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## AN EXPLORATION OF SYMPTOM SEVERITY AND SUICIDAL IDEATION WITHIN A SEX ADDICTION SAMPLE

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AN EXPLORATION OF SYMPTOM SEVERITY AND SUICIDAL IDEATION  
WITHIN A SEX ADDICTION SAMPLE

by

Emily A. Cordova

A Thesis  
Submitted to the Graduate School,  
the College of Education and Human Sciences  
and the School of Psychology  
at The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Master of Arts

Committee:

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## ABSTRACT

Currently sex addiction is not recognized as a mental disorder in the DSM-5-TR, yet it continues to negatively affect a significant number of people annually. The following study aimed to explore the relationships between sex addiction, attachment styles, and suicide-related behavior, and other psychopathology related symptoms as measured by the MMPI-3. Using data from the MMPI-3, the Sexual Dependency Inventory-4<sup>th</sup> Edition, the Sexual Addiction Screening Test-Revised, and the Experiences in Close Relationships Scale-Revised, this study explored the relationship between attachment style and sex addiction symptoms, suicidality, and sex addiction severity in a sample of 222 men seeking treatment for a sex addiction diagnosis. Further, to investigate differences in the experience of sex addiction and attachment styles, a hierarchical multiple regression was conducted. Results revealed multiple differences in psychopathology presentation among attachment groups. Further, the regression revealed that the anxiety subscale was positively related to the SDI diagnostic criteria score and the SAST-R core score. The interactions term (suicide-related behaviors and attachment subscales) was found to be non-significant. Possible implications of this study include further understanding of the etiology and psychopathology presentation of sex addiction.

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## DEDICATION

I am forever grateful to my family, Teresa Cordova, Margarita Martinez, Jose A. Torres, and Nelida Torres, for their constant support, sacrifices, and unconditional love they have provided throughout my life. None of this would have been possible without you. This work is dedicated to them. I would also like to dedicate this project to my faith, to God, I am here because of His love; with Him all things are possible. Further, this work would have not been possible without my community and support system in Hattiesburg, California, and Oaxaca, Mexico. I am where I am because of your love, support, and prayers that are felt thousands of miles away. Lastly, this is dedicated to the Latine/Hispanic and immigrant communities; you risk it all for a better future. ¡Sí se pudo!

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## CHAPTER I – INTRODUCTION

Sex addiction is considered a controversial topic within the clinical/psychiatric realm, with many arguing sex addiction is not a diagnosable condition (Karila et al., 2014). However, the prevalence of sex addiction within the U.S population seems to be increasing, with an estimated 3-5% of the adult population affected (Weiss, 2004); that is approximately 10,000,000 individuals. Although there is not yet a consensus on the specific definition of sex addiction, it is defined by the American Society of Addiction Medicine (2011) as sexually arousing fantasies, urges, and behaviors that last and persist over a period of at least six months, even with efforts to stop, and causing impairment in the personal, social, and professional life of the individual. Although sex addiction is not a recognized disorder by the *Diagnostic and Statistical Manual of Mental Disorders-5-Text Revision* (DSM-5-TR; American Psychiatric Association, 2022), compulsive sexual behavior is recognized as a global diagnosis by the World Health Organization (Grant et al., 2014) and is considered a mental disorder within the International Classification of Diseases, 11<sup>th</sup> Revision (ICD-11, characterized by an inability to control persistent sexual impulses or urges, making them repetitive and hard to control (World Health Organization, 2019).

Apart from a consensus on whether sex addiction is a disorder or not, there is also lack of developed and empirically supported treatment for those who seek professional help for problematic sexual behavior (Rosenberg, Carnes, & O'Connor, 2014; Maladain, Blanc, Ferreri, & Thibaut, 2020). The few treatments that do exist include pharmacology and/or psychotherapies such as cognitive behavioral therapy (Malandain et al., 2020). However, many researchers argue sex addiