 41.72, *SD* = 20.82). Participants with other educational

levels who fell between the previously-mentioned categories were "bachelor's degree" (*n* =145,

44.34%, *M* = 48.16, *SD* = 23.37) and "master's degree" (*n* = 54, 16.51%, *M* = 45.44, *SD* =

22.61). Prior to conducting the ANOVA, the assumption of normality was evaluated and

determined to be satisfied as the four groups' distributions were associated with skewness and

kurtosis less than $< |2.0|$ and $<| 7.0|$, respectively, except for the doctorate/professional degree group, which was slightly above the cut off (skewness $= 2.1$). Furthermore, the assumption of homogeneity of variances was tested and satisfied based on Levene's test, $F(3, 323) = 1.808$, $p = .146$.

A one-way between-groups ANOVA yielded a statistically significant difference, $F(3, 323) = 6.084$, $p < 0.001$, $\eta^2 = 0.053$ (see Table 13). Thus, the null hypothesis of no difference among the means was rejected, and educational level accounted for 5.3% of the variances in pornography consumption. The statistically significant ANOVA was followed up with Tukey HSD post hoc tests to further evaluate the differences between the mean scores of the four groups. As can be seen in Table 14, three of the six comparisons were statistically significant ($p < .05$). The level of pornography tended to decrease as a function of higher educational levels.

Table 13

One-Way ANOVA and Tukey HSD Post Hoc Analysis: Education and PPCS

Source	Sum of squares	*df*	Mean square	*F*	Sig	η^2
Between groups	9982.7	3	3327.6	6.1***	<.001	.053
Within groups	176649.1	323	546.9			
Total	186631.8	326				

Note. η^2 = Eta Squared. ***p <. 001.

Table 14

Tukey HSD: Comparisons Between Levels of Education

(I) Degree new	(J) Degree new	Mean difference (I-J)	Sig.	95% CI Lower bound	95% CI Upper bound
High school degree	Bachelor's degree	9.86[*]	.008	1.92	17.80
	Master's degree	12.58[*]	.009	2.30	22.85
	PhD/professional degree	16.30[*]	.004	3.97	28.63
Bachelor's degree	High school degree	-9.86[*]	.008	-17.82	-1.92
	Master's degree	2.71	.886	-6.91	12.34
	PhD/professional degree	6.44	.494	-5.36	18.24
Master's degree	High school degree	-12.58[*]	.009	-22.85	-2.30
	Bachelor's degree	-2.71	.886	-12.34	6.91
	PhD/professional degree	3.73	.891	-9.75	17.20
PhD/professional degree	High school degree	-16.30[*]	.004	-28.63	-3.97
	Bachelor's degree	-6.44	.494	-18.24	5.36
	Master's degree	-3.73	.891	-17.20	9.75

Note. *. The mean difference is significant at the 0.05 level.

Attendance of Religious Services and Pornography Consumption

The high religiously observant group (n = 96, 29.36%) had the highest mean score on the PPCS (M = 56.03, SD = 24.45). The marginally observant religious/nonobservant group (n = 63, 19.27%) had the lowest mean score on the PPCS (M = 44.65, SD = 19.10). The religiously observant group (n = 168, 51.38%, M = 48.51, SD = 7.59) fell in between the other categories. To test the hypothesis that the frequency of participation in religious services had a significant effect on the level of consumption of pornography, a between-groups ANOVA (one-way ANOVA) was performed. Before conducting the ANOVA, the assumption of normality was evaluated and determined to be satisfied as all groups' distributions were associated with skewness and kurtosis less than $< |2|$ and $< |7.0|$, respectively. However, the assumption of

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homogeneity of variances was tested but not satisfied based on Levene's test, $F(2, 324) = 3.705$, $p = .026$.

A one-way between-groups ANOVA yielded a statistically significant difference, $F(2, 324) = 5.073$, $p = .007$, $\eta^2 = .030$ (see Table 15). Thus, the null hypothesis of no difference between the means was rejected, and the frequency of attending religious services accounted for small percentage (3%) of the variances in the level of pornography consumption. To further evaluate the differences among the three means, the statistically significant ANOVA was followed by Fisher's LSD post hoc tests (Hayter, 1986), as Fisher's LSD is 8% more accurate than Tukey HSD when analyzing three mean group differences (see Table 16). The difference between marginally observant religious/nonreligious group and high religiously observant group on PPCS score was statistically significant, $t(324) = -11.38$, $p = .003$. Furthermore, there was a statistically significant difference between the high religiously observant and the religiously observant groups, $t(324) = 7.52$, $p = .003$. It can be observed that the level of pornography tended to increase as the frequency of religious service attendance increased.

Table 15

One-Way ANOVA: Attendance of Religious Services and Porn Viewing

Source	Sum of squares	df	Mean square	F	Sig.	η^2
Between groups	5666.6	2	2833.3	5.07**	.007	.030
Within groups	180965.2	324	558.5			
Total	186631.8	326				

Note. η^2 = Eta Squared. **p <. 01.

Table 16

Fisher's LSD: Comparison of Groups Based on the Frequency of Religious Attendance

(I) Religious attendance	(J) Religious attendance	Mean difference (I-J)	Sig.	95% confidence interval Lower bound	Upper bound
Less/far less religious	Religious	-3.86	.270	-10.73	3.01
	High religious	-11.38*	.003	-18.92	-3.84
Religious	Less/far less religious	3.86	.270	-3.01	10.73
	High religious	-7.52*	.013	-13.47	-1.57
High religious	Less/far less religious	11.38*	.003	3.84	18.92
	religious	7.52*	.013	1.57	13.47

Note. *The mean difference is significant at the 0.05 level.

General Internet Use and Pornography Consumption

The frequent internet users' group ($n = 118$, 36.09%) had the highest mean score on the PPCS ($M = 52.91$, $SD = 24.16$). The less frequent internet users' group ($N = 18$, 5.5%) had the lowest mean score on the PPCS ($M = 36.44$, $SD = 17.36$). The moderately frequent internet users' group ($N = 191$, 58.41%, $M = 49.43$, $SD = 23.93$) fell in between the categories mentioned previously. To test the hypothesis that the frequency of general internet use had a significant effect on the level of consumption of pornography, one-way ANOVA was performed. Before conducting the ANOVA, the assumption of normality was evaluated and determined to be satisfied as all groups' distributions were associated with skewness and kurtosis less than $< |2|$ and $< |7.0|$, respectively. Furthermore, the assumption of homogeneity of variances was tested and satisfied based on Levene's test, $F(2, 324) = 2.391$, $p = .093$.

A one-way between-groups ANOVA yielded a statistically significant difference, $F(2, 324) = 3.885$, $p = .022$, $\eta^2 = .023$ (see Table 17). Thus, the null hypothesis of no difference

between the means was rejected, but the frequency of general internet use time accounted for

only 2.3% of the variances in pornography consumption. To further evaluate the differences

between the three means, the statistically significant ANOVA was followed by Fisher's LSD

post hoc tests (Hayter, 1986), as Fisher's LSD is 8% more accurate than Tukey HSD when

analyzing three mean group differences. The difference in the means between less frequent and

moderately frequent internet users on the PPCS score was statistically significant, $t(324) = -12.99$, $p = .027$. There was also a statistically significant difference between less frequent and

frequent internet users on PPCS score, $t(324) = -16.47$, $p = .006$ (see Table 18). The level of

pornography tended to increase as internet use time increased.

Table 17

One-Way ANOVA: Internet Use and Porn Viewing

Source	Sum of squares	df	Mean square	F	Sig.	η^2
Between groups	4371.275	2	2185.638	3.885*	.022	.023
Within groups	182260.529	324	562.532			
Total	186631.804	326				

Note. η^2 = Eta Squared. *p <. 05.

Table 18

Fisher's LSD Post Hoc Test: The Difference of the PPCS Scores Among Internet Users

(I) Internet use time	(j) Internet use time	Mean difference (i-j)	*SE*	Sig.	95% confidence interval Lower bound	Upper bound
Less frequent	Moderately frequent	-12.99*	5.85	.027	-24.49	-1.49
	Frequent	-16.47*	6.00	.006	-28.28	-4.66
Moderately frequent	Less frequent	12.99*	5.85	.027	1.49	24.49
	Frequent	-3.48	2.78	.211	-8.94	1.98
Frequent	Less frequent	16.47*	6.00	.006	4.66	28.28
	Moderately frequent	3.48	2.78	.211	-1.98	8.94

Note. *. The mean difference is significant at the 0.05 level.

First Exposure to Internet Pornography and the PPCS Scores

The descriptive statistics associated with the degree of problematic pornography consumption across various age groups of first exposure to pornography are reported in Table 19. Participants who had their first exposure to pornography when they were less than 10 years old ($n = 34$, 10.65%) had the highest mean score on the PPCS ($M = 61.35$, $SD = 27.42$). Participants who had the first exposure to internet pornography when they were above 18 years ($n = 63$, 12.53%) had the lowest mean on the PPCS ($M = 42.05$, $SD = 23.18$). To test the hypothesis that the first exposure to internet pornography had a significant effect on the level of consumption of pornography, one-way ANOVA was performed. Before conducting the ANOVA, the assumption of normality was evaluated and determined to be satisfied as all groups' distributions were associated with skewness and kurtosis less than $< |2|$ and $<| 7.0|$, respectively. Furthermore, the assumption of homogeneity of variances was tested and satisfied based on Levene's F test, $F(4, 314) = .472$, $p = .756$.

Table 19

Descriptive Statistics: Various Age Groups and First Exposure to Internet Pornography

First exposure to pornography	n	Mean	*SD*	*SE*	95% CI	
					Lower bound	Upper bound
Less than 10 years	34	61.35	27.42	4.70	51.78	70.92
10–12 years	89	53.58	23.90	2.53	48.55	58.62
12–15 years	104	50.64	22.69	2.23	46.23	55.06
15–18 years	52	45.25	20.94	2.90	39.42	51.08
Above 18 years	40	42.05	23.18	3.66	34.64	49.46
Total	319	50.65	23.83	1.33	48.02	53.27

Note. I excluded those participants ($n = 8$) who reported that they were never exposed to internet pornography from this statistical analysis.

A one-way between-groups ANOVA yielded a statistically significant difference, $F(4, 314) = 4.183$, $p = .003$, $\eta^2 = .051$ (see Table 20). Thus, the null hypothesis of no difference between the means was rejected. The age group of first exposure to pornography accounted for small percentage (5.1%) of the variance in the scale of problematic pornography consumption. The statistically significant ANOVA was followed by Tukey HSD post hoc tests to further evaluate the differences between the mean scores of the five groups. As can be seen in Table 21, only two of the 10 comparisons were statistically significant ($p < .05$). The problematic level of pornography use tended to increase as the age of first exposure to pornography decreased.

Table 20

One-Way ANOVA: First Exposure to Internet Pornography and the PPCS Scores

	Sum of squares	df	Mean square	F	Sig.	η^2
Between groups	9135.8	4	2283.95	4.183[**]	.003	.051
Within groups	171458.9	314	546.05			
Total	180594.7	318				

Note. η^2 = Eta Squared. [**]$p < .01$.

Table 21

Tukey HSD Post Hoc Test: First Exposure to Internet Porn and the PPCS Scores

				95% CI	
(I) First exposure to internet porn	(J) First exposure to internet porn	Mean difference (I-J)	Sig.	Lower bound	Upper bound
Less than 10 years	10–12 years	7.77	.467	-5.16	20.69
	12–15 years	10.71	.141	-1.96	23.37
	15–18 years	16.10[*]	.017	1.96	30.24
	Above 18 years	19.30[*]	.004	4.35	34.26
10–12 years	Less than 10 years	-7.77	.467	-20.69	5.16
	12–15 years	2.94	.907	-6.32	12.20
	15–18 years	8.33	.248	-2.86	19.53
	Above 18 years	11.53	.074	-.67	23.74
12–15 years	Less than 10 years	-10.71	.141	-23.40	1.96
	10–12 years	-2.94	.907	-12.20	6.32
	15–18 years	5.39	.654	-5.49	16.28
	Above 18 years	8.59	.280	-3.33	20.52
15–18 years	Less than 10 years	-16.10[*]	.017	-30.24	-1.96
	10–12 years	-8.33	.248	-19.53	2.86
	12–15 years	-5.39	.654	-16.28	5.49
	Above 18 years	3.20	.966	-10.28	16.68
Above 18 years old	Less than 10 years	-19.30[*]	.004	-34.26	-4.35
	10–12 years	-11.53	.074	-23.73	.67
	12–15 years	-8.59	.280	-20.52	3.33
	15v18 years	-3.20	.966	-16.68	10.28

Note. CI = Confidence Interval.

Overall, the following conclusions can be drawn from the statistical analyses associated with the first research question. Five demographic variables—participants' employment status, birthplace country, the importance of religious faith, drug consumption, and alcohol consumption—showed no statistically significant differences between comparison groups on their PPCS scores. However, the remaining seven demographic variables—age, gender, education level, marital status, attendance of religious services, the first age of early exposure to internet pornography, and general internet use—indicated statistically significant differences between the comparison groups on the level of internet pornography consumption. Specifically, participants who were uncoupled (single), young adults, men, had a low education level, had a high level of internet use, had early exposure to pornography, and who attended religious services frequently were significantly more likely to consume internet pornography than others in their demographic category. However, statistical significance did not necessarily translate into practical significance.

Research Question 2—Pornography Use, Loneliness, and Attachment

Research Question 2 asked: Is there a significant association between internet pornography use, loneliness, and attachment patterns among Asian Indian American young adults and adults? To answer the second research question, I used Pearson correlation (including a partial correlation), multiple regression, and one-way MANOVA to examine the relationships among scores of pornography consumption use, loneliness, and the dimensions of adult attachment styles. The composite scores of the RQ and the RSQ were used to assess the two dimensions of adult attachment styles: (a) attachment anxiety and (b) attachment avoidance. Attachment anxiety was calculated by *negative self-models* (fearful plus preoccupied) minus *positive self-models* (secure plus dismissive). In this calculation, higher scores mean higher

attachment anxiety and negative self-models. Attachment avoidance was calculated by *negative other models* (e.g., fearful plus dismissive) minus *positive other models* (e.g., secure plus preoccupied). A higher score means higher attachment avoidance and negative other models.

Correlations Between Pornography, Loneliness, and Attachment Dimensions

The assumptions of correlation, such as the scale of measurement (continuous variables), linearity, and homoscedasticity were met. The assumption of normality was met for attachment anxiety ($p = .270$), attachment avoidance ($p = .190$), and UCLALS3 ($p = .211$), as per the Shapiro-Wilk test. Although the assumption of normality was not met for the PPCS score ($p < .001$), the large sample size of this study ($n = 327$) alleviated the problem of violation of the assumption of normality to a great extent.

Attachment Dimensions and Loneliness. A Pearson correlation coefficient was computed to assess the linear relationship between loneliness and attachment anxiety. There was a positive and strong correlation between the two variables ($r(327) = .628$, $p < .01$; see Table 22); that is, an increase in loneliness was correlated with an increase in the level of attachment anxiety. As $r^2 = .39$ ($r = .628$), only 39% of the total variation in loneliness (y) can be explained by the linear relationship between attachment anxiety (x) and loneliness (y) scores. As a result, 61% of the total variation in loneliness remains unexplained.

Furthermore, loneliness and attachment avoidance were significantly and positively related to each other ($r(327) = .446$, $p < .01$; see Table 22). However, the association between loneliness and attachment avoidance was only moderate as $r^2 = 0.20$ ($r = .446$); that is, only 20% of the total variation in loneliness (y) can be explained by the linear relationship between attachment avoidance (x) and loneliness (y) scores. Other correlations in this study were weak or nonsignificant. For example, loneliness and porn consumption were significantly and positively

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related to each other, $r(327) = .224$, $p < .001$, but the association between these variables was weak ($r^2 = 0.050$; see Table 22). On the other hand, the relationship between attachment avoidance and porn viewing was negative and statistically nonsignificant, $r(327) = -.022$, $p = .697$ (see Table 22).

Table 22

Correlations Between Attachment Dimensions, the PPCS and the UCLALS3

		PPCS	Anxiety	Avoidance	UCLALS3
PPCS total	Pearson correlation	1	.231**	-.022	.224**
	Sig. (2-tailed)		<.001	.697	<.001
	N	327	327	327	327
Attachment anxiety	Pearson correlation	.231**	1	.086	.628**
	Sig. (2-tailed)	<.001		.120	<.001
	N	327	327	327	327
Attachment avoidance	Pearson correlation	-.022	.086	1	.446**
	Sig. (2-tailed)	.697	.120		<.001
	N	327	327	327	327
UCLALS3 total	Pearson correlation	.224**	.628**	.446**	1
	Sig. (2-tailed)	<.001	<.001	<.001	
	N	327	327	327	327

Note. ** indicates correlation is significant at the 0.01 level (2-tailed).

Partial Correlation. Pearson correlation showed a strong association between attachment anxiety and the score of UCLALS3 ($r = .628$; see Table 22). Partial correlation was used in this study to examine the association between the scores of attachment anxiety and UCLALS3 while controlling for PPCS and attachment avoidance scores. The significance of partial correlation was tested to see if there was a significant relationship between attachment anxiety and the experience of loneliness after controlling for the effects of porn consumption and attachment avoidance. There was a strong, positive, partial correlation between the scores of

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loneliness and the level of attachment anxiety, controlling for the PPCS and attachment avoidance scores, $r(323)= .640, p = <.001$ (see Table 23). Results of the test for the significance of the partial correlation indicated that controlling for PPCS score and attachment avoidance had little effect on the strength of the relationship between loneliness and attachment anxiety.

Table 23

Partial Correlation: Attachment Anxiety and UCLALS3

Control variables			Anxiety	UCLALS3
Attachment avoidance and PPCS	Anxiety	Correlation	1.0	.640
		Significance (2-tailed)	.	<.001**
		df	0	323
	UCLALS3	Correlation	.640	1.0
		Significance (2-tailed)	<.001**	.
		df	323	0

Note. ** indicates correlation is significant at the 0.01 level

Overall, the analyses revealed both loneliness and porn viewing had positive associations with attachment anxiety. Although attachment avoidance was not associated with pornography consumption, it was moderately associated with the experience of loneliness. The two attachment dimensions were not correlated to each other ($r = .089$).

Multiple Linear Regression

A multiple linear regression was used to investigate the degree to which the level of loneliness, attachment anxiety, attachment avoidance, and other significant demographic variables (i.e., age group, gender, marital status, education, frequency of religious attendance, internet use, and age of first internet pornography exposure) would predict the score of PPCS among Asian Indian young adults and adults. The assumptions of multiple linear regression (i.e.,

linearity, normality, homoscedasticity, and absence of multicollinearity) were examined using visual inspection of P-P plots, histograms, residual plots, and review of collinearity diagnostics. Results revealed the data did not violate the assumptions of multiple linear regression except normality. However, the large sample size of this study ($N = 327$) alleviated the problem of violation of the assumption of normality to a great extent. The standard residual was close to the normal range (-2.62, 3.22).

As the value of R^2 was .320 ($R = 0.566$), I concluded the model fit was strong. The predictor variables together explained 32% of the variability of the outcome variable PPCS. The regression model was found to be significant, $F(10, 305) = 14.365$, $p < .001$. The fitted regression model was: PPCS score = 51.467 + .452 (level of loneliness) + .792 (level of attachment anxiety) – .286 (level of attachment avoidance) + 2.811 (age) – .18.039 (gender) – 4.941 (marital status) – 3.062 (educational level) + 6.336 (frequency of religious attendance) + 3.056 (general internet use) – 3.099 (age of first exposure to porn; see Table 24).

Table 24

Multiple Linear Regression: Factors Predicting the PPCS Score

Model	Unstandardized coefficients		Standardized coefficients		
	B	*SE*	Beta	*t*	Sig.
(Constant)	51.47	12.50		4.12***	<.001
UCLALS3 total	.45	.17	.193	2.68**	.008
Attachment anxiety	.79	.35	.146	2.26*	.025
Attachment avoidance	-.29	.30	-.052	-.94	.347
Age	2.81	3.17	.059	.89	.377
Gender	-18.04	2.36	-.373	-7.70***	<.001
Marital status	-4.94	3.19	-.092	-1.60	.122
Education	-3.06	1.50	-.118	-2.04*	.042
Religious attendance	6.34	1.68	.182	3.78***	<.001
Internet use	3.06	2.11	.071	1.45	.148
First exposure to porn	-3.10	1.06	-.152	-2.90**	.004

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

Participants' PPCS scores increased on average by an amount equal to 0.452 level when the loneliness increased, keeping the other predictor variables fixed. Keeping the other variables fixed, similar conclusions were drawn as follows: (a) participants' PPCS score increased on average by 0.792 for a 1-unit increase in attachment anxiety; (b) a decrease on average by 0.286 for a 1-unit increase in attachment avoidance; (c) an increase on average by 2.811 when the calculation of the score moved from young adults to adults; (d) a decrease on average by 18.039 when the calculation of the score shifted from male to female; I a decrease on average by 4.941 when the calculation moved from single (never married) to married; (f) decrease on average by 3.062 when education moves up to the next level; (g) an increase on average by 6.336 when the frequency religious attendance increased; (h) an increase on average by 3.056 when the

frequency of general internet use increased; (i) and a decrease on average by 3.099 the first

exposure to internet pornography increased in age (see Figure 5).

Figure 5

Residual Plots in the Multiple Regression Model

Dependent Variable: PPCP
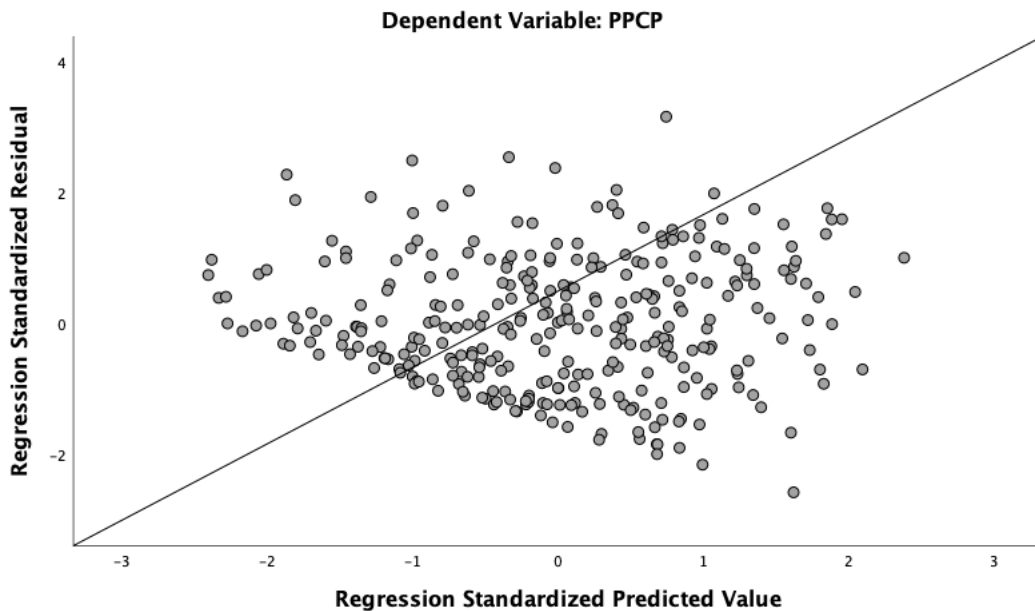
Note. Residual plots display the residual values on the y-axis and fitted values, or another variable, on the

x-axis.

There were six statistically significant predictor variables: (a) level of loneliness ($t =$

2.682, $p = .008$), (b) attachment anxiety ($t = 2.259$, $p = .008$), (c) gender ($t = -7.661$, $p < .001$),

(d) education ($t = -2.045$, $p = .042$), I frequency of religious attendance ($t = 3.780$, $p < .001$) and

(f) age of first exposure to pornography ($t = -2.914$, $p = .004$). The predictor variables (i.e.,

attachment avoidance, age, marital status, and internet use) did not significantly contribute to the prediction of the level of pornography.

One-Way MANOVA

I used one-way MANOVA to determine if the hypothesis that there would be one or more mean differences among the four categories of attachment styles (i.e., secure, fearful, preoccupied, and dismissive) on the linear combination of the scores of loneliness and pornography consumption should be accepted or rejected. The assumptions of MANOVA— linearity, measurement of scales, sufficient sample size, multivariate normality (Mahalanobis distance = 9.583), homogeneity of covariance matrices, and absence of multicollinearity—were examined. The data did not violate the assumptions except the assumption of the homogeneity of covariance matrices as revealed by Box's Test of Equality of Covariance Matrices ($p =.004$). As there was a violation of the assumption of homogeneity of covariance matrices, I used Pillai's V instead of Wilk's Λ for the statistical interpretation.

Results of the one-way MANOVA yielded a statistically significant difference among the categories of attachment patterns on the combined dependent variables, Pillai's V = .360, $F(6, 646) = 23.60$, $p < .001$, $\eta^2 =.972$, observed power = 1.00 (see Table 25). Based on these results, evidence was sufficient to reject the null hypothesis and conclude young adults' and adults' combined scores of loneliness and pornography consumption as measured by the UCLALS3 and the PPCS, respectively, differed significantly by the type of attachment patterns they have. The effect size was large, and the observed power was 1.00. Observed (or post-hoc power) is the statistical power of a test based on the effect size estimate from the data (Lakens, 2014).

Table 25

One-Way MANOVA: Attachment Patterns, the UCLALS3, and the PPCS

Effect		Value	F	Hypothesis df	Error df	Sig.	η^2	Observed power
Intercept	Pillai's Trace	.97	5526.6***	2	322	<.001	.972	1.000
	Wilks' Lambda	.03	5526.6***	2	322	<.001	.972	1.000
	Hotelling's Trace	34.33	5526.6***	2	322	<.001	.972	1.000
	Roy's Largest Root	34.33	5526.6***	2	322	<.001	.972	1.000
Attachment pattern	Pillai's Trace	.36	23.6***	6	646	<.001	.180	1.000
	Wilks' Lambda	.65	25.9***	6	644	<.001	.194	1.000
	Hotelling's Trace	.53	28.2***	6	642	<.001	.209	1.000
	Roy's Largest Root	.50	54.0***	3	323	<.001	.334	1.000

Note. η^2 = Eta Squared. ***p <. 001.

When the effects of dependent variables were analyzed independently, various attachment patterns had significant differences on the PPCS score, $F(3, 323) = 5.779$, $p <. 001$, $\eta^2 = .051$. There were also statistically significant differences of attachment patterns on loneliness score, $F(3, 323) = 53.57$, $p < .001$, $\eta^2 = .33$. The statistically significant ANOVA was followed up with Tukey HSD post hoc tests to further evaluate the differences between the mean scores of the four groups. On the PPCS score, there was a statistically significant difference between secure and preoccupied attachment patterns, $t(326) = -13.86$, $p < .001$ (see Table 26). On the UCLALS3 score, as seen in Table 26, five of the six comparisons were statistically significant ($p < .05$). To conclude, participants' levels of porn consumption and loneliness differed significantly depending on their attachment styles. Participants with secure attachment styles tended to consume pornography at a significantly lower rate than those with preoccupied attachment styles.

Table 26

Tukey HSD Post Hoc Test: One-Way MANOVA Results

Dependent variable	(I) Attachment pattern	(J) Attachment pattern	Mean difference (I-J)	Sig.	95% CI Lower bound	Upper bound
PPCS	Secure	Fearful	-5.97	.341	-15.20	3.26
		Preoccupied	-13.86*	<.001	-23.01	-4.71
		Dismissive	-2.07	.945	-11.70	7.57
	Fearful	Secure	5.97	.341	-3.26	15.20
		Preoccupied	-7.89	.132	-17.25	1.47
		Dismissive	3.90	.735	-5.94	13.74
	Preoccupied	Secure	13.86*	<.001	4.71	23.01
		Fearful	7.89	.132	-1.71	17.25
		Dismissive	11.79*	.011	2.03	21.55
	Dismissive	Secure	2.07	.945	-7.57	11.70
		Fearful	-3.90	.735	-13.74	5.94
		Preoccupied	-11.79*	.011	-21.55	-2.03
UCLALS3	Secure	Fearful	-14.92*	<.001	-18.24	-11.61
		Preoccupied	-12.78*	<.001	-16.07	-9.49
		Dismissive	-8.51*	<.001	-11.97	-5.05
	Fearful	Secure	14.92*	<.001	11.61	18.24
		Preoccupied	2.14	.355	-1.22	5.50
		Dismissive	6.41*	<.001	2.88	9.95
	Preoccupied	Secure	12.78*	<.001	9.49	16.07
		Fearful	-2.14	.355	-5.50	1.22
		Dismissive	4.27*	.010	.76	7.78
	Dismissive	Secure	8.51*	<.001	5.05	11.97
		Fearful	-6.41*	<.001	-9.95	-2.88
		Preoccupied	-4.27*	.010	-7.78	-.76

Note. *The mean difference is significant at the 0.05 level.

In short, the following conclusions can be drawn from analyses regarding the second research question: (a) the level of participants' loneliness had a strong, significant, and positive correlation with attachment anxiety—when participants' loneliness increased, so did their attachment anxiety; (b) the multiple regression analyses revealed that the predictor variables—

attachment anxiety, gender, level of loneliness, education, first exposure to internet pornography, and attendance of religious services—contributed significantly to the prediction of the level of pornography consumption; and (c) the results of one-way MANOVA indicated young adults' and adults' combined scores of loneliness and pornography consumption as measured by the UCLALS3 and the PPCS, respectively, differed significantly in their attachment patterns; that is, depending on the attachment styles of the participants, their levels of porn consumption and loneliness varied considerably. Participants with insecure attachment styles (i.e., fearful, preoccupied, and dismissive) tended to consume pornography and experience loneliness significantly more than those with secure attachment styles.

Research Question 3—Loneliness, Attachment Style, and Pornography Use

Research Question 3 asked: How do loneliness and attachment style affect the level of internet pornography use among the U.S.-born and immigrant Asian Indian American young adults and adults? I used the structural equation model (SEM) to answer the third research question. Recently, the SEM analyses have become common in psychological research (Estrada et al., 2018) to explain complex sequential relationships among several analytical variables. As I focused solely on the structural (path) relation between variables using observed (manifest) variables, I applied a specific form of structural analysis called path analysis, which specifies a model and relationship among variables. I used path analysis to examine the total, direct, and indirect effects of attachment anxiety and attachment avoidance (i.e., dimensional properties of attachment styles) on loneliness and porn consumption. I used the attachment theory of Bowlby (1969) and Ainsworth (1973) to explain these dimensional factors of attachment styles. Griffith's (2005) addiction model was used to elucidate the problematic level of pornography consumption. Through path analysis, I attempted to identify a conceptual link between these two theoretical

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models and develop a single, integrated model. The model fit and some assumptions were examined before conducting path analysis.

Model Fit Indices

Structural equation models consider the question of model fit essential before analyzing the parameter estimates (Peugh & Feldon, 2020). As it was a "just identified" model ($df = 0$; Raykov et al., 2013), the model fit could not be accurately assessed by calculating the Chi-square value ($X^2 = .000$). Therefore, I used descriptive model fit indices such as Comparative Fit Index (CFI; Bentler, 1990) and Root Mean Square Error of Approximation (RMSEA; Steiger & Lind, 1980) to assess the model fit. CFI is robust against nonparsimonious models and less affected by sample size (Peugh & Feldon, 2020). RMSEA assesses how far a hypothesized model is from a perfect model (Xia & Yang, 2019).

I used a commonly acceptable rule suggested by Marcoulides and Yuan's (2017) research to interpret the strength of model fit when using CFI and RMSEA: ≤ 0.882 = poor, $0.882–0.904$ = mediocre, $0.904–0.935$ = fair, $0.935–0.983$ = close, ≥ 0.983 = excellent for CFI and ≥ 0.114 = poor, $0.095–0.114$ = mediocre, $0.067–0.095$ = fair, $0.033–0.067$ = close, ≤ 0.033 = excellent for RMSEA. Although RMSEA (.380) showed a poor model fit, CFI (1.0) stood for an excellent model fit (Marcoulides & Yuan, 2017) in the current study. Besides, the Normed Fit Index (NFI; Bentler & Bonett, 1980), which follows a similar calculation rule of CFI (i.e., NFI $\geq$ .90 = good fit)**,** also provided an excellent model fit (1.0). An advantage of NFI is that it is not affected by the number of parameters/variables in the model. Analysis of different model fit indices, absence of missing data, and a large sample size provided an acceptable model fit to calculate the parameter estimates in the current path analysis.

SEM Assumptions Testing

The SEM assumptions tested for the current study were univariate normality, absence of multivariate outliers, linearity, absence of missing data, homoscedasticity, and absence of multicollinearity. There was no missing data in the sample. Multicollinearity was tested and satisfied by calculating variance inflation factors (VIFs) for each variable using the cutoff score of 10 (Kline, 2016), and variables were found to be less than 10. Influential multivariate outliers were assessed by examining Cook's distances (Di; Gao et al., 2015). The cutoff value was 1.0, and no Di values were found above 1.0 and met the assumption of the absence of influential outliers. The other assumptions of SEM, such as linearity, homoscedasticity, and univariate normality, were examined using visual inspection of P-P plots, histograms, residual plots, skewness, and kurtosis statistics. Results revealed the data did not violate any of the assumptions.

Calculating Parameter Estimates: First Assumption

The path analysis was used to find a few underlying theoretical assumptions. The first assumption was that there would be a statistically positive significant relationship between the dimensions of attachment styles (i.e., attachment anxiety and attachment avoidance) on the level of pornography consumption when mediated by loneliness. The exogenous variables were attachment anxiety and attachment avoidance, and the endogenous variables were loneliness and the level of porn consumption. Figure 6 portrays the model created in SPSS and AMOS to test the stated assumption. The standardized path coefficients (i.e., partial regression coefficients) are portrayed in the diagram so readers can make inferences about the relative strength of relationships among variables. Table 27 describes the unstandardized path coefficients for the

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relationships between attachment dimensions and porn consumption when mediated by loneliness among Asian Indian young adults and adults ($N = 327$).

Figure 6

Standardized Path Coefficients Diagram for First Assumption
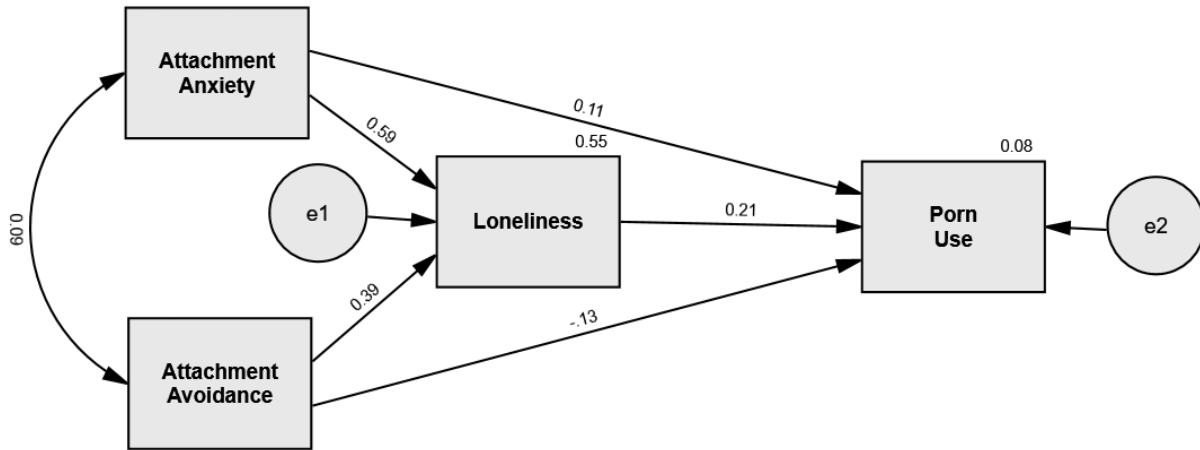
Note. Path analysis showed the association between two dimensions of attachment styles (i.e., attachment anxiety and attachment avoidance) and the problematic level of pornography consumption when mediated by the experience of loneliness among the participants.

Table 27

Unstandardized Path Coefficients for First Assumption

	Paths		Estimate	S.E.	C.R.	p
Loneliness	←-	Anxiety	1.373***	.086	15.927	<.001
Loneliness	←-	Avoidance	.929***	.088	10.587	<.001
Porn	←-	Anxiety	.582	.385	1.514	.130
Porn	←-	Avoidance	-.690*	.340	-2.028	.043
Porn	←-	Loneliness	.496**	.185	2.678	.007

Note. CR = Critical Ratio (CR = Estimate/Standard Error). *$p <. 05$, **$p <. 01$, ***$p <. 001$.

Regression Weights. Four of the five regression weights among participants yielded significant positive results. Attachment anxiety ($B = 1.373$, $p < .001$) and attachment avoidance ($B = .929$, $p < .001$) were significantly related to loneliness. However, attachment anxiety was not significantly related to porn consumption ($B = .582$, $p = .130$), and attachment avoidance barely had a significant relationship to porn consumption ($B = -.690$, $p = .043$). There was a significant relationship between loneliness and porn consumption ($B = .496$, $p = .007$).

Total Effects and Indirect Effects Among Variables. While analyzing the indirect and total effects among variables, the path between attachment anxiety and porn consumption was statistically significant. For example, the indirect effect of attachment anxiety on porn consumption, when mediated by the experience of loneliness, was statistically significant ($p = .009$). The indirect effect of attachment anxiety on porn consumption was larger ($B = .126$, $p < .01$) than the indirect effect of attachment avoidance on porn consumption ($B = .084$, $p < .01$). Besides, the total effect of attachment anxiety on porn consumption (flowing through loneliness) was also statistically significant ($B = .234$, $p = .019$). In contrast, the total effect of attachment avoidance on porn consumption was not statistically significant ($B = -.042$, $p = .379$).

Second Assumption

For the first assumption, the exogenous variables' effect on the endogenous variable was weak, although statistically significant, when men and women were taken together (see Table 28). So, I decided to analyze the path coefficients separately for men and women to investigate if it would impact the strength of the association between the exogenous and endogenous variables. Moreover, while answering the first research question, it was found that men and women mean score differences on the level of pornography were statistically and practically significant, $t(170) = 5.729$, $p < .001$, Cohen's $d = .88$ (see Table 11). Besides, gender was also a significant

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predictor in the multiple linear regression ($t = -7.980$, $p < .001$; see Table 24). Therefore, I

assumed there would be a statistically positive significant relationship between the dimensions of

attachment styles (i.e., attachment anxiety and attachment avoidance) on the level of

pornography consumption when mediated by loneliness based on gender. However, as Table 28

suggests, among women ($n = 139$), the effects of attachment dimensions on porn consumption,

when mediated by the experience of loneliness, were not statistically significant ($p > .05$).

Table 28

Unstandardized Path Coefficients for Second Assumption

	Path		Estimate	*S.E.*	C.R.	*p*
Loneliness	←-	Anxiety	1.362***	.134	10.16	<.001
Loneliness	←-	Avoidance	.884***	.131	6.77	<.001
Porn	←-	Avoidance	-.522	.418	-1.25	.211
Porn	←-	Anxiety	.208	.491	.42	.673
Porn	←-	Loneliness	.278	.236	1.18	.238

Note. CR = Critical Ratio. Among women, the regression weights for the relationship between attachment

dimensions and porn were not statistically significant ($p > .05$). ***$p < .001$.

On the contrary, among men, the effects of attachment anxiety on porn consumption were

statistically significant ($p < .05$). Table 29 shows the unstandardized path coefficients for the

relationships between attachment dimensions and porn consumption when mediated by

loneliness among men ($n = 185$). The standardized path coefficients (i.e., partial regression

coefficients) for men are depicted in the diagram (see Figure 7).

Table 29

Unstandardized Path Coefficients for Second Assumption

	Path		Estimate	*S.E.*	C.R.	*p*
Loneliness	←-	Anxiety	1.371***	.113	12.09	<.001
Loneliness	←-	Avoidance	.940***	.119	7.87	<.001
Porn	←-	Avoidance	-.545	.440	-1.24	.215
Porn	←-	Anxiety	1.205*	.484	2.49	.013
Porn	←-	Loneliness	.747**	.235	3.18	.001

Note. CR = Critical Ratio. Among men, the regression weights for the relationship between attachment

dimensions and porn were found to be statistically significant ($p < .05$). *$p <. 05$, **$p <. 01$, ***$p <. 001$.

Figure 7

Standardized Path Coefficients Diagram for Second Assumption
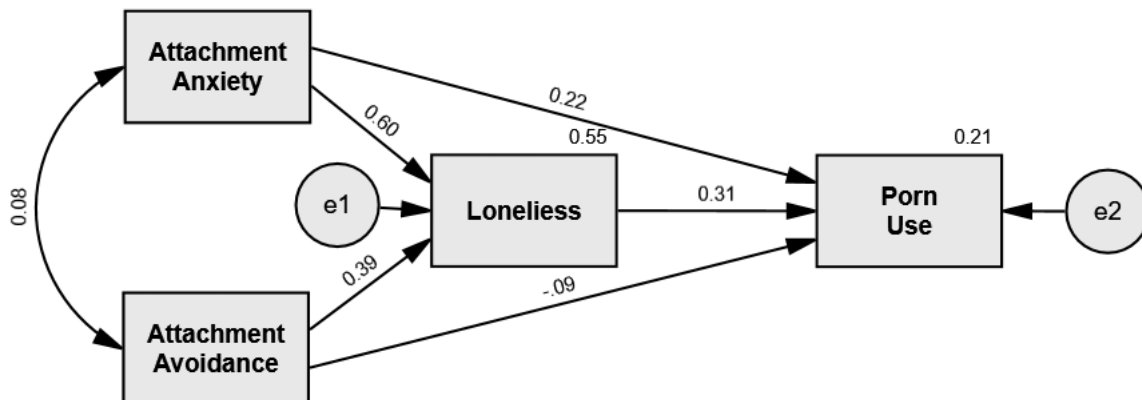
Note. The association between two dimensions of attachment styles (i.e., attachment anxiety and

attachment avoidance) and the problematic level of pornography consumption when mediated by the

experience of loneliness among men.

Regression Weights. Four of the five regression weights among men yielded significant

positive results ($n = 185$). Attachment anxiety ($B = 1.371$, $p < .001$) and attachment avoidance (B

= .940, $p < .001$) were significantly related to loneliness. Attachment anxiety was also significantly related to porn consumption ($B = 1.205$, $p = .013$). However, attachment avoidance did not have a statistically significant relationship to porn consumption ($B = -.545$, $p = .215$). There was a significant relationship between loneliness and porn consumption ($B = .747$, $p = .001$).

Total Effects and Indirect Effects Among Variables. While analyzing the direct, indirect, and total effects among variables, the paths between attachment anxiety and porn consumption became statistically significant. The indirect effect of attachment anxiety on porn consumption, when mediated by the experience of loneliness, was statistically significant ($p = .008$). Using standardized scores, the indirect effect of attachment anxiety on porn consumption was larger ($B = .186$, $p < .01$) than the effect of attachment avoidance on porn consumption ($B=.121$, $p <. 01$). Besides, the total effect of attachment anxiety on porn consumption (flowing through loneliness) was also statistically significant ($B = .406$, $p = .002$). In contrast, the total effect of attachment avoidance on porn consumption (flowing through loneliness) was not statistically significant ($B = .027$, p $= .722$). Similarly, the direct effect of attachment anxiety on porn consumption was statistically significant ($B = .219$, $p =.023$), whereas the direct effect of attachment avoidance on porn consumption was not statistically significant ($B = -.094$, $p =.198$).

Third Assumption

As previously elaborated in the literature review, a few studies have explored the bidirectional relationship between loneliness and pornography viewing (Butler et al., 2018; Thombs & Osborn, 2013). Therefore, I assumed there would be a statistically significant positive relationship between the dimensions of attachment styles (i.e., attachment anxiety and attachment avoidance) on the experience of loneliness when mediated by porn consumption. The

SEM assumptions were examined and found satisfied. The standardized path coefficients were depicted in the diagram (see Figure 8). Table 30 describes the unstandardized path coefficients for the relationships between attachment dimensions and porn consumption when mediated by loneliness among Asian Indian young adults and adults (*n* = 327).

Figure 8

Standardized Path Coefficients Diagram for Third Assumption
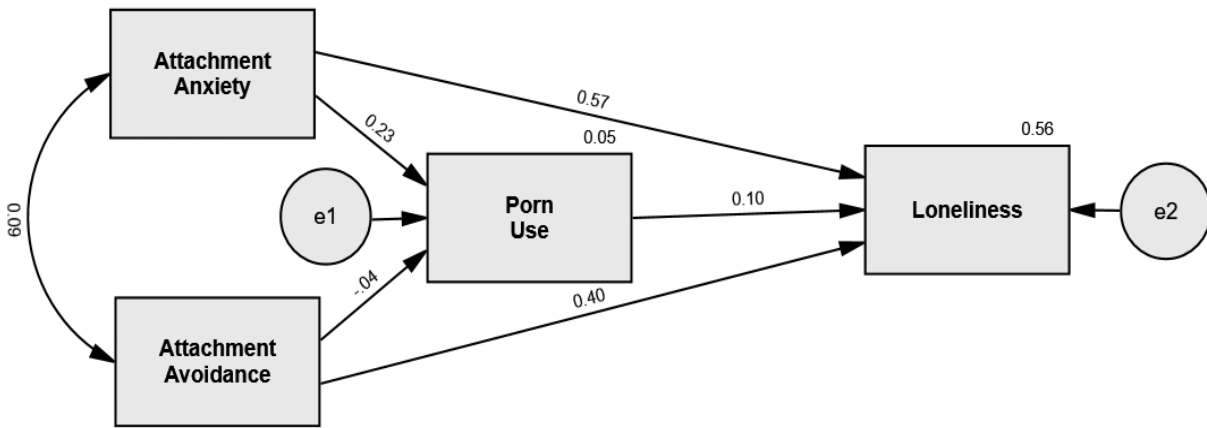
Note. The association between two dimensions of attachment styles (i.e., attachment anxiety and attachment avoidance) and loneliness when mediated porn consumption among the participants.

Table 30

Unstandardized Path Coefficients for Third Assumption

	Path		Estimate	S.E.	C.R.	*p*
Porn	←-	Anxiety	1.263***	.292	4.33	<.001
Porn	←-	Avoidance	-.229	.297	-.77	.440
Loneliness	←-	Anxiety	1.319***	.088	15.03	<.001
Loneliness	←-	Avoidance	.939***	.087	10.81	<.001
Loneliness	←-	Porn	.043**	.016	2.68	.007

Note. CR = Critical Ratio. The regression weights for the relationship between attachment dimensions and loneliness were statistically significant ($p < .05$). **$p <. 01$, ***$p <. 001$.

Regression Weights. Four of the five regression weights yielded significant positive results among participants ($n = 185$). Attachment anxiety was significantly related to porn consumption ($B = 1.263$, $p < .001$). However, attachment avoidance did not have a statistically significant relationship to porn consumption ($B = -.229$, $p = .440$). Attachment anxiety ($B = 1.319$, $p < .001$) and attachment avoidance ($B = .939$, $p < .001$) were significantly related to loneliness. There was a significant relationship between pornography consumption and loneliness ($B = .043$, $p = .007$).

Total Effects and Indirect Effects Among Variables. While analyzing the indirect and total effects among variables, the paths between attachment anxiety and loneliness were statistically significant. The indirect effect of attachment anxiety on loneliness, when mediated by the level of porn use, was statistically significant ($B = .02$, $p = .006$). However, the indirect effect of attachment avoidance on loneliness ($B = -.004$, $p = .252$) was not statistically significant. Besides, the total effect of attachment anxiety on loneliness (flowing through porn consumption; $B = 1.373$, $p = .002$) and the total effect of attachment avoidance on loneliness were

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statistically significant ($B = .93$, $p = .722$). Similarly, the direct effect of attachment anxiety on loneliness ($B = .571$, $p = .001$) and the direct effect of attachment avoidance on loneliness were statistically significant ($B = .399$, $p = .009$).

Overall, the results show a consistent positive relationship between attachment anxiety and pornography when mediated by loneliness. Furthermore, a significantly strong statistical relationship existed between attachment anxiety and loneliness when mediated by porn viewing. Hence, the statistical results of all assumptions underlined the bidirectional relationship between porn consumption and loneliness. Although the path between attachment anxiety and porn viewing was not significant among women, the relationship between the variables was robust among men. Even though attachment avoidance showed a significant relationship with porn consumption on a few occasions, the results were inconsistent.

Summary of Quantitative Results

The purpose of the quantitative phase of this explanatory mixed methods design was to examine the prevalence of internet pornography consumption across various demographic variables among Asian Indian American young adults and adults in the United States and identify internet pornography's relationship with loneliness and attachment styles. Three research questions guided the statistical analyses in the quantitative phase of this study. The statistical analyses associated with the first research question demonstrated that seven demographic variables (i.e., age, gender, education level, marital status, attendance of religious services, the first age of early exposure to internet pornography, and general internet use) indicated statistically significant differences between the comparison groups on the level of internet pornography consumption. Precisely, participants who were uncoupled (single), young adults, men, had a low education level, had a high level of internet use, had early exposure to

pornography, and who attended religious services frequently were significantly more likely to consume internet pornography than others in their demographic category.

Pearson correlation coefficients, partial correlations, multiple regression, and one-way MANOVA were used to draw conclusions about the second research question. First, I found a strong, significant, and positive correlation between loneliness and attachment anxiety; when participants' loneliness increased, so did their attachment anxiety. Second, I identified six predictor variables (i.e., attachment anxiety, gender, level of loneliness, education, first exposure to internet pornography, and attendance of religious services) that contributed significantly to the prediction of the level of pornography consumption. Third, the results of one-way MANOVA indicated, depending on the attachment styles of the participants, levels of porn consumption and loneliness differed significantly. Participants with insecure attachment styles (i.e., fearful, preoccupied, and dismissive) tended to consume pornography and experience loneliness significantly more than those with secure attachment styles.

Path analysis, a form of structural equation modeling, was used to identify the paths between the level of pornography consumption, loneliness, and attachment dimensions (i.e., attachment anxiety and attachment avoidance) associated with the third research question. The results showed a significant path between attachment anxiety and pornography when mediated by loneliness. Furthermore, a significant path also existed between attachment anxiety and loneliness when mediated by porn viewing. Hence, the statistical results underlined the bidirectional relationship between porn consumption and loneliness in participants with attachment anxiety. Having analyzed the research questions with their results in the quantitative phase of this mixed methods design, I focus now on the outcome of the qualitative phase of the

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study. Providing detailed initial quantitative results with an additional qualitative phase of the study provides a complete picture of the research problem.

Qualitative Analyses of Data

In the second phase of data analysis of this mixed methods design, I present the qualitative findings related to the participants' experience of internet pornography consumption based on their interview data. This phase was designed to examine how the lived experience of internet pornography use among the participants would contextualize the initial quantitative results. A mixed methods research question (i.e., Research Question 4) guided this phase of the study.

Research Question 4—Lived Experiences With Internet Pornography

Research Question 4 asked: How do Asian Indian American young adults' and adults' descriptions of their lived experience with internet pornography inform the association between internet pornography use, loneliness, and attachment style? To answer this research question, I tried to depict the structure of the lived experience of the participants' internet pornography use to provide more insight into the initial quantitative results. The quantitative results underlined a significantly strong statistical relationship between attachment anxiety and pornography when mediated by loneliness. Here, I present the qualitative findings related to participants' experience of internet pornography use, focusing on the four areas of the semistructured in-depth interview: (a) the context of the first exposure to internet pornography, (b) the current or recent experience of internet pornography use, (c) the perception of the self and the other due to the internet pornography use, and (d) the causes and the consequences of internet pornography use. For this analysis, I used the lens of transcendental phenomenology to engage with participants' lived

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experiences related to the phenomenon of interest by qualitatively analyzing participants'

interview transcripts for key information and overarching core themes.

The layout of this section starts with the demographic data and key findings from the

online survey and participants' narratives, followed by the presentation of emergent core themes,

subthemes, and essence of experience. Finally, I review participants' descriptions of their lived

experience of internet pornography consumption in the light of the quantitative findings of this

study. I analyzed interview transcripts phenomenologically.

Demographics and Participants' Key Information

To protect their identities, all participants were de-identified with pseudonyms. All eight

participants in the qualitative phase of this mixed methods design self-identified as Asian Indians

and had experience with internet pornography use. Nonetheless, all but one participant preferred

anglicized or fictional names when given the opportunity to choose their pseudonyms. Therefore,

seven names in this study were de-identified using anglicized or fictional names (i.e., Forrest,

George Wilder, Granger, Mary Smith, Potter, Sabrina, and Timothy Jordan), and the remaining

name was de-identified using a Japanese name (i.e., Gohan).

Participants' demographic information based on the online survey are provided in Table

31, including their ages at the time of the interview, marital status, gender, and education level.

Participants' key information (i.e., religious aptitude, frequency of religious service attendance,

attachment style, and age of first exposure to internet pornography) is presented in Table 32. The

ages of participants varied from 21 to 29 years ($M = 24.88$, $SD = 2.90$) at the time of the

interview, including five young adults (18–25 years) and three early adults (26–35).

Table 31

Demographic Factors of the Participants

Name	Gender	Age	Category	Education	Employment
Forrest	Male	24	Young adult	Some college	Student and employed
George Wilder	Male	21	Young adult	Bachelor's	Unemployed
Gohan	Male	21	Young adult	Some college	Student and employed
Granger	Female	26	Adult	Bachelor's	Employed
Mary Smith	Female	25	Young adult	Bachelor's	Student and employed
Potter	Male	25	Young adult	Graduate	Unemployed
Sabrina	Female	29	Adult	Graduate	Unemployed
Timothy Jordan	Male	28	Adult	Bachelor's	Employed

Table 32

Other Key Demographic Factors of the Participants

Name	Importance of religious faith	Religious attendance	Attachment styles	Age of first exposure to internet porn	Level of porn consumption in the PPCS[*]
Forrest	Moderately important	Once a week	Preoccupied	10–12	57
George Wilder	Very important	Daily	Secure	10–12	68
Gohan	Very important	More than once a week	Fearful	12–15	90
Granger	Very important	More than once a week	Secure	10–12	87
Mary Smith	Very important	Daily	Secure	10–12	71
Potter	Very important	Once a week	Preoccupied	Less than 10	124
Sabrina	Very important	Daily	Preoccupied	Above 18	47
Timothy Jordan	Moderately important	Once a week	Fearful	15–18	87

Note. [*]PPCS = the Problematic Pornography Consumption Scale. A cutoff score of 76 differentiates nonproblematic and problematic use in the PPCS. Scores greater than 76 are indicative of problematic use of pornography.

Demographic Factors and Key Information

Of the participants ($n = 8$) who volunteered for the semistructured interview, seven participants (87.5%) identified their marital status as single, and one participant (12.5%) reported being married. Of eight participants, five (62.5%) were men, and three (37.5%) were women. Of the participants who volunteered for the interview, five (62.5%) were young adults, and three (37.5%) were adults. Four participants (50%) reported they had a bachelor's degree, one participant (12.5%) had a master's degree, another participant (12.5%) secured a doctoral-level degree, and two participants (25%) had some college studies but no professional degree. Two participants (25%) were employed, three (37.5%) were students with employment, and the other three (37.5%) were unemployed. The demographic characteristics of the participants are given in Table 31.

Other Key Demographic Data

From the initial quantitative results, several other key demographic data were also elucidated concerning the phenomenon of interest, including the importance of religious faith, attendance of religious services, attachment styles, first exposure to internet pornography use, and the level of porn consumption (PPCS; see Table 32). According to the PPCS cutoff score, only half of the participants fell within the problematic range of porn consumption. The other half, who were in the nonproblematic consumption level, also wanted to share their experience with internet pornography because they believed it had a significant impact on their lives.

The reader must also be aware of some caveats based on the demographic data while reading this study's emergent core themes and subthemes. All eight participants considered religious faith important, with six saying it was "very important." All participants attended religious services at least once a week, with three attending daily. Although I did not ask the

name of the religion to which the participants belonged, the interview transcripts provided

evidence to conclude that all were Christians, and the majority among them belonged to

Catholicism. For example, some participants (i.e., Sabrina, Granger, Potter, and George Wilder)

used the term "confession" in the interview, referring to their catholic faith. In Christianity,

watching pornography is considered a sin, as it is against God's purpose of human sexuality. So,

the reader should be aware that participants could have felt guilty as they all were practicing

Christians. In addition, as these participants belonged to the Asian Indian ethnic group, talking

about pornography would not be effortless because a conversation about sexuality is a taboo

topic in India.

Emergent Core Themes and Subthemes

Husserl's transcendental phenomenological approach (Creswell, 2013) guided this study

and enabled the exploration of the lived experiences of Asian Indian young adults' and adults'

experience of internet pornography use. I used Moustakas's (1994) method of analysis as the

data analytic strategy in this qualitative phase. Emergent core themes and subthemes were based

on the analysis of four areas of the semistructured interview data highlighted in this study to

answer the fourth research question: (a) first exposure to internet pornography, (b) the experience

of internet pornography use, (c) view of the self and the other, and (d) the causes and

consequences of internet pornography use.

Description of Core Themes and Subthemes

As transcendental phenomenology aims to capture the essence of participants'

experiences, Table 33 presents the subthemes, core themes, and the essence of the participants'

shared experiences. Through the analysis of the interview transcripts that addressed different

phases of internet pornography use, four core themes emerged: Paradox, Negative Emotions,

Powerlessness and Out of Control, and Partial View. Each core theme represents a collapsing or collation of similar ideas among the subthemes derived from each section of the semistructured interview; therefore, the reader should note that identification of the nine subthemes preceded the development of the four core themes and the essence.

Table 33

The Subthemes, Core Themes, and the Essence of the Lived Experience

Subthemes	Core themes	Essence
a. Contrasting feelings	Paradox	Tunnel vision
b. Conflicting thoughts		
c. "Porn does not give what it offers"		
a. Negative feelings before and after	Negative emotions	
b. Porn as a "coping mechanism" to overcome negative emotions		
a. Isolation and masturbation	Powerlessness and out of control	
b. Hopelessness		
a. Negative self-image	Partial view	
b. "Objectification"		

Subthemes were grouped into core theme. The core theme, Paradox, summarized the following three subthemes: (a) the Contrasting Feelings, (b) Conflicting Thoughts, and (c) "Porn Does Not Give What It Offers." The core theme of Negative Emotions captured the following two subthemes: (a) Negative Feelings Before and After and (b) Porn as a "Coping Mechanism" to Overcome Negative Emotions. The core theme of Powerlessness and Out of Control condensed two subthemes: (a) Isolation and Masturbation and (b) Hopelessness. The core theme of Partial View summarized two subthemes: (a) Negative Self-image and (b) "Objectification." These core themes served as the bridge between subthemes (i.e., similarities in participants' narration of emotions, thoughts, and behavioral patterns) and the essence of participants'

experiences (i.e., the essential, underlying idea across all participants' experiences). The core

themes represent a summary of the patterns in subthemes. A description of the subthemes

included in each core theme follows.

Core Theme 1: Paradox. The core theme of Paradox included the following three

subthemes: (a) Contrasting Feelings, (b) Conflicting Thoughts, and (c) "Porn Does Not Give

What It Offers." The core theme showed participants' dialectical ways of feeling and thinking

about their first and subsequent experiences with internet pornography. The first two subthemes

reflected respondents' emotions and thoughts associated with their experience of porn

consumption. The third subtheme—"Porn Does Not Give What It Offers"—indicated the

awareness participants had after watching pornography.

Contrasting Feelings. Text units for all participants ($n = 8$) were coded to this subtheme.

Participants experienced these contrasting feelings differently. It is vital to clarify that

contrasting emotions in this context meant the mixture of positive and negative emotions toward

the same phenomenon. Mixed and contradictory emotions like excitement and confusion

(Gohan), curiosity and guilt (Sabrina), less stress and guilt (Granger), pleasure and guilt (Potter),

pleasure and loneliness (George Wilder), and excitement and attraction (Forrest) were

predominant among participants while reporting feelings toward their experience with internet

pornography. However, Timothy Jordan and Mary Smith reported only confusion associated

with their consumption of pornography. As Granger explained:

It would decrease my stress as I forget about it. It was just like a moment of bliss. Right?

You forget about everything around you. . . . The thoughts I had . . . it would be like I

shouldn't be doing this, but I like the way it makes me feel so. I'm still gonna do it, and

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then it would be a lot of like lustful thoughts in my head that I'm just entertaining during that time.

Gohan described it this way:

Primarily, there are two feelings. One feeling is excitement, or more like an adrenaline rush. The other one is like, I shouldn't be doing this, or some guilt, or an attempt at being cautious, but I guess that usually doesn't transpire.

Potter added:

Obviously, I felt good. I felt like there was a rush. . . . What else? . . . I don't know how to describe this feeling in words. But you know that feeling when you're doing something wrong. But you know you're not going to get caught. And there is that rush that comes with it. I feel that sometimes like when I'm like speeding on the highway. I know it's wrong, but nobody is here, and I want to get home fast. I know like I shouldn't be doing this as it's dangerous. But I feel like doing it.

George Wilder described his experience like this:

Yeah, I felt good. It was good to do it, feel it, and watch it. But sometimes, the feeling of loneliness is still there, like I feel a little bit lonely. So, though I am watching it, I'm not fully engaged in it. . . . So, there's once again like a divorce from reality, so like: "Why am I still feeling lonely even though it feels good?"

Sabrina said her experience felt like an act against the will of God. Guilt remained a predominant emotion in her first and most recent experiences with internet pornography. Sabrina stated, "Curiosity was a powerful emotion. . . . I also felt as if I were doing against the will of God as my body is the temple of the Holy Spirit. . . . So, I did not want that to happen in me."

Forrest felt attracted to the pornographic image he saw on the internet. He said, "Excitement,

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attraction. I just wanted to have a piece of it. I wanted to touch her skin, her legs mostly. I used to imagine her in black underwear standing in front of me and smiling."

Mary Smith described being overwhelmed with confusion, stating, "I think I was just confused and didn't know what was happening because it was something new. So, I felt confused and didn't know how to react." Similarly, Timothy Jordan also reported confusion while watching pornography. He used the words "confusion" and "shock" to depict his first experience with pornography as he said, "I was confused. I'm like, 'What? What is this?' That was more of a shock at that point, or I don't know what to do with this."

Conflicting Thoughts. Text units for five (62.5%) of eight participants were coded into the subtheme Conflicting Thoughts. In addition to the contrasting emotions, participants also had conflicting thoughts about this new phenomenon. However, participants found it hard to differentiate between emotions and thoughts while answering the questions about the cognitive dimensions of internet pornography. Four participants (i.e., Gohan, George Wilder, Sabrina, and Timothy Jordan) also experienced psychological stress because of the new information they received unexpectedly from the internet.

Gohan had opposing thoughts, as the text unit contained statements of curiosity and doubt. While analyzing this subtheme, the reader must be aware of the cognitive processes underlying curiosity and doubt because they can be classified as both emotions and thoughts. Doubt arises when the mind is suspended between two or more contradictory ideas. Gohan stated, "Curiosity is definitely one of how I've felt; like lots of curious thoughts in terms of how deep does this hole go. Like . . . what? I'm seeing one thing, and how much of this is actually out there?"

Similarly, George Wilder's thinking pattern was imbued with curiosity and fear-driven doubt. He reported, "This is captivating for some reason. . . . I've never seen this. . . . Then all other thoughts like, 'Am I supposed to do this?' There's a bit of fear like, Yeah, my parents will get mad at me if they see me." Sabrina was surprised to know the new information she received about sexuality because her prior knowledge of sexual intimacy was limited. However, Sabrina's surprise gave way to thoughts about sexuality as something normal, as she said:

> The first thought I had was that similar things are happening around me in this world, although I was not exposed to anything like this before, and no one has told me. The second thought was related to the sexual activities in pornographic videos like I didn't know anything of this sort before.

> Potter, on the other hand, described his first exposure to pornography when he saw a porn image in a magazine. Potter had excitement but thought it was wrong due to his mother's reaction. He said:

> I was looking at the magazine just blankly staring. I know that there was something wrong because my mom wasn't happy with it. . . . I think I was in awe of something like I was just interested in that. . . . I don't know how to describe it.

"Porn Does Not Give What It Offers." Text units of five (62.5%) of eight participants were coded into this subtheme. The expression, "porn does not give what it offers," was used by Potter to portray the contrast between his expectations before watching porn and the reality of what happened afterward. This subtheme became an all-encompassing term to depict the consequences of pornography in participants' lives, as they all reported similar experiences. Potter used a slang term, "post-nut-clarity," to verbalize the unexpected level of guilt he felt after an episode of watching pornography. Another expression, "clarity after action," used by George

Wilder, also captured the essence of this subtheme. Gohan, George Wilder, and Sabrina became aware of what happened in their life due to porn and tried to move forward with the rest of the day. However, for George Wilder and Sabrina, this process of awareness was in the form of self-questioning. Timothy Jordan realized the contrast between his expectation and reality when he said he wanted to feel empowered through porn but felt disempowered. Gohan described it like this:

> The only benefit I've had is this relief and this excitement factor, but other than that, I would say every other aspect, whether it's relationships with my friends or my family, or self-control or time management, all these things I would say it's had a negative effect . . . even like relationships with friends or previous girlfriends.

George Wilder added:

> When the action is done, you just sit there, and you're like, "Wow! What happened to you?" You leave a vacuum. You leave this tunnel vision. You enter back into reality. And your, like, "What the heck? What was the point of that? Nothing." So, there's a lot of clarity that people call the "clarity after the action," and that clearly, all usually lead to. . . . I try to make myself a part of life again because I remove myself from that, but I know it's not right. So, I want to go and search for that life again. . . . Let me enter myself back into life again if I was secluded from it.

According to Sabrina:

> Porn is not going to change anything in my life. When we do something, we expect a change in our life, right? But watching porn will not have a positive effect on our life. Then why should I watch this? Why did I do this?

Potter described it like this:

It doesn't give what it offers. The more you do this, your sexual capacity decreases. Another thing is that you can't love anybody. . . . It's impossible to love the way that it should be. You can superficially love people. . . . I don't even see one positive . . . there isn't any, and then your mind becomes very bad. You can't look at people the same. . . . Have you ever heard of the slang "post nut clarity?" . . . It's like the moment you release the sperm, maybe a 10 to 15 seconds like, "Oh, my God!" And then immediately after, it's like immense guilt.

Core Theme 2: Negative Emotions. The second core theme, Negative Emotions, comprised two subthemes: (a) Negative Feelings Before and After and (b) Porn as a "Coping Mechanism" to Overcome Negative Emotions. This core theme emerged from an analysis of participants' narratives of their emotions before and after an episode of internet pornography consumption and their reflections on the causes of internet pornography use. Participants in this study primarily experienced negative emotions associated with their porn consumption, and they used pornography as a coping mechanism to deal with these negative emotions.

Negative Feelings Before and After. Text units for seven (87.5%) of eight participants were coded to this subtheme. Loneliness was identified by three participants (i.e., George Wilder, Forrest, and Mary Smith) as the powerful emotion that led to watching pornography. Anxiety constituted the emotional ambience of Granger prior to watching pornography. Stress was a prominent emotion of three participants (i.e., George Wilder, Gohan, and Potter). Academic stress prompted Gohan's porn watching, whereas relationship stress and exam failure were potential triggers for Potter's porn watching.

In addition to loneliness, George Wilder also identified stress and anger as principal feelings he had before watching pornography, as he said:

Most of the time, it was probably days of some loneliness or some frustration, some stress, because, you know, we have a certain firewall. But then, you know, it's lowering and lowering. And at a certain point, there's a breaking point. So, I think immediately before I probably have some arguments with my parents, or some feelings of loneliness, or some recollection of I'm stressed. I need to do this to release the stress and then go to my room or something.

Gohan described a sense of relief, stating:

Yeah, definitely, like I said, it helps to be like an escape. So, in specific moments, say, if I'm doing homework . . . maybe it has a deadline that day, or there's any heightened stress. I guess, typically, after watching pornography, there is a sense of relief.

Potter added:

I failed my practice exam and was having fights with my girlfriend at the time. Now I just feel like watching it. It's just like a stress reliever. . . . When I need to relieve stress, I'll go on my phone like Instagram, or I'll go on TikTok, and then I try not to do anything, but when I scroll down, I'll see something. You don't have to search for it actively. It can just come up on your page, and then it's just like, if you snap it, it's like you snap into something else, and then you're like, "Okay," and then you try to fight it off, and you keep scrolling you something else, and you keep scrolling, and you see something else.

Timothy Jordan was unique in sharing his feelings before watching pornography. He often felt unmotivated, which drove him to engage in internet pornography. Timothy Jordan said:

On the weekend, I don't have to, you know, get up and go to work. I don't have like a set

schedule, and there were times when I struggled to get out of bed; there was nothing

really like motivating me to do anything . . . moping around in bed . . . like not wanting to

leave like the comfort of like the warmth of bed. . . . And then, maybe the thought of porn

comes to me. Then there's something to do now, like . . . my brain has like fixated on this

like there's some purpose, and my brain kinda feels like okay.

Participants also felt intense negative feelings after the experience of internet

pornography use, such as anger (Granger, Potter, and George Wilder), self-hatred (Granger),

loneliness (George Wilder), guilt (Potter, Mary Smith, and Sabrina), and disappointment (Potter).

Granger often felt anger and self-hatred to the point of cutting herself. George Wilder was angry

at himself and felt "enslaved" after watching porn. Sabrina used the phrase "initial pleasure gave

way to pain" to describe her guilt after consuming porn. Timothy Jordan used the expression

"reaffirming that despair" to share his experience.

Granger shared this experience:

But afterward, I would feel terrible and angry and cry and be upset. Whenever I was

going through these periods, I hated myself. I was so angry that I was in this position

because I am someone of faith, and I care about it, too, right? So, I know this is a sin, I

know it's wrong, but I can't get out of it. . . . I would actually get like a really strong urge

to cut myself. . . . I hated myself and felt like I would want to cut myself.

George Wilder added this statement:

Though I am watching it, I'm not fully engaged in it . . . like a feeling of anger at

yourself, because I know, I should not be doing this, yet I'm still doing it. My mind says

not to do it, but I feel like a bit of an enslaved person, and I can't really be on top of it. . .

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. Afterward, I never felt good. I was always introspective, frustrated, lonely, angry, and

sad that I was in this position.

Sabrina explained her feelings this way:

I went into the settings again, unblocked porn sites, and started watching again. I

questioned myself, like what happened to me, and I felt something creepy, and that was

my feeling. I felt like I was hurting God, and I cried a lot that day. I did many things to

console myself. The initial pleasure gave way to pain.

Timothy Jordan described feeling like a loser, stating:

I accepted this as part of my life. It's sort of like I started with the despair, and it's almost

like reaffirming that despair because I think it's like I wouldn't need this. After all, like

fundamentally, I think this is a loser behavior. Fundamentally I have this fear about

myself that I am a loser, and it's almost like reaffirming that by doing this.

Pornography as a "Coping Mechanism" to Overcome Negative Emotions. Text units

for seven (87.5%) of eight participants were coded to this subtheme. The expression "coping

mechanism" was used by Granger to describe how she used pornography to cope with stress and

anxiety. Participants used similar expressions (e.g., "solution," "escape," and "coping solution")

to describe how pornography was used to overcome negative emotions such as loneliness

(George Wilder, Forrest, Granger, Gohan, and Potter), stress (George Wilder, Gohan, Mary

Smith, Granger, and Sabrina), fear of intimacy (Timothy Jordan), anxiety (Granger and Potter),

and relationship distress (Sabrina).

For Timothy Jordan, watching porn was a "coping response" when stressed and lonely.

He also identified watching porn as a "short-term solution." The same idea was backed up by

Potter when he used the words "temporary 20-second relief." For Mary Smith, porn acted as a

quick stress reliever. For George Wilder, porn viewing was a "solution" or "escape" from stress and loneliness. Gohan described porn as an easy escape when tired. None of the participants noted a positive emotion as a cause of internet pornography use. George Wilder explained:

> I am feeling stressed. I'm feeling lonely. I am feeling tired; whatever it is, you want to satiate that feeling. It's a bit of like from a negative place, you want to have a positive encounter. Whatever hole is in your heart, you want to fill that hole with pornography . . . You want a solution from it, and you turn to pornography.

Granger added:

> Emptiness . . . this emptiness that I needed to fill in . . . pornography would definitely temporarily fill it. . . . I think after it started becoming an addiction, it became more of a coping mechanism during times of high stress and anxiety. Definitely loneliness, too. I remember feeling like there was almost a hole in my heart . . . that I felt like nothing could fill, but, like masturbating, would temporarily fill that hole.

Gohan described feeling like this:

> Well, I would say it was a period of either tiredness or like I need some break in my day . . . Thus, in my head, I was like, "Okay, what is an easy escape?" . . . I guess escape is the mindset that I was in, and it's more of an intense feeling. And so, in a short period of time, like when I need a quick break, instead of grabbing a snack or something kind of . . . I guess it's a weird comparison, but to say it's like a shot of like an energy drink or a shot of coffee or something. It is like revitalizing in a sense . . . in a weird way.

Potter discussed loneliness:

> I think loneliness. It's not because I don't have people around me. It's loneliness, like you feel empty, and sometimes I feel like, oh, at this point, there's nothing you can do. . . .

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Another reason why I would still want to do this is that I did struggle with a lot of

anxiety, especially for the last 3–4 years. . . . I know this is wrong, but then I'm like, you

know, it gives you that temporary, like 20-second relief, and then that's it.

Timothy Jordan talked about the fear of intimacy, stating:

I guess this is also related to like fear of intimacy. I sometimes feel like there's an

opportunity, maybe like in a relationship, or if you want to date someone, I think there is

a risk. And it's hard for me to be vulnerable. And then sometimes it is sort of like a safe

opportunity to get out of that sexual energy, but in a way that doesn't require any risk like

building a relationship. . . . I started to think of porn as self-soothing recently. . . . And

it's like a stress response, and it's like a coping response.

Core Theme 3: Powerlessness and Out of Control. The third core theme that emerged

from the analysis of participants' narration regarding the behavioral patterns associated with

internet pornography consumption was Powerlessness and Out of Control. This core theme

comprised two subthemes: (a) Isolation and Masturbation and (b) Hopelessness. Participants felt

powerlessness and out of control as they could not resist their urge in the body that would end up

in masturbation and the tendency to watch porn again.

Isolation and Masturbation. Text units for seven (87.5%) of eight participants were

coded to this subtheme. When asked about their behavioral patterns before watching

pornography, five participants (Forrest, Granger, Potter, Sabrina, and Timothy Jordan) reported

they isolated themselves before watching pornography. Four (80%) of these five participants,

except Forrest, also experienced some sexual urge in their body, ending in masturbation.

Although Mary Smith and George Wilder did not share the pattern of isolation associated with

watching pornography, they would often masturbate. Granger had a different pattern, as isolation

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and masturbation led her to read porn material than watch porn. For some participants, these behavioral patterns of isolation and masturbation were often coupled with negative emotions like stress (Granger and Mary Smith) and anger (Timothy Jordan). Timothy Jordan described this pattern by stating:

> Well, in this context, it's already I'm in my bed already, and doors closed. . . . I don't think I have a pattern. Maybe I'm scrolling through my phone or something and clicking something. This is what I was doing then. After some hesitation and resistance, I just sort of succumb to the urge and decide to start watching porn and like masturbating. I feel like it will ruin my day, like I feel it's up. My day is already ruined after porn and masturbating, but it's hard to recover. I don't know if it's a thought or feeling, but it's like, "Fuck it," and then you do it.

Potter added:

> I will grab tissues, just in case. . . If I do break it, then I have it with me. I don't have to stop what I'm doing and go and get it. It's there. I will make up my mind. I'll see who's here . . . find somewhere secluded . . . stuff like that. . . . I think watching porn and masturbation gave me some sense of happiness that I wasn't getting with myself.

Granger shared:

> Yeah, for me, it's always like the urge to masturbate, and I need something to stimulate that, so, like, I can search up something to read. I'll just be reading it. It will stimulate me, and then I'll masturbate. . . . I felt like I was about to have a panic attack because I was just so stressed. And I had to masturbate to calm myself down. . . . I think I would close myself off and isolate myself more.

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Granger often got agitated after reading porn and wanted to isolate herself from other others. Granger described this by stating:

I would definitely get agitated, especially if I was at home, I wouldn't want to talk to my family. If they asked me something or wanted me to do something, I would get agitated and be like, "No, I don't want to talk to you or do this" and just close myself off in my room. I would hate myself. I would cry. I would close myself off.

Similarly, Mary Smith and George Wilder reported that pornography consumption and masturbation occurred simultaneously. Mary Smith said, "I feel like I was very much frustrated and stressed. And so, I was like, "oh, let me watch pornography," and usually, along with that, it would be masturbation." According to George Wilder, "Pornography creates in the body feelings that lead you to masturbation. So, coupled things, they are usually together. Pornography leads to bodily stimulation, and then you release the tension by masturbating."

Hopelessness. Text units of five (62.5%) of eight participants were coded to this subtheme. Hopelessness was used as a broad term to depict the participants' emotions associated with their inability to resist watching porn after an episode of porn consumption despite their attempts to stop it. George Wilder used the phrase "self-defeating" to describe the compulsive nature of porn consumption, as he was unable to stop himself from engaging in this behavior. In addition to the irresistible desire to watch porn again, George Wilder experienced tolerance as he wanted to watch a more intense form of pornography. Little things could trigger Granger to watch pornography, which she could not resist. Timothy Jordan described his day as "ruined" as he relapsed and tried to sleep it off. Despite their guilt, Forrest and Mary Smith wanted to watch porn again. George Wilder explained:

Whatever hole is in your heart, you want to fill that hole with pornography. . . . You want a solution from it, and you turn to pornography. And what could be the consequences? Again, again watching it . . . I probably, go back on my phone because it's self-defeating. I just committed something. I did something wrong, but I don't think I could ever get out of it. So, I quit. I go back to my phone, and I will be scrolling or watching a video or something . . . "Why is it that I'm still doing this?" Though I know it's wrong, why do I have to find a more intense form of pornography?

Granger added:

Recently, in conversation, someone was sharing a story of sexual abuse . . . nothing was going through my head when he shared all this stuff. But I don't know, I guess after that, it kept like coming back to me. And then I just felt like masturbating, and I couldn't. . . . I felt like I had to. So little things can trigger it.

Timothy Jordan offered this insight:

Sometimes, I think that all my day is ruined. And then I may keep scrolling other things in my phone, and I end up relapsing again, like maybe 30, 40 minutes later, or like an hour later, or something. I think there is a pattern of like not ending up doing any of the things I wanted to do but just lounging around and then like waiting to go to sleep because sleep is the only thing that kind of resets my brain in a way.

Forrest shared this perspective:

I feel like I want more of it because it's incomplete. So, the feelings as I want to see it, and I do want to do it again and again and again and again. . . . Whenever I see something I like, I even feel like saving it to watch it again and again and again . . . and feeling like I'm doing something wrong, still wanting more so.

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Mary Smith described her experience by saying:

> I would fall back again into watching it. So, in the end, I would always usually feel guilt, knowing that this wasn't what I should be doing. And this is not a good thing to do, but I would continuously still keep doing it.

Core Theme 4: Partial View. The core theme of Partial View included two subthemes—Negative Self-image and "Objectification." The core theme showed the negative impact of porn consumption on the self-image and the image of others. Text units unanimously indicated the formation of a partial view of the self and the other, as participants could not look at others or themselves holistically and leaned toward their pessimistic side due to porn consumption.

Negative Self-image. Text units of all participants ($n = 8$) were coded to this subtheme. Participants used negative adjectives to verbalize their self-image. These negative and distorted negative self-images included being dirty and not good enough (George Wilder), having no self-worth (Potter), being a loser (Timothy Jordan), being weak (Gohan), feeling incomplete (Forrest), being incapable (Sabrina and Ganger), and feeling broken (Mary Smith). George Wilder described:

> I felt it about myself; I'm not a good person. . . . I wasn't good enough . . . dirty. . . . I have something private, you know, something behind a very nasty closet, and no one could ever know about it, so I guess I'm always walking with that behind me.

Timothy Jordan explained:

> The identity I have is probably like the loser identity and constellations of identities that are around or associated with that loser identity. It also makes me feel worthless. . . . So, one identity is obviously me being a loser and like someone who isn't confident about

himself . . . I feel like I am not doing anything with my life. Now I don't feel like in

control with porn.

Mary Smith added:

I feel like, when I was consistently watching it, I would have considered myself just like

a broken and lost person looking in the wrong places. . . . I'm doing this because

something in me is wounded or broken, and I know I shouldn't be doing that. But it was

just continuously so.

"Objectification." Text units of seven (87.5%) of eight participants were coded into this

subtheme. Pornography impacted the way the participants looked at others. By "Objectification,"

an expression used by George Wilder, I mean the participants do not look at others as a person

but as an object to be used for their gratification. This objectification could happen in several

ways—fantasizing about others sexually, seeing others as objects of sex, and having lustful

thoughts about others. Granger objectified the other through sexual fantasies. Because of

pornography, she had to use others rather than see them as persons, as she said:

People that I'm attracted to, I definitely will start fantasizing about them and stuff. I'll

start just daydreaming about them. You're just like using people in your head to fantasize

about them. And, especially for people you're attracted to, that affects your relationship

with them negatively because you care more about using them rather than seeing them as

persons.

Similarly, Forrest described various sexual fantasies and how pornography often leads to

a sexualized view of other women. Forrest stated:

What I want to experience is not only holding her in my arms or/and her holding me. I

want to experience kissing on the lips and cheek . . . the smiling . . . the touching of her

face and hair, the touching of her body, and her doing the same to me . . . seeing her take

her clothes off . . . lifting her leg up with my hand . . . holding her with her legs wrapped

around me since that's how it is, and relationships as well, moving her around the table,

and of course, there's the sex.

George Wilder and Gohan looked at women as objects of gratification. As George Wilder

explained:

I think at the height of this pornography struggle, you know, was definitely looking at

women like objectification . . . seeing them in a way to be used only necessary for sex or

something, and I think that's the height of it. . . . You know, my first relationship was

much more sexually active because of the struggle with pornography. Because I didn't

know that personhood like this woman is more than her body and sexuality, but that was

only the focus I had. . . . This definitely impacts the way I view others.

Gohan shared:

I definitely would say looking at other women, you know, it's hard in public after seeing

porn and stuff. . . . But seeing women in public, it's hard to see them as individuals when

you see so many kinds of dehumanizing things on the internet and stuff. And that's even

amongst my own friends and stuff.

Essence of the Experience

"Tunnel Vision," an expression used by George Wilder to verbalize the effect of

pornography in his life, was the core component or essence of participants' lived experiences of

internet pornography consumption. Tunnel vision is the inability to broaden one's perspective to

see reality in all its dimensions. Hence, they interpret and analyze reality in black-and-white

terms, lacking a comprehensive and integrated perspective. All participants in this study shared

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this essence of experience, as they were unable to view themselves and others holistically and integrally due to their porn consumption and tended to focus solely on the pessimistic and unfavorable aspects of reality. As they were split in their cognitive and affective dimensions due to porn, participants could not reflect upon more profound layers of human thoughts and emotions associated with porn consumption. As a result, they were oblivious to their pleasant experiences.

Regarding the first core theme, Paradox, the participants had dialectical feelings toward the experience of porn consumption (i.e., Contrasting Feelings). Although negative emotions like guilt, shame, sadness, and loneliness coexisted with positive emotions such as excitement, curiosity, and pleasure, negative emotions were more prevalent. Besides, participants focused exclusively on the unfavorable results of porn consumption, dismissing any possible positive effects associated with pornography consumption (i.e., "Porn Does Not Give What It Offers"). Participants could not integrate positive and negative aspects of reality and they were unable to see the broader picture of their affective dimension due to porn consumption.

Concerning the second core theme, Negative Emotions, the underlying experiences described in the two subthemes—Negative Feelings Before and After and Porn as a "Coping Mechanism" to Overcome Negative Emotions—focused only on the unpleasant feelings associated with the experience of internet pornography use. Participants tended to focus solely on the shadow side of the phenomenon and failed to acknowledge that they were experiencing some positive and pleasurable emotions at times, resulting in an unbalanced view of human experience of emotions. Furthermore, analyzing the process of porn viewing as a "coping mechanism" to deal with stress seems to be a mechanistic and simplistic view of human beings, failing to recognize the deeper meanings behind human behavior.

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In terms of the third core theme, Powerlessness and Out of Control, the participants indicated hopelessness because they could not resist watching pornography despite their efforts. Furthermore, they felt out of control as "little things" could lead to masturbation and watching pornography. Participants forgot all their personality strengths and saw themselves as powerless due to their pornography use.

Regarding the fourth core theme, Partial View, participants focused only on the negative aspects of themselves and others due to porn consumption. They were only concerned with the sexual dimension of the other (i.e., an object of sex rather than as an individual), ignoring the fact that the human being is a multidimensional being. Participants could not look at others and themselves holistically and leaned toward the pessimistic side of the self and the other because of porn consumption.

Answering the Fourth Research Question

The fourth research question asked: How do Asian Indian American young adults' and adults' descriptions of their lived experience with internet pornography inform the association between internet pornography use, loneliness, and attachment style? The initial quantitative results showed a consistent relationship between attachment anxiety (i.e., negative self-model) and pornography consumption when mediated by loneliness. Furthermore, a statistically significant relationship was found between attachment anxiety and loneliness when mediated by porn viewing. Hence, the statistical results from the initial quantitative study underlined the bidirectional relationship between porn consumption and loneliness in participants with attachment anxiety. However, the quantitative results did not show a consistent relationship between attachment avoidance (i.e., negative other model) and porn consumption. In this section, based on my interpretation of qualitative data, I discuss the relationships between loneliness and

porn consumption, attachment styles and porn consumption, and attachment anxiety (negative

self-model) and porn viewing.

The Relationship Between Loneliness and Porn Consumption

The essence of experience, Tunnel Vision, underlined the predominance of negative

emotions, such as stress, anxiety, loneliness, curiosity, fear, and shame associated with porn

consumption. Loneliness seemed to be one of the prominent negative emotions related to

watching porn. I found loneliness to be universal across all interviews, as all participants

experienced some degree of loneliness in relation to their porn consumption. Loneliness was a

key factor behind the development of the core theme, Negative Emotions. A few subthemes

developed in this study (e.g., Negative Feelings Before and After, Contrasting Feelings, and Porn

as a "Coping Mechanism" to Overcome Negative Emotions) shed light on the association

between loneliness and pornography consumption. To conclude, loneliness played a significant

role in participants' experience of pornography consumption, although it was not the only

emotion they felt.

The Relationship Between Attachment Styles and Porn Consumption

The emergent core themes and subthemes did not describe the relationship between

internet pornography consumption and attachment styles, as interview questions did not address

the attachment style of the participants. However, some participants gave hints about attachment

issues and the consequences of porn consumption. Potter, a 25-year-old male with a preoccupied

attachment style, said he had to face relationship issues from parents and others, such as bullying

and teasing as they called him fat. George Wilder, a 21-year-old male with a secure attachment

pattern, unambiguously explained how attachment issues with parents and loneliness created

stress and how he used pornography as a means to release stress. For him, pornography was a

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"twisted way" to fix relationship issues and loneliness. He reported, "Maybe when my parents get mad at me, I feel a little bit lonely that I can't receive love, so, like a twisted way to fix that, you go to pornography." Timothy Jordan, a 26-year-old male with a fearful attachment style, explained how fear of intimacy led him to watch pornography. He stated:

> I guess this is also related to like fear of intimacy. I sometimes feel like there's an
>
> opportunity, maybe like in a relationship, or if you want to date someone, I think there is
>
> a risk. And it's hard for me to be vulnerable. And then sometimes it is sort of like a safe
>
> opportunity to get out of that sexual energy but in a way that doesn't require any risk like
>
> building a relationship.

Attachment Anxiety (Negative Self-Model) and Porn Consumption

In this study, I interpreted attachment anxiety as a negative self-image and attachment avoidance as a negative other image based on the findings of Bartholomew and Horowitz (1991). Although the themes developed in this study did not directly elaborate the quantitative finding of the association between negative self-image and pornography, the responses from the participants about their self-image after watching pornography provided some insight into this association. All the participants in this study had negative self-images associated with their porn consumption, such as being dirty and not good enough (George Wilder), having no self-worth (Potter), being a loser (Timothy Jordan), being weak (Gohan), feeling incomplete (Forrest), being incapable (Sabrina and Ganger), or feeling broken (Mary Smith). However, I could not determine if participants had these negative images before porn consumption.

Although the quantitative study did not identify a significant relationship between negative other image (i.e., attachment avoidance) and porn consumption, the interviews shed light on the relationship between the two. Five of the eight participants objectified the other in a

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dehumanized or sexualized way. One participant (Granger) lamented that she cared more about using the other than seeing them as a person due to porn, underlining the relationship between negative other image and porn consumption.

Reflection on the Qualitative Findings

In the follow up qualitative phase of this explanatory sequential mixed methods research design, I described the essence of lived experience of pornography consumption among a sample of Asian Indian young adults and adults in the United States—Tunnel Vision. Four core themes emerged from the analysis of interview transcripts: (a) Paradox, (b) Negative Emotions, (c) Powerlessness and Out of Control, and (d) Partial View. Each core theme is an assembling of similar ideas among the subthemes derived from various sections of the semistructured interviews. The development of nine subthemes preceded the development of the four core themes and the essence of the experience.

Overall, a few findings of the qualitative data analysis supported and provided some insights into the initial quantitative results that identified a relationship between loneliness and internet pornography consumption. Loneliness seemed to be one of the prominent negative emotions participants felt before, during, and after watching pornography. The core theme, Negative Emotions, reflects the prominent role of loneliness in relation to pornography. The subtheme of Porn as a Coping Mechanism to Overcome Negative Emotions provided some insight into pornography as a coping mechanism to overcome negative emotions, including loneliness. Next, responses of participants about their self-image associated with porn consumption provided some details into this association between negative self-image (i.e., attachment anxiety) and porn consumption, as all participants reported negative self-images associated with their porn consumption. However, the emergent core themes and subthemes did

not elaborate on the relationship between internet pornography consumption and attachment styles, as interview questions did not address the attachment styles of the participants.

Bowlby's (1969) and Ainsworth's (1973) attachment theory, combined with the conceptual models of Gagnon and Simon's (1973) sexual script theory and Griffith's (2005) six-phase addiction model, served as the theoretical foundations of this explanatory sequential mixed methods design. The sexual script is the cognitive understanding of an individual about their sexuality. One's sexual script determines the choice and experience of their sexual behaviors, including watching pornography. Cultural, interpersonal, and intrapersonal human experiences shape these sexual scripts. Thus, the sexual script is a social construct (Rhodes, 2020) that individuals constantly and dynamically alter, develop, and reinterpret (Jones & Hostler, 2002). Hence, sexual behaviors like porn viewing can alter one's sexual scripts because participants may incorporate pornography's sexual scripts—objectification, eroticization, misogyny, and promiscuity—into their own sexual scripts (Braithwaite et al., 2015; Butler et al., 2018). These alterations in sexual scripts, according to Willoughby et al. (2018), can increase the use of pornography. The emergent subtheme Objectification in the qualitative phase of this study indicates the formation of the aforementioned sexual scripts of pornography as participants reported they viewed others in a sexualized and lustful way (i.e., objectification and eroticization). In addition, male participants in the study could not view women as individuals; instead, they looked at them as objects of sex (i.e., misogyny).

According to Butler et al. (2018), sexual scripts in pornography could adversely affect attachment relationships because they are antithetical to secure attachment, which is "conceptually linked to loneliness" (p. 134). Like Butler et al.'s study using path analysis, the current study identified a positive relationship between attachment anxiety (i.e., low secure

attachment) and pornography consumption when mediated by loneliness. In addition, the subtheme, Isolation and Masturbation, supports participants' sense of isolation from the attachment figures due to porn consumption, shedding some light on the positive correlation between attachment anxiety and porn consumption. For example, due to pornography, five of the eight participants said they wanted to isolate themselves from others, and two reported they did not want to talk to anyone in the family or that they reciprocated bad moods to others; another doubted whether others would love him. Further, through the lens of attachment theory, this isolation from the attachment figures could also be interpreted as a sign of loneliness because loneliness has been understood as a feeling of being disconnected from a positive relationship with attachment figures (Borawski et al., 2021; Mikulincer & Shaver, 2007). In short, the formation of pornography's sexual scripts and the consequent loneliness due to the rupture of attachment relationships can accelerate the addictive process of internet pornography consumption.

Considering the repeated use of pornography through the lens of the addictive process, I primarily used Griffith's (2005) addiction model. This model elucidated how a porn consumer advanced from lower to higher levels in the spectrum of internet pornography use. Several studies (Carnes, 2001; de Alarcón et al., 2019; Grubbs et al., 2015) used the addiction model as the theoretical bedrock to explain internet pornography consumption. In this study, participants spontaneously used the language of addiction while attempting to articulate and understand the behavioral patterns associated with porn viewing. Six of the eight participants used the term "addiction" to describe their struggle with pornography: (a) "I am a weak person with addiction" (George Wilder); (b) "I don't know, I guess like an addiction" (Gohan); (c) "I didn't know, it's an addiction recently" (Potter); (d) "It started becoming an addiction" (Granger); (e) "I was

constantly watching . . . like an addiction (Mary Smith); and (f) "it makes me feel worthless like an addict" (Timothy Jordan).

The recent findings in neurobiology also have backed the use of an addiction model to explore internet pornography use (Hilton & Watts, 2011; Love et al., 2015; Stark & Klucken, 2017). Hilton and Watts (2011) concluded the activation of brain reward pathways in someone who engaged in uncontrolled internet pornography was similar to that of someone suffering from a substance addiction. Despite the negative consequences, such activity reduces users' capacity to control sexual behaviors (Kor et al., 2013). Therefore, Wéry et al. (2019) conceptualized this dysfunctional use of cybersex as a behavioral addiction (see also Alavi et al., 2012). Potter, one of the participants, realized that porn addiction was "connected to other addictions."

In the current study, I also identified a significant relationship between loneliness and pornography consumption. This pathway from loneliness to pornography use can also be neurobiologically explained by the addiction model through the brain's dopaminergic reward system, partially by oxytocin (Fonagy et al., 2008). According to Fonagy et al. (2008), the release of oxytocin during porn watching can inhibit the neural systems that produce negative consequences like loneliness. Because of the immediate feel-good effect of pornography (Butler, 2018), it can probably be used as a coping mechanism to escape the distressing feelings of loneliness. The subtheme, Porn as a Coping Mechanism to Overcome Negative Emotions, also contributed additional details into the previously mentioned quantitative finding.

The core theme Powerlessness and Out of Control and the subtheme Hopelessness highlighted these addictive processes in pornography viewing, as participants relapsed against their will and felt powerless and out of control over their porn consumption. The compulsive nature of frequently watching pornography implied a behavioral addiction, although internet

pornography addiction is not a diagnosed mental disorder in *DSM-5* (American Psychiatric Association, 2013) or *DSM-5-TR* (American Psychiatric Association, 2022). Participants' sense of powerlessness and loss of control supported this compulsion to continually engage in porn viewing despite the negative impacts. Although participants felt excitement, pleasure, and feeling good while watching porn, they later experienced unpleasant feelings such as guilt, loneliness, and despair because of their continued choice. However, participants felt helpless to exercise the choice not to watch porn.

Chapter 6

Summary, Implications, and Recommendations

In this explanatory sequential mixed methods research design, I examined the prevalence of internet porn consumption and the association with its two correlates—loneliness and attachment styles—among U.S.-born and immigrant Asian Indian American young adults and participants' lived experiences of pornography consumption. In Chapters 1–5, I presented the rationale and justifications for the study, literature review, self-of-the-researcher, methodology, and results. This chapter includes an overview of the study and a synopsis of the significant results. I also briefly reflect on the theories integrated into the research design: (a) attachment theory, (b) addiction model, and (c) sexual script theory. In addition to the research implications, I include clinical implications for the general field of mental health practitioners, especially counselor educators. Limitations of the study and recommendations for future research are also presented.

An Overview of the Study

The purpose of this study was threefold: (a) to measure the prevalence of internet pornography use among a sample of Asian Indian American young adults and adults; (b) to explore the relationship between internet pornography use, loneliness, and attachment patterns; and (c) to explore the lived experience of problematic internet porn viewers. The extreme paucity of studies on internet pornography consumption among Asian Indians in the United States and the ethical demand to provide more effective interventions or empirically supported treatments to the problematic porn consumers among this ethnic minority group justified the need for and importance of this study.

The nature of the research questions led me to choose an explanatory sequential mixed methods design. Hence, I conducted this study in two distinct phases—beginning with a quantitative phase and following with a qualitative phase—that provided a total picture of the phenomenon of internet pornography use. The goal of the qualitative follow-up phase was to describe the lived experiences of problematic porn viewing to contextualize the initial quantitative results.

Quantitative Phase

The quantitative phase of this mixed methods design employed an online survey through Qualtrics to collect the data about the prevalence of internet pornography use among U.S.-born and immigrant Asian Indian American young adults and its relationship with loneliness and adult attachment styles using psychometric scales: (a) the Relationship Questionnaire (RQ); (b) the Relationship Scale Questionnaire (RSQ); (c) the University of California Los Angeles Loneliness Scale, version 3 (UCLALS3); and (d) the Problematic Pornography Consumption Scale (PPCS).

I used four inclusion criteria to recruit the participants in this study: (a) U.S.-born or immigrant Asian Indian American, (b) 18–35 years of age, (c) English fluency, and (d) at least 10 years of residence in the United States. Participants who were 18–25 years old comprised the young adult group, and participants who were 26–35 years old were placed in the adult age group. Using criterion-based convenience sampling or nonprobability sampling, I recruited participants from various Asian Indian-based Christian churches and Asian Indian Associations in the United States.

As per power analyses, a sample size of 540 participants was found sufficient to allow adequate power for all statistical tests used in this study. Although 641 participants provided

informed consent, only 429 completed the online survey. Of the total 429, 102 participants reported "never" for all 18 items of the PPCS; hence, the data of the PPCS became zero-inflated. I removed those 102 participants from the study as participants who had no experience with internet pornography use were not informative to this study, and the remaining 327 participants' data were used in statistical analyses associated with the research questions. In this quantitative phase, an epistemology of postpositivism directed the selection of instruments, the measurement of variables, the choice of statistical tools, and the assessment of statistical results (Creswell & Plano Clark, 2018; Kaushik & Walsh, 2019).

Qualitative Phase

In the second phase, semistructured in-depth interviews were used phenomenologically to explore and describe the lived experiences of internet porn use of a few voluntary participants who had already participated in the quantitative phase. The goal was to contextualize the initial quantitative results. I used Moustakas's (1994) method of analysis to identify significant themes/patterns or categories to identify the unique themes and meanings of the transcribed interviews. Through purposeful homogenous sampling, eight participants were interviewed for the qualitative phase of data collection. An epistemology of constructivism steered the course of scientific investigation in the qualitative follow-up phase.

In this mixed methods study, I used pragmatism as an overarching paradigm to help integrate postpositivist and constructivist epistemologies in the quantitative and qualitative phases, respectively. Besides, the pragmatic worldview also directed the priority decision, which prioritized one method over the other method, to answer the research questions (Creswell & Plano Clark, 2018). For this mixed methods research design, I emphasized the quantitative data more to address the research questions.

Major Findings

Several significant findings were discovered from the two phases of data collection in this sequential explanatory mixed methods study. I explain these findings congruently with each research question that guided this study. The first three research questions guided the quantitative phase, and the fourth one directed the qualitative phase of this study.

Research Question 1

The first research question asked: What is the prevalence of internet pornography consumption among the U.S.-born and immigrant Asian Indian American young adults and adults? I drew the following conclusions based on the stated research question and data analyses presented in Chapter 5. Regarding the prevalence of pornography consumption among a sample ($n = 327$) of U.S.-born and immigrant Asian Indian young adults and adults, I found 274 (83.8%) were in the nonproblematic level of porn consumption group, while 53 (16.2%) belonged to a group with a problematic level of porn consumption.

To further answer the first research question, I used t tests and one-way ANOVAs to examine the differences between various comparison groups of 12 demographic variables used in this study on the level of pornography consumption as per the PPCS scores. Five demographic variables (i.e., participants' employment status, birthplace country, the importance of religious faith, drug consumption, and alcohol consumption) showed no statistically significant differences between comparison groups on their PPCS scores. However, the remaining seven demographic variables (i.e., age, gender, education level, marital status, attendance of religious services, the first age of early exposure to internet pornography, and general internet use) indicated statistically significant differences between comparison groups on the level of internet pornography consumption.

Consistent with the findings from prior research about the relationship between gender and porn consumption (Carroll et al., 2008; Lim et al., 2017), I also found men to be higher consumers of internet pornography than women. Regarding the association between porn consumption and the age of first exposure to internet porn, this study aligns with the findings of Lim et al. (2017). According to Lim et al., the median age at first pornography viewing was 13 years among men and 16 years among women; similarly, in terms of the age group of first exposure to porn consumption, 12–15 was the most frequent age category in this study. Further, in the current study, the participants who had their first exposure to internet pornography when they were less than 10 years of age had a significantly higher level of porn consumption than participants who had their first exposure to pornography between 15–18 years of age or above 18 years.

As a result, as the age of first exposure to pornography decreased, the problematic level of pornography use increased. Regarding the relationship between education and porn consumption, it is fascinating to note that as educational levels increased, pornography consumption decreased. In addition, participants who were uncoupled (single), young adults, and had a high level of internet use were also significantly more likely to consume internet pornography than others in their demographic category.

On the other hand, the relationship between the level of porn consumption and the demographic variable of religious attendance revealed something unexpected. This study revealed the level of pornography use increased as the frequency of religious attendance increased among participants, contrary to previous research that found religiosity to be a significant predictor of pornography consumption (Rasmussen & Bierman, 2016; P. J. Wright, 2013b) and the negative correlation between porn consumption and religiosity (Butler et al.,

2018; Cranney et al., 2018; Hardy et al., 2013; Leonhardt et al., 2018; Perry & Hayward, 2017; Rasmussen & Bierman, 2016). A few assumptions could be formulated considering this unexpected discovery. One possible explanation is that mere religious attendance does not necessarily imply a person's religiosity. Another plausible hypothesis is that there is a positive relationship between strict religious values on sexuality and sexually deviant online behavior among collectivistic communities such as Asian Indians.

Research Question 2

The second research question asked: Is there a significant association between internet pornography use, loneliness, and attachment patterns among Asian Indian American young adults and adults? The following conclusions were drawn based on the stated research question and data analyses in Chapter 5. I used Pearson correlation (including a partial correlation), multiple regression, and one-way MANOVA to examine the relationships between the scores of pornography consumption use, loneliness, and the two dimensions of adult attachment styles (i.e., attachment anxiety and attachment avoidance), and I found several statistically significant relationships among them. Consistent with previous literature on pornography consumption (Efrati & Amichai-Hamburger, 2019; Butler et al., 2018; Yoder et al., 2005), I also observed a statistically significant positive correlation between loneliness and pornography consumption.

The associations between porn consumption, loneliness, and the dimensional factors of attachment styles were also studied. The relationship between porn consumption and attachment anxiety was found to have a significant but mildly positive correlation. Loneliness and attachment anxiety, on the other hand, had a significant and strong positive correlation. However, no significant correlation was found between porn consumption and attachment avoidance. Consistent with previous research (Berlin et al., 1995; Bogaerts et al., 2006), the

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results of this study validated the significant correlation between attachment anxiety and loneliness and found that attachment anxiety was more conducive to loneliness than attachment avoidance.

In a broader sense, the results of the statistically significant correlation between attachment anxiety (i.e., insecure attachment style) and porn consumption aligned with the findings of Weisskirch and Delevi (2011), who discovered that higher attachment anxiety was associated with a positive attitude toward sexting (i.e., texts that solicit sexual activity), and with those of Armstrong and Mellor (2013), who found participants who consumed internet child pornography reported significantly higher levels of attachment anxiety.

Loneliness, attachment anxiety, gender, frequency of religious attendance, and age of first exposure to pornography were all statistically significant predictors of internet pornography consumption in this study. However, other predictor variables, such as attachment avoidance, age, marital status, education, and internet use, did not significantly contribute to predicting the level of pornography. It was unexpected that attachment avoidance (i.e., the negative other image) did not contribute significantly to the prediction of pornography consumption.

Furthermore, participants' combined scores of loneliness and pornography consumption, as measured by the UCLALS3 and the PPCS, respectively, significantly differed in their attachment patterns; that is, depending on the attachment styles of the participants, their levels of porn consumption and loneliness varied considerably. Participants with insecure attachment styles (i.e., fearful, preoccupied, and dismissive) tended to consume pornography and experience loneliness significantly more than those with secure attachment styles. When the effects of dependent variables (i.e., loneliness and porn consumption) were examined separately, I found participants with anxious and fearful attachment patterns had significantly higher scores than

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participants with secure attachment on their levels of pornography consumption. These results align with previous literature (Efrati, 2018; Efrati & Amichai-Hamburger, 2019; Niazof et al., 2019) that found individuals with an anxious attachment style had greater consumption of online pornography and compulsive sexual behavior than those with a secure attachment style.

Research Question 3

Research Question 3 asked: How do loneliness and attachment style affect the level of internet pornography use among the U.S.-born and immigrant Asian Indian American young adults and adults? In this study, I used path analysis to investigate the relationships among the three variables in a sample of 327 participants. The model revealed a statistically significant path between attachment anxiety and porn consumption when mediated by loneliness (first assumption). Loneliness was found to play a stronger mediation role in the path between attachment anxiety and porn consumption than in the path between attachment avoidance and porn consumption. Furthermore, the relationship between attachment anxiety and loneliness was statistically significant when mediated by the level of porn use (third assumption). In short, the statistical results of the first and third assumptions of this structural equation modeling underlined the bidirectional relationship between porn consumption and loneliness.

The findings align with Efrati and Amichai- Hamburger's (2019) study, which looked at the psychological factors behind online sexual behavior in 713 Israeli adolescents. Efrati and Amichai-Hamburger discovered that attachment anxiety was important in understanding the impact of loneliness on online sexual activity and the frequency of pornography use. However, in the current study, when mediated by pornography consumption, the indirect effect of attachment avoidance on loneliness was not statistically significant.

Thus, the analyses of the first three questions in the quantitative phase of the study contributed to the body of literature by providing a degree of understanding of the phenomenon of internet pornography consumption among a sample of Asian Indian American young adults and adults. The results of the quantitative phase indicated statistically significant associations between loneliness, attachment anxiety, and internet pornography use. A qualitative follow-up phase was carried out to provide more details into the findings associated with the research questions in the quantitative phase. A mixed methods research question (i.e., Research Question 4) guided the study's second phase.

Research Question 4

Research Question 4 asked: How do Asian Indian American young adults' and adults' descriptions of their lived experience with internet pornography inform the association between internet pornography use, loneliness, and attachment style? The purpose of the fourth research question was to describe the lived experience of participants to contextualize the initial quantitative results.

The results from the quantitative phase showed a consistent relationship between attachment anxiety (i.e., negative self-model) and pornography consumption when mediated by loneliness. Furthermore, a statistically significant relationship existed between attachment anxiety and loneliness when mediated by porn viewing, underlining the bidirectional relationship between porn consumption and loneliness. The results also highlighted the significant correlation between negative self-image (i.e., attachment anxiety) and porn consumption, as well as loneliness and porn consumption. However, a consistent relationship between negative other-image (i.e., attachment avoidance) and porn consumption was not found in the initial quantitative phase.

The essence of the experience—Tunnel Vision—highlighted the predominance of many negative emotions such as stress, anxiety, loneliness, curiosity, fear, and shame associated with participants' porn consumption. Loneliness seemed to be one of the prominent negative emotions participants felt before, during, and after watching pornography. Behind the formation of the core theme, Negative Emotions, loneliness played a pivotal role. The analyses of a few subthemes (e.g., Negative Feelings, Contrasting Feelings and Porn as a Coping Mechanism to Overcome Low Negative Emotions) also provided more details into the quantitative finding of a correlation between pornography and porn consumption.

In the present study, I interpreted attachment anxiety as a negative self-image and attachment avoidance as a negative other image based on Bartholomew and Horowitz's (1991) adult attachment model. Although the themes and core themes developed in this study do not directly elaborate the quantitative finding of the association between negative self-image (i.e., attachment anxiety) and pornography, the response of the participants about their self-image associated with watching pornography provided some insight into this relationship. All participants in this study had negative self-images associated with their porn consumption, such as being dirty and not good enough (George Wilder), having no self-worth (Potter), being a loser (Timothy Jordan), being weak (Gohan), feeling incomplete (Forrest), being incapable (Sabrina and Ganger), and feeling broken (Mary Smith).

However, in the qualitative phase, I could not determine if participants had these negative images before porn consumption. Although the quantitative study did not identify a significant relationship between negative other image (i.e., attachment avoidance) and porn consumption, the interviews shed some light on the relationship between the two. Five of the eight participants objectified the other in a dehumanized or sexualized way as a result of porn consumption.

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However, the emergent core themes and subthemes did not elaborate on the relationship between internet pornography consumption and attachment styles, as interview questions did not address the attachment styles of the participants.

Research Implications

The primary purpose of this mixed methods research design was to identify the relationship between internet pornography consumption, loneliness, and attachment styles among U.S.-born or immigrant Asian Indian young adults and adults in the United States, thereby addressing the gaps in the literature. Ethnic minority groups have not been equitably represented or specifically addressed in the U.S. social science research on pornography consumption. This study appears unique, as I endeavored to address the research gap by examining internet pornography consumption among an underrepresented ethnic minority group in the United States, Asian Indian Americans. The fact that I sought to investigate a sensitive topic like internet pornography consumption among Asian Indians has significant research implications because any discussion of sexuality is taboo among the target population.

First, examining the relationship among three variables—internet pornography use, loneliness, and attachment styles—has been underexplored in the research. Previous research has demonstrated the bivariate relationship between loneliness and internet pornography use (Butler et al., 2018; Yoder et al., 2005), internet pornography use and attachment styles (Efrati, 2018; Faisandier et al., 2012), and insecure attachment patterns and loneliness (Borawski et al., 2021; Faisandier et al., 2012; Spence et al., 2020). However, I found only one multivariate study (Efrati & Amichai-Hamburger, 2019) that explored the link between attachment difficulties and internet pornography use in individuals with loneliness.

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In the current study, I attempted to address this research gap by exploring the tripartite relationship between attachment styles, loneliness, and internet porn consumption and found the path between attachment anxiety and internet pornography consumption was significant when mediated by loneliness. I also found a strong significant relationship between attachment anxiety and loneliness when mediated by porn consumption, thus indicating a bidirectional relationship between loneliness and internet porn consumption in participants with attachment anxiety.

Second, this study gave a voice to an underrepresented ethnic minority group in the literature by conducting follow-up semistructured in-depth interviews. Giving voice to the voiceless is also an ethical call of any social science subject from the social justice research perspective. As the quantitative phase of this study did not include participants' voices, there was also a need to use a qualitative approach to examine the phenomenon in more detail, especially in terms of distinct voices and participant perspectives. In the present study, I attempted to achieve this research goal by incorporating a qualitative follow-up phase employing an explanatory sequential mixed methods design (Creswell & Plano Clark, 2018). The qualitative findings shed light on the relationship between loneliness and internet pornography consumption and the relationship between negative self-image and pornography consumption.

Third, this mixed methods study demonstrates how a multifactorial theoretical approach can be used to investigate a complex phenomenon like internet pornography consumption and its relationship with two potential triggers. In this study, I integrated insights from the addiction model and the sexual script theory into the attachment theory of Bowlby (1969) and Ainsworth (1973) to provide a broad theoretical framework for this multifaceted phenomenon. Traditional theoretical models for understanding sexual behaviors were mostly single-factor theories (e.g., psychoanalysis, cognitive, and attachment theories). However, single-factor theories have a

limited scope for explaining internet pornography use in relation to various potential triggers. Among these single-factor theories, attachment theory was predominantly used to explain sexual behavior on the online platform (D'Arienzo et al., 2019; Efrati & Amichai-Hamburger, 2019; Eichenberg et al., 2017). Recently, the literature has used new single-factor theories, such as the addiction model (Love et al., 2015) and the sexual script theory (Butler et al., 2018), to explain internet pornography consumption.

Therefore, I attempted to fulfill the academic demand for constructing a multifactorial framework in this study by combining attachment theory with the addiction model and sexual script theory. Through the lens of attachment theory, I investigated the relationship between attachment issues (i.e., attachment anxiety) and pornography consumption. Griffith's (2005) addiction model was used to assess the level of internet pornography consumption of the participants using the PPCS. A core theme that emerged in the qualitative phase (i.e., Powerlessness and Out of Control) also provided insight into the relapse phase of this addictive behavior, as participants could not resist watching pornography despite their efforts.

Understanding the phenomenon through the lens of sexual script theory was also beneficial. The subtheme, "Objectification," sheds light on how watching pornography can influence the sexual script of a person (i.e., eroticism and objectification; Butler et al., 2018). Participants reported viewing the other as an object of sex rather than as a person, and many participants had sexual fantasies after watching porn (in the cases of Potter, Granger, Forrest, George Wilder, and Timothy Jordan). Given the multifaceted and complex nature of this research problem, a multifactorial theoretical framework seemed a good choice in this study.

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Clinical Implications

From the clinical perspective, the study's findings should be an incentive for mental health professionals to provide unique and effective interventions or empirically supported treatments (Herbert, 2015; Sheperis et al., 2017) to the problematic porn consumption among Asian Indians in the United States, thereby contributing to the field of mental health counseling. Incorporating the research's insights will improve counselors' multicultural competence, allowing them to avoid using a predominantly Western perspective when counseling clients from this ethnic minority group (Robinson-Wood, 2016). I provide six critical recommendations for mental health professionals to consider when dealing with clients who experience problematic pornographic consumption, especially those from this ethnic minority group.

First, mental health professionals need to understand anything related to sexuality, including porn consumption, is taboo among this ethnic group and to be aware of their responses as counselors while inquiring about clients' porn consumption. Second, findings demonstrated the probability of higher consumption of porn use among Asian Indian young adults if they were exposed to pornography intentionally or unintentionally at an early age—the earlier the first exposure to pornography, the higher the consumption of porn in later life. Therefore, clinicians could use the information about the client's age of first exposure to pornography to make assumptions about the impact of porn consumption on the client's current life.

Third, clinicians also need to know education has a substantial impact on porn consumption, as lower levels of education predicted higher consumption of porn use. Because a high educational level has a mitigating effect on porn consumption, this information about education could also help counselors conceptualize the cases of clients who struggle with problematic internet pornography use.

Fourth, clinicians should be aware of the impact of religious practices on clients with problematic porn consumption. This study demonstrated higher consumption of pornography was associated with participants' higher attendance of religious services. This discrepancy between religious practices and porn viewing did not corroborate with the findings from the previous literature that religiosity had a buffering effect on pornography consumption (Perry & Hayward, 2017; Rasmussen & Bierman, 2016). The most likely explanation for this unexpected result is religious groups among Asian Indians are not often supportive of young adults exposing their vulnerability, and they may keep porn viewing as a secret behavior. Young adults could also fail to imbibe the essence of religious faith as they might attend religious services due to community pressure or parental control.

Therefore, if the clients from this community report being religious, clinicians must consider their autonomy from their parents and their free will in practicing their religion. Besides, clinicians need to assess the guilt and shame associated with their porn viewing and clients' "image of God," as a few volunteers in the semistructured in-depth interviews reported toxic images of God (e.g., a punitive image of God) rather than God as a merciful or compassionate father. Clients' guilt and shame can also be related to their toxic images of God. These negative images of God can drive clients to exaggerate their behavior—watching porn—as problematic and make them think they are addicted.

Fifth, the study's findings could also aid in providing mental health services to members of the broader public who consume problematic pornography. Loneliness, attachment anxiety, gender, and level of internet use were all statistically significant predictors of internet pornography consumption, of which clinicians should be aware. In addition, as the study's finding points to a significant path between negative self-model and porn consumption,

counselors must address the distorted self-image of young adults with problematic pornography consumption while counseling them. Enhancing the self-esteem of clients with problematic porn consumption has the potential to heal them. Clinicians should also be aware that the impact of attachment anxiety on porn consumption can be exacerbated in individuals when mediated by loneliness.

Finally, assessing the level of problematic pornography consumption through the addiction model could be an effective tool for clinicians for the case conceptualization of problematic porn users from this ethnic minority group and general population. Clinicians need to understand how the activation of brain reward pathways in someone who engages in uncontrolled internet pornography use is similar someone suffering from a substance addiction (Hilton & Watts, 2011). Due to this neurobiological connection between substance addictions and behavioral addictions (e.g., internet pornography addiction), clients with problematic pornography consumption can also benefit from psychotherapeutic interventions for substance use addiction, such as cognitive behavioral therapy and acceptance and commitment therapy (Fraumeni-McBride, 2019; Twohig & Crosby, 2010). To assess the level of pornography consumption among Asian Indians, the problematic pornography consumption scale developed by Bőthe et al. (2018) seems to be a good tool for mental health professionals as it employed Griffith's (2005) addiction model and indicated excellent reliability based on the current sample ($\alpha = .945$; George & Mallery, 2003).

Limitations of the Study

Despite its strengths, I have identified five limitations of this study that should be considered when interpreting and generalizing the findings. As the study followed a nonprobabilistic sampling method, I cannot claim the resulting sample was a good representative

of the Asian Indian young adults and adults in the United States. Participants in this study were mainly recruited from Asian Indian-based Christian churches and Asian Indian associations in the United States. As a result, the study's generalizability is limited (Sheperis et al., 2017). Achieving a fully representative sample was not feasible for me, given the limited resources and my lack of affiliation with the various subethnic Asian Indian groups in the United States.

The likelihood of confounding variables would be a second limitation of the study (Creswell, 2014; Krathwohl, 2009). Religiosity could be a confounding variable in the study, which I could not anticipate. As participants were mainly recruited through Christian religious institutions, a vast majority were very religiously oriented, with 71.3% considering religious faith as important or very important in their lives and 84.2% reporting they attended religious services at least weekly. Consequently, the data did not reflect participants who did not have a religious orientation or who did not attend religious services frequently. So, the results reflected only the data of the Asian Indian young adults and adults who were religiously focused. An examination of interview transcripts gave me the impression most participants were also Christians, particularly Catholics.

Another confounding variable could be pandemic-driven loneliness. I collected data in 2022, when the world was still dealing with the COVID-19 global pandemic, and loneliness was one of the most common outcomes (Alheneidi et al., 2021; Zattoni et al., 2020). Regarding the relationship between porn consumption and loneliness, I wanted to focus on loneliness borne of relationship stress caused by the lack of a close physical or emotional relationship as a potential trigger of porn consumption through the lens of attachment theory. Although loneliness was found to be a significant correlate of the study, I could not effectively distinguish the impact of pandemic-driven loneliness from emotional loneliness.

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Third, because pornography is a taboo subject for the Asian Indian community, social desirability bias might have resulted in responses skewed toward conformity to social norms (Sheperis et al., 2017), despite anonymity in the online Qualtrics survey. Besides, a few single-item self-report measures (e.g., first exposure to internet pornography and frequency of porn consumption) used in this study could amplify social desirability response bias (Arnold & Feldman, 1981) as single-item measures are susceptible to unknown biases in meaning and interpretation (Hoeppner et al., 2011). One probable reason for the discrepancy between the number of "never" responses to the demographic variable of frequency of internet porn consumption and "never" responses to the 18 items of the PPCS could also be social desirability bias. In short, because of the social stigma about sexual topics, participants' responses seemed to conform to specific social norms (Sheperis et al., 2017), suggesting some level of social desirability bias might have affected both the internal validity and external validity of this study and is considered a limitation (Latkin et al., 2017).

Fourth, because I did not include the religious affiliation (e.g., Christianity, Hinduism, Islam, Sikhism, Buddhism, and so forth) of the participants in the questionnaire, it was not possible to examine whether the results differed across individuals on their PPCS because of their religious affiliations. Finally, the absence of culturally appropriate assessment tools was another limitation of the study (Chadda & Deb, 2013; Shen, 2015; Sheperis et al., 2017; Sue et al., 2019). The assessment scales used in this study were developed in a western context. They were not modified to make them culturally appropriate for the Asian Indian ethnic minority in the United States.

Recommendations for Future Research

Given the paucity of research on internet pornography use among Asian Indian Americans, the findings of this study are significant. Future research is needed, however, to extend the results of this study through random sampling with a large sample size so that the study is more representative of the target population. It would be highly appropriate to conduct further research using a stratified random sample to provide adequate representation of various religious and subethnic groups among Asian Indians.

This research captured the experience of internet pornography use among Asian Indians in the United States. As similar studies are absent in Asian India, I advocate for the replication of the study with Asian Indians to identify the differences between Asian Indian Americans and Asian Indians, which will shed light on the impact of immigration on pornography consumption among young adults and adults. It would also be interesting to compare the results with other ethnic minority groups in the United States, like African Americans and Hispanic Americans, as comparative studies are helpful in understanding if culture makes any difference in the prevalence of internet pornography consumption and its association with various correlates. As this study did not address porn consumption among adolescents and teenagers, future research will also look for studies among them, as the current study revealed many participants had their first exposure to internet pornography when they were 12–15 years old. I also observed that the lower the age of early exposure to internet pornography, the higher the level of internet pornography consumption in later life. Besides, the teenage and adolescent years are crucial developmental periods and significant periods of sexual script formation.

The qualitative phase of the study explored several other correlates of internet pornography use from the participants' narratives (e.g., stress, depression, anxiety, fear,

curiosity, confusion, and excitement). Stress was considered a predominant negative emotion in the qualitative interviews. Future studies should address the relationship of internet pornography with other negative emotions, which are potential triggers of internet pornography consumption. Because this study showed a surprising finding that the higher the attendance of religious services, the higher the consumption of internet pornography, it is vital to find out the factors behind this incongruence from the religious standpoint. Therefore, another possible area of research is congruence or incongruence between religious teaching on sexuality and the sexually deviant sexual behaviors in an online platform.

Concluding Remarks

The current study contributes to the literature by providing an understanding of internet pornography consumption among Asian Indian American young adults and adults. This study shows internet pornography consumption can serve as a temporary coping solution to overcome negative feelings, especially loneliness, among Asian Indian young adults with high attachment anxiety or distorted negative self-image. Mental health professionals must take the knowledge gained from the present research and assist Asian Indian young adults struggling with the harmful effects of internet porn consumption. As participants with a higher frequency of religious attendance have a higher consumption rate of pornography, Asian Indian-based religious institutions should take some brave steps to address the stigma associated with sexuality and encourage members who are suffering from porn addiction to talk about their problem in a nonjudgmental space. It is also highly recommended to form fellowship groups like Porn Addicts Anonymous in religious institutions to encourage participants to talk about their addictive behavior and get support from the group to overcome it.

In this study, path analysis supported the relationship between attachment anxiety, loneliness, and online sexual behavior (Efrati & Amichai-Hamburger, 2019) as well as the association between loneliness and pornography consumption (Butler et al., 2018; Yoder et al., 2005). The model was based on a tripartite relationship between these variables in a newly constructed multifactorial theoretical structure by incorporating insights from Gagnon and Simon's (1973) sexual script theory and Griffith's (2005) six-phase addiction model into Bowlby's (1969) and Ainsworth's (1973) general attachment theory. However, given the correlational nature of the study, it is unclear whether loneliness and insecure attachment are causes of internet porn viewing. Longitudinal studies are needed to further explore the bidirectional associations over time between loneliness, insecure attachment patterns, and internet pornography consumption.

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Appendix A: History of Asian Indian Immigration to the United States

The historian John P. Williams (2019) wrote that the earliest recorded immigrant from India to the United States was a native from Madras, India, who voyaged to Massachusetts in 1790. Later, around 1820, a few Indian citizens reached the United States (Gonzales, 1986). The first Asian Indians were mainly students, sailors, and diplomats.

This section examines the immigration of Asian Indian population to the United States in the 20th century, which can be broadly divided into two: pre-1965 immigration to the United States. and post-1965 immigration to the U.S. The dividing line between these two periods is the Immigration and Nationality Act of 1965 that made drastic changes in the immigration policies. Following this is a brief discussion of immigration trends among Asian Indians in the 21st century.

Pre-1965 Immigration to the United States

This section mainly follows the historical finding of Das (2002), who depicted three phases of Asian Indian immigration to the United States before 1965. His rationale for the tripartite division of the pre-1965 immigration period was guided by the federal laws or court verdicts regarding immigration: 1917 U.S. Immigration Act, the Supreme Court verdict in the 1923 Baghat Singh Thind versus U.S. case, and the Luce-Cellar Act of 1946. The three phases of Pre-1965 Asian Indian immigration to the United States are described in the following sections.

First Phase of Immigration (1904–1917)

When anti-Indian sentiments escalated in Canada in 1904-1908, most Asian Indians entered the United States from British Columbia, Canada (Library and Archives Canada, n.d.; see also Hess, 1974). San Francisco in California became the new port of entry into North America when Asian Indian immigration to Canada stopped in 1908-1909 (Washington

University Libraries, n.d.; Valentine, 2011). But the new Asian Indian immigrants had to face the anti-Asian crusade led by the associations known as the "Asiatic Exclusion League" (AEL) and the "American Federation of Labor" (J. P. Williams, 2019) who were primarily organized to oppose Chinese and Japanese immigration in 1905 (Harvard University, 2020). Many Asians had to return to their native countries, and the immigration process ended with the 1917 U.S. Immigration Act, also known as the "Asiatic Barred Zone Act" (Lyon, 2015). This act also included India among countries under "barred zone" (Bagri, 2017; Hess, 1974) with the exemption of students, visitors, and diplomatic envoys from India. During this period, Asian Indians were referred to under the generic name of "Hindus," (Hess, 1974) although most were nonHindus, including Sikhs, Muslims, Parsis (Indian Zoroastrians), and Buddhists (Bacon, 1996). Sikhs, the first Asian Indian groups in California, were legally prohibited from bringing their wives and families to the United States. They had to marry Mexican women, creating a "Mexican Indian" culture in California (Hess, 1974; Valentine, 2011).

Second Phase of immigration (1923–1946)

The Supreme Court verdict in the *Baghat Singh Thind v. United States* case (1923) was pivotal in controlling Asian Indian immigration through the denial of citizenship and naturalization rights to these immigrants (Valentine, 2011). The U.S. Supreme Court declared that Bhagat Singh Thind, an Indian Sikh man who identified himself as an *Aryan* (a branch of Caucasian race; Jackson, 1869), was ineligible for naturalized citizenship in the United States. The Court ruled that although Indians might be Caucasian, they were not "white" in common man's understanding (J. P. Williams, 2019). The Thind decision led to the denaturalization of about 50 Asian Indian Americans who had earlier successfully applied for and received the U.S. citizenship (Hess, 1974; Immigration History, n.d.). During this period, many Asian Indians

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returned to India voluntarily, but others were deported (Hess, 1974). Between 1920 and 1940, around 3000 had to return to India (Hess, 1974). As a result, by 1930, the Asian Indian population had dropped to 3,130 and again to 2,405 in 1940 (Das, 2002; Hess, 1974). During this period, Asian Indian population ranked the lowest among all racial and ethnic group in the United States in the field of education and they were losing much of their cultural identity (Hess, 1974; J. P. Williams, 2019).

Third Phase of Immigration (1946–1964)

The Luce-Celler Act of 1946, a bill proposed by Republican Clare Boothe Luce and Democrat Emanuel Celler in 1943 and signed into law by U.S. President Harry Truman on July 2, 1946, allowed an immigration quota of 100 each for Asian Indians and Filipinos per annum (South Asian American Digital Archive, 2014; Shah, 2014). Shah opined the efforts of Indian nationalists in the United States accelerated the process of passing the Luce-Cellar Act. This bill permitted Asian Indians already existing in the United States to become naturalized American citizens as they were racially eligible (U.S. Congress, n.d.). Consequently, around 6,000 Indians entered the United States between 1947 and 1965 (Valentine, 2011). During the post-World War II period, the immigrants who came to the United States were primarily professional men and their families, and they settled down in San Francisco and New York (Das, 2002). Das reported the male-female ratio of the Asian Indian population from 1820 to 1910 was 98:2. With the relaxation of naturalization restrictions followed by the Luce-Celler Act, Asian Indian immigrants could bring their wives from India (Hess, 1974). As a result, in 1940, the male-female ratio in California ameliorated to 82:18 (Das, 2002).

Post-1965 Immigration to the United States

The Immigration and Nationality Act of 1965 (Hart-Celler Act), a bill passed by the 89th U.S. Congress and signed into law by President Lyndon B. Johnson, abolished the national origins quota system as it was against fundamental American values (History.com Editors, 2010). This Act ended the discrimination based on national origin, race, or ancestry for immigration to the United States and stimulated the rapid growth of immigration numbers (Hess, 1974; Kammer, 2015). A total of 91,237 Asian Indians arrived the United States as immigrants from India between 1966 and 1975 (Das, 2002). By 1990, the number of immigrants skyrocketed to 815,447 (U.S. Census Bureau, 1990). The Immigration Act of 1990, a federal law signed into law by George H. W. Bush, revised visa category limits to increase skilled labor immigration (Das, 2002). The author noted that the visa reformation resulted in the "brain drain" from India to the United States. U.S. universities admitted many Asian Indian students, making India one of the top five sending countries of international students (Israel & Batalova, 2021; Valentine, 2011). The author reported Asian Indians constituted the fourth-largest immigrant community in the United States in 2000.

U.S. Asian Indians in the 21st Century

According to the Migration Policy Institute (n.d.), the population of Asian Indian immigrants in the United States is rapidly increasing, with 2.7 million residents in the United States as of 2019 (Hanna & Batalova, 2020). When taken U.S.-born and immigrant population together, in 2019, Asian Indian Americans (4.61 million) were the second-largest Asian American group next to Asian Americans from China (5.4 million), and, in 2010, the third-largest American group (3.18 million) next to Asian Americans from China (4.01 million) and the Philippines (3.41 million; Budiman & Ruiz, 2021). Today, Asian Indian immigrants

comprise nearly 6% of the U.S. foreign-born population, making them the second-largest

immigrant group in the United States next to Mexicans and ahead of Asian immigrants from

China and the Philippines (Hanna & Batalova, 2020). A trajectory of immigrant policy changes

in the United States, particularly the removal of national origin quotas, the introduction of

temporary skilled worker programs, and the establishment of employment-based permanent

visas, enabled the Asian Indian community to become the second-largest immigrant group (Das,

2002; J. P. Williams, 2019; see also Hess, 1974; Shah, 2014). By 2015, South Asian Indians as a

whole (e.g., Bangladesh, Bhutan, India, Nepal, Pakistan, Sri-Lanka, Afghanistan, and the

Maldives; Badrinathan et al., 2021), and Asian Indians in particular, became the top recipients of

high-skilled H-1B temporary visas in the United States and were the second-largest group of

international students with 193,000 (18 %) Asian Indian students in the academic year 2019–

2020 after China (Israel & Batalova, 2021; J. P. Williams, 2019). Asian Indians have attained the

highest level of education and the highest median income among all national origin groups in the

United States (Budiman & Ruiz, 2021).

Appendix B: Recruitment Email to the Priests

September 8, 2022

Dear Father,

My name is Anish Baby, and I am a PhD candidate in Counselor Education and Supervision at St. Mary's University, San Antonio, Texas. My doctoral research focuses on identifying the prevalence of internet pornography use and its relationship to loneliness and attachment patterns among U.S.-born and immigrant Asian Indian Americans in the United States. For this study, I am looking for young adults between the ages of 18 and 35 who can read and understand English, have been in the U.S. at least for 10 years, and are willing to participate in a 15-minute online survey. I will not collect any information on those who participate except a small group who volunteer to be interviewed later; otherwise, I will not know who provided the information.

In order to obtain this information that will be helpful to the Asian Indian community, I would like to ask you to display the attached flyer on your church's announcement board, send the flyer to the various WhatsApp groups of the parish community, and read the attached announcement (Recruitment Script to Read at Faith Gatherings) during your faith community's gatherings.

Thanking you for your generous help.

Sincerely,

Anish Baby

Appendix C: Recruitment Script to Read at Faith Gatherings (e.g., Holy Qurbana/Mass)

(Please read this script when sharing information about the flyer)

Anish Baby is a PhD candidate in Counseling at St. Mary's University in San Antonio, Texas. As part of his doctoral research, he is conducting a study to identify the prevalence of internet pornography use and its relationship to loneliness and attachment patterns among U.S.-born and immigrant Asian Indian Americans in the United States. For this study, he is looking for young adults between the ages of 18 and 35 who can read and understand English, have been in the U.S. at least for 10 years, and are willing to participate in a 15-minute online survey. You will find the details of the study on the flyer displayed on the announcement board. The flyer will also be sent to the various WhatsApp groups of the parish. If you are interested in participating in this study, you can use the QR code or click the URL link in the flyer. Participation in this study is anonymous. The findings of this research will help counselors and mental health professionals support Asian Indian young adults concerned about their use of internet pornography use. Thank you!

Appendix D: Recruitment Email to the Leaders of Indian Associations

September 8, 2022

Indian Associations,

U.S.A.

Dear Sir,

My name is Anish Baby, and I am a PhD candidate in Counselor Education and Supervision at St. Mary's University, San Antonio, Texas. My doctoral research focuses on identifying the prevalence of internet pornography use and its relationship to loneliness and attachment patterns among U.S.-born and immigrant Asian Indian Americans in the United States. For this study, I am looking for young adults between the ages of 18 and 35 who can read and understand English, have been in the U.S. at least for 10 years, and are willing to participate in a 15-minute online survey. I will not collect any information on those who participate except a small group who volunteer to be interviewed later; otherwise, I will not know who provided the information.

In order to obtain this information that will be helpful to the Asian Indian community, I would like to ask you to upload the attached flyer to your website and send the flyer to your WhatsApp groups for Asian Indians. I am also including a recruitment script that can be read out loud to a group or you can use it as a notice or short story in a newsletter on your website. Thanking you for your generous help.

Sincerely,

Anish Baby

Appendix E: Recruitment Script for the Various Indian Associations

(Please read this script when sharing information about the flyer)

Anish Baby is a PhD candidate in Counseling at St. Mary's University in San Antonio, Texas. As part of his doctoral research, he is conducting a study to identify the prevalence of internet pornography use and its relationship to loneliness and attachment patterns among U.S.-born and immigrant Asian Indian Americans in the United States. For this study, he is looking for young adults between the ages of 18 and 35 who can read and understand English, have been in the U.S. at least for 10 years, and are willing to participate in a 15-minute online survey. You will find the details of the study on the flyer uploaded on the official website of the Indian association. The flyer will also be sent to the various WhatsApp groups of Indian associations. If you are interested in participating in this study, you can use the QR code or click the URL link in the flyer. Participation in this study is anonymous. The findings of this research will help counselors and mental health professionals support Asian Indian young adults concerned about their use of internet pornography use. Thank you!

Appendix F: Recruitment Flyer

The Relationship Between Internet Pornography Use, Loneliness, and Attachment Patterns Among Asian Indian Young Adults and Adults

The goal of the study is to identify the prevalence of internet pornography use and its relationship to loneliness and attachment patterns among the Asian Indian young adults and adults in the U.S.

Who can Participate?
- U.S-born or immigrant young adults in the U.S.
- 18–35 years of age
- Those who can read and understand English

An Anonymous Online Survey

How can you participate?

- Use the QR Code (Please use the camera in your mobile to scan the QR code):

Lead Researcher

Anish Baby, MA, MS

St. Mary's University

Secondary Investigator

Carolyn Tubbs, Ph.D.

Appendix G: Consent Form

Dear Participant,

My name is Anish Baby, and I am a Ph.D. student in Counselor Education and Supervision at St Mary's University, San Antonio, Texas. I am working on a dissertation study entitled: The relationship between internet pornography use, loneliness, and attachment styles among the U. S. born and immigrant Asian Indian young adults and adults.

The Purpose of the Study

Internet pornography use is highly prevalent in society. Studies prove that internet pornography use is associated with negative well-being and unfavorable relationship outcomes, including depression, increased stress and anxiety, loneliness, decreased life satisfaction, low self-esteem, and so forth. Although internet pornography consumption is found most common among the younger demographics in the U.S. (Sinković et al., 2013), the same age category belonging to racial/ethnic minority groups in the U.S., like Asian Indian Americans, are underrepresented in research (George et al., 2014). Today, Asian Indians are the second-largest group among Asian Americans next to Chinese Americans in the U.S. They alone comprise nearly six percent of the U.S. foreign-born population, making them the second-largest immigrant group in the country next to Mexicans (Hanna & Batalova, 2020). The noticeable increase of the Asian Indian population in the U.S. and the lack of research on internet pornography among the U.S-born and immigrant Asian Indian American young adults point out the need for the current study. The study's findings will be a helpful tool for the mental health professional to provide evidence-based practice to the problematic internet porn users among this population. The study also wants to analyze how attachment style and loneliness are related to internet pornography use among the same people.

Procedures

Please read the consent form carefully, and should you have any questions or concerns, please contact me, Anish Baby, by phone at ████████████ or by email at (████████████████).

Voluntary Participation and Anonymity

If you decide to participate, your participation is **<u>completely voluntary.</u>** Completion of the survey will take about 15 minutes.

If you are not comfortable with any questions, you have the right to withdraw from the study at any time without consequence or penalty. To protect your confidentiality, no identifiers will be collected. Your responses are **<u>completely anonymous.</u>** If you would like to participate in an interview with the researcher to talk about the experience of internet pornography and its relationship with loneliness and attachment styles, you will have an opportunity to indicate your interest and to provide contact information.

What You Will be Asked to Do

If you decide to participate in this study, you will be asked to:

1. Complete qualifying questions to determine if you are eligible for the study (age, Asian Indian identity, fluency in English).

2. Complete questions about your age, gender, general internet use, etc.

3. Answer questions on your relationships, loneliness, and use of pornography.

Towards the end of this survey, you will be asked if you would like to participate in an interview. If you wish to participate, you will be asked to provide your contact details (name/pseudonym, email address, and mobile number), which will allow me to contact you. I will ask permission to access your data, and confidentiality will be thoroughly maintained. I will contact you for the interview 3–4 weeks after you complete the survey and let you know if you are chosen for the

interview and will arrange a time for interview. However, if you choose not to participate, your responses remain completely anonymous.

Incentive or Compensation

There is no incentive for participating.

Benefits of Research

You will not receive any direct compensation for participating. However, participants may ultimately benefit from the outcomes of this project since the findings of this research will help the counselors and mental health professionals to support the Asian Indian young adults who suffer from problematic use of internet pornography use by finding its association with loneliness and attachment styles.

Risk Determination

As a result of participating in this research, you might feel a bit uncomfortable while answering some of the questions about your pornography use. The discomfort should only last a short time. However, if you experience prolonged discomfort, you can contact SAMHSA National Helpline at (800) 662-4357. Other porn addiction hotlines available are The Boys Town National Hotline at (800) 448-3000 and Sex Addicts Anonymous at (800) 477-8191.

Confidentiality and Records Management

If you choose to participate only in the online survey, all collected data and your identity will be anonymous; that is, I do not know who you are since I will not have your name or any identifying information. If you choose to participate also in the interview, your information will be kept confidential because I will encrypt the information you disclose. When data collection is completed, I will store the encrypted data on secure servers, report data in aggregate, and use fictitious names in articles and future presentations. We will redact all personal information in

the final phase of editing prior to publication. Furthermore, once the data collection and analyses are completed for the project, all information will be kept by me and my advisor in locked file cabinet and password-protected computers for 5 years and then destroyed, according to federal regulations.

Whom to Contact With Concerns About the Study

If you have any further questions about this research study, please do not hesitate to contact me, Anish Baby, ██), or my advisor, Carolyn Y. Tubbs, Ph.D. at her phone number ███████████████████████ ████████████████.

If you have any questions about your rights as a research subject or concerns about this research study, please contact the Chair, Institutional Review Board, St. Mary's University at (210) 436-3736 or email at IRBCommitteeChair@stmarytx.edu. All activities associated with research projects carried out by the researchers/investigators at St Mary's University are under the requirements and regulations of St Mary's University and the federal government.

Thank you again for your participation,

Sincerely,

Anish Baby, MA, MS

   *If you would like to keep a copy of this letter for your records, you can save a copy on your computer as a PDF, or you can print a copy by pressing (Ctrl + P) for a PC or by pressing (command + P) for a mac.

Please indicate your consent below.

By selecting **"Yes, I consent to participate"** you agree that you are <u>18 years or older (under 36 years old) U.S. born or immigrant Asian Indian immigrant</u> and you agree to your participation in this study

    ___Yes, I consent to participate

    ___No, I do not consent to participate

Appendix H: Qualifying Questions

1. Can you read, understand, and speak English?

   __Yes, I can

   __No, I can't

2. Are you above the age of 18 and under the age of 36?

(On your 18th birthday you are 18 years old, at any time beyond that point you are over 18)

   __Yes, I am

   __No, I am not

3. Are you a U.S. born Asian Indian or an immigrant Asian Indian in the U.S.?

("U.S.-born Asian Indians" refers to Americans by birth with ancestry from India, and

"Immigrant Asian Indian Americans" refers to people born in India and migrated to the U.S.

The latter also includes people born outside India (e.g., the Gulf countries) with ancestry

from India and migrated to the U.S.)

   __Yes

   __No

4. Have you lived in the U.S. for a period of 10 years or more?

   __Yes

   __No

Appendix I: Demographic Questionnaire

Please take a few minutes to answer the following demographic questions

What is your age?
- o   Please choose a number from 18 to 35.

What is your birthplace country?
- o   United States of America
- o   India
- o   Other (please write the name of the country)

What is your sex/gender?
- o   Male
- o   Female
- o   Non-binary/third gender
- o   Other (please specify)
- o   Prefer not to say

What is your current marital status?
- o   Single (never married)
- o   Married or in a domestic relationship
- o   Divorced
- o   Separated
- o   Widowed
- o   Other (please specify)

What is the highest degree or level of school you have completed? (If you're currently enrolled in school, please indicate the highest degree you have received).
- o   Less than a high school diploma
- o   High school degree or equivalent (e.g., GED)
- o   Some college, no degree
- o   Bachelor's degree (e.g., BA, BS)
- o   Master's degree (e.g., MA, MS, MEd)
- o   Professional degree (e.g., MD, DDS, DVM)
- o   Doctorate (e.g., PhD, EdD)

What is your current employment status?
- o   Employed/self-employed
- o   Unemployed
- o   Student
- o   Student and employed (full time/part time)

How important is religious faith to you?
- o Not important
- o Slightly important
- o Moderately important
- o Important
- o Very important

How often do you attend religious services?
- o Never
- o Once a year
- o Once a semester
- o Once a month
- o Once a week
- o More than once a week
- o Daily

How much time per day do you spend on the internet?
- o Less than an hour
- o 1–2 hours
- o 3–4 hours
- o 5–7 hours
- o 8–10 hours
- o 11–13 hours
- o 14 or more hours

How often do you typically view pornography?
- o Never
- o Once a year
- o Once a semester
- o Once a month
- o Once a week
- o More than once a week
- o Daily

How old were you when you were first exposed to internet pornography?
- o Less than 10 years old
- o 10–12 years old
- o 13–15 years old
- o 16–18 years old
- o 19 years old or older
- o Never been exposed

How often do you use drugs (*not including alcoholic beverages*) other than those required for medical reasons?

- o Never
- o Once a year
- o Once a semester
- o Once a month
- o Once a week
- o More than once a week
- o Daily
- o Several times a day

How often do you consume alcohol?

- o Never
- o Once a year
- o Once a semester
- o Once a month
- o Once a week
- o More than once a week
- o Daily
- o Several times a day

Instructions (RQ1): Following are four general relationship styles that people often report. Place a checkmark next to the letter corresponding to the style that best describes you or is closest to the way you are.

_____ A. It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.

_____ B. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.

_____ C. I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

_____ D. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Instructions (**RQ2**): Now please rate each of the relationship styles above to indicate how well or poorly each description corresponds to your general relationship style.

Style A
        ___Not at all like me
        ___Not much like me
        ___Somewhat like me
        ___Mostly like me
        ___Very much like me

Style B
        ___Not at all like me
        ___Not much like me
        ___Somewhat like me
        ___Mostly like me
        ___Very much like me

Style C
        ___Not at all like me
        ___Not much like me
        ___Somewhat like me
        ___Mostly like me

___Very much like me

Style D

___Not at all like me
___Not much like me
___Somewhat like me
___Mostly like me
___Very much like me

The Relationship Questionnaire (Bartholomew & Horowitz, 1991) is in public domain and is openly available for scholarly research purpose at
http://www.sfu.ca/psychology/people/bartholomew/aarm/FAQ.html

Appendix K: Relationship Scales Questionnaire (RSQ)

Instructions: Please read each of the following statements and rate the extent to which you believe each statement best describes your feelings about close relationships.

_____Not at all like me
_____Not much like me
_____Somewhat like me
_____Mostly like me
_____Very much like me

1. I find it difficult to depend on other people.
2. It is very important to me to feel independent.
3. I find it easy to get emotionally close to others.
4. I want to merge completely with another person.
5. I worry that I will be hurt if I allows myself to become too close to others.
6. I am comfortable without close emotional relationships.
7. I am not sure that I can always depend on others to be there when I need them.
8. I want to be completely emotionally intimate with others.
9. I worry about being alone.
10. I am comfortable depending on other people.
11. I often worry that romantic partners don't really love me.
12. I find it difficult to trust others completely.
13. I worry about others getting too close to me.
14. I want emotionally close relationships.
15. I am comfortable having other people depend on me.
16. I worry that others don't value me as much as I value them.
17. People are never there when you need them.
18. My desire to merge completely sometimes scares people away.
19. It is very important to me to feel self-sufficient.
20. I am nervous when anyone gets too close to me.
21. I often worry that romantic partners won't want to stay with me.
22. I prefer not to have other people depend on me.
23. I worry about being abandoned.
24. I am somewhat uncomfortable being close to others.
25. I find that others are reluctant to get as close as I would like.
26. I prefer not to depend on others.
27. I know that others will be there when I need them.
28. I worry about having others not accept me.
29. People often want me to be closer than I feel comfortable being.
30. I find it relatively easy to get close to others.

The Relationship Scale Questionnaire (Griffin & Bartholomew, 1994a, b) is in public domain and is openly available for scholarly research purpose at
http://www.sfu.ca/psychology/people/bartholomew/aarm/FAQ.html

Appendix L: The University of California Los Anageles Loneliness Scale, Version 3

Instructions: The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described by circling one of the responses below. Here is an example: How often do you feel happy? If you never felt happy, you would respond "never"; if you always feel happy, you would respond "always."		N E V E R	R A R E L Y	S O M E T I M E S	A L W A Y S
1	How often do you feel that you are "in tune" with the people around you?				
2	How often do you feel that you lack companionship?				
3	How often do you feel that there is no one you can turn to?				
4	How often do you feel alone?				
5	How often do you feel part of a group of friends?				
6	How often do you feel that you have a lot in common with the people around you?				
7	How often do you feel that you are no longer close to anyone?				
8	How often do you feel that your interests and ideas are not shared by those around you?				
9	How often do you feel outgoing and friendly?				
10	How often do you feel close to people?				
11	How often do you feel left out?				
12	How often do you feel that your relationships with others are not meaningful?				
13	How often do you feel that no one really knows you well?				
14	How often do you feel isolated from others?				
15	How often do you feel that you can find companionship when you want it?				
16	How often do you feel that there are people who really understand you?				
17	How often do you feel shy?				
18	How often do you feel that people are around you but not with you?				
19	How often do you feel that there are people you can talk to?				
20	How often do you feel that there are people you can turn to?				

Appendix M: Permission to Use the UCLALS3

You have my permission to use the UCLA Loneliness Scale in your research project.

Daniel W. Russell, PhD
Professor, Department of Human
Development & Family Studies
Iowa State University
Palmer Building
2222 Osborn Drive
Ames, IA 5011-1084
███████
███████

From: Baby, Anish <████████████████████>
Sent: February 21, 2022 8:00 PM
To: Russell Daniel W <████████████████>
Subject: Permission for UCLA Loneliness Scale, version 3

Hi Dr. Daniel Russell,

My name is Anish Baby, a doctoral student at St. Mary's University, San Antonio, Texas and also an international student from India. I am doing my dissertation on the relationship between Loneliness and problematic pornography use through the lens of attachment theory among Asian Indian Americans. I was wondering **if I could have your permission to use your Revised University of California Los Angeles, Loneliness Scale, version 3 (UCLA- Loneliness Scale, version 3) in my study**?

I was so impressed by your scale and happy to see that many have used and are still using in research.

I really appreciate any help you can provide.

Anish

Instructions: Please, think back to the last 6 months and indicate on the following 7-point scale how often or to what extent the statements apply to you. There is no right or wrong answer. Please indicate the answer that most applies to you.

	1-NEVER	2-RARELY	3-OCCASIONALLY	4-SOMETIMES	5-OFTEN	6-VERY OFTEN	7-ALL THE TIME
1. I felt that porn is an important part of my life	O	O	O	O	O	O	O
2. I used porn to restore the tranquility of my feelings	O	O	O	O	O	O	O
3. I felt porn caused problems in my sexual life	O	O	O	O	O	O	O
4. I felt that I had to watch more and more porn for satisfaction	O	O	O	O	O	O	O
5. I unsuccessfully tried to reduce the amount of porn I watch	O	O	O	O	O	O	O
6. I became stressed when something prevented me from watching porn	O	O	O	O	O	O	O
7. I thought about how good it would be to watch porn	O	O	O	O	O	O	O
8. Watching porn got rid of my negative feelings	O	O	O	O	O	O	O
9. Watching porn prevented me from bringing out the best in me	O	O	O	O	O	O	O
10. I felt that I needed more and more porn in order to satisfy my needs	O	O	O	O	O	O	O
11. When I vowed not to watch porn anymore, I could only do it for a short period of time	O	O	O	O	O	O	O
12. I became agitated when I was unable to watch porn	O	O	O	O	O	O	O
13. I continually planned when to watch porn	O	O	O	O	O	O	O
14. I released my tension by watching porn	O	O	O	O	O	O	O
15. I neglected other leisure activities as a result of watching porn	O	O	O	O	O	O	O
16. I gradually watched more "extreme" porn, because the porn I watched before was less satisfying	O	O	O	O	O	O	O
17. I resisted watching porn for only a little while before I relapsed	O	O	O	O	O	O	O
18. I missed porn greatly when I didn't watch it for a while	O	O	O	O	O	O	O

Appendix O: Permission to Use the Problematic Pornography Consumption Scale (PPCS)

Hi Anish,

Thank you for your email and interest in the PPCS. Your dissertation sounds really interesting. You have my permission to use it in your research. Don't hesitate to contact me if anything else is needed.

Good luck!

Bea

From: Baby, Anish <ababy@mail.stmarytx.edu>
Sent: February 20, 2022 9:18 PM
To: Bőthe Beáta <bothe.beata@ppk.elte.hu>
Subject: Permission to use PPCS

Hi Dr.Bőthe,

My name is Anish Baby, a doctoral student at St. Mary's University, San Antonio, Texas. I am doing my dissertation on problematic pornography use among Asian Indian Americans. I was wondering **if I could have your permission to use your Problematic Pornography Consumption Scale (PPCS) in my study**?

Thank you very much in advance,

Yours Sincerely,

Anish

Appendix P: Interview Protocol

To participants at the beginning of the interview:

Thank you very much for your willingness to participate in an interview on such a personal topic and, thereby, partnering with me in this research to look deeper into an issue that many would prefer to hide and to lend your insights into ways to help others. As you understand from the online survey, my PhD dissertation attempts to identify the relationship between attachment patterns, loneliness, and pornography use. The purpose of this interview is to understand your experience of internet porn consumption which will provide more detail into the results of the initial online survey. I have some questions about this topic, but feel free to add information I need to cover. The questions I am asking are meant to help researchers better understand how counselors and other mental health professionals can help Asian Indian young adults and adults. I will try my best to make the interview comfortable for you.

Once again, I want to highlight that your information will be highly confidential because I will encrypt the information you disclose. Throughout this interview, you will find that I will be using the pseudonym you provided as part of your contact information. Currently, that name links your survey data with this interview so I can engage in additional analysis for those who chose to be interviewed. There is no way for me to obtain your real name or identifying information for these data, and I will not ask you for this information. Once I transcribe this interview from this recording, I will destroy the video recording and only keep the transcript with your fictitious name. When data collection is completed, I will store the encrypted data on secure servers, report data in aggregate, and use different fictitious names in articles and future presentations. I will also destroy the contact information you provided. Furthermore, once the data collection and analyses are completed for the project, all the deidentified information will be

kept by my advisor and me in a locked file cabinet and password-protected computers for 5 years

and then destroyed, according to federal regulations.

As I informed you earlier, this interview will last up to 60–90 minutes. If you need to

take a break during the interview, we can take time to pause and then return to the interview.

Throughout the interview, there will be opportunities to take a break and talk about any negative

feelings you might have. If you feel uncomfortable with a question, feel free to say that you

would like to skip over it. If you need clarification about the intent of a question, we can discuss

it, or I will try to re-phrase it. If, at any point, you wish to stop the interview entirely or wish to

withdraw as a participant, you are under no obligation to continue. We will stop the interview

and provide you with an opportunity to debrief.

Do you still consent to the interview? [If 'yes," then email the consent at that moment.]

Shall we begin?

Questions about the first exposure to pornography

1. From the online survey, I understand that you had the first exposure to internet pornography

   use when you were in _____ age group [specify the age group from the online data]. Can you

   tell me about the context in which you were exposed to this internet pornography?

   a) Was this your first exposure to pornography, in general, or your first exposure to

      pornography via the internet? If other types of pornography, do you mind sharing the

      other types?

   b) What words would you use to describe the feelings you had that day?

   c) What words would you use to describe the thoughts you had that day?

d) According to some research, it is plausible that early exposure to pornography leads to higher consumption later in life. In your opinion, what impact your first exposure to pornography has made on your later life?

Questions about a recent internet porn viewing

2. Now I may ask you questions about your feelings, thoughts, and behavioral patterns related to pornography watching. Before I go to those questions, please bring to your mind a recent experience of watching pornography from your life.

   2.1. Please narrate the context (or the factors) that led you to watch pornography that day?

   2.2. Now, I will ask questions about your thoughts, feelings, and behavioral patterns based on that experience of pornography use?

      a) Describe the thoughts that moved you toward watching internet pornography that day? If you cannot remember the thoughts precisely, can you imagine what they might have been?

      b) Describe the feelings (emotions) that were present before you started watching it? If you cannot remember the feelings precisely, can you imagine what they might have been?

         • [If they do not understand the question, I will ask them, "Can you identify at least three intense emotions you had before you started watching it?"]

      c) With those thoughts and those feelings, do you remember what you did immediately before you watched porn?

      d) What words would you use to describe the feelings that are present while you are watching internet pornography?

e) What words would you use to describe your thoughts that are present while you are watching internet pornography?

f) What words would you use to describe what were your feelings after watching pornography?

g) What thoughts were you aware of after viewing pornography?

h) What did you do immediately after watching pornography?

2.3. Let me ask questions about your feelings about yourself and others after porn viewing?

a) What words would you use to describe your feelings about yourself after watching internet pornography?

- Does watching pornography change your feelings about who you are?

- Do you feel, because of pornography use, others are looking at you differently?

- How do you feel about yourself compared to others who do not watch pornography?

b) What words would you use to describe your feelings about others after watching internet pornography?

- Does watching pornography change your feelings about who others are?

Some other general questions about internet porn viewing

3. A few studies pointed out that young adults watch pornography due to curiosity about sexuality. However, several other studies highlighted negative emotions, such as increased stress, anxiety, loneliness, etc., are the reasons for watching pornography. In your analysis, what are the reasons you continue watching internet pornography?

4. There is growing evidence from the research to conclude that internet pornography use leads to negative well-being, like depression, loneliness, low self-esteem, and life dissatisfaction. It can also lead to unfavorable relationship outcomes like marital instability, decreased feelings of intimacy, and so forth. On the contrary, a few studies have pointed out the positive effects of pornography, such as building self-esteem and increased self-knowledge. Please describe how internet pornography use affects different areas of your life (e.g., work, study, and relationship with parents, siblings, and friends).

   a) What gains and losses have you had because of porn consumption? (To help them reflect upon their response, I may also ask, "Is that the way you wanted to be?")

[If they say more losses than gains, I may also ask, "Have you ever tried to stop watching pornography"?]

5. Is there any question I did not ask you that you would like to answer?

6. Is there anything else you would like to add before we end this interview?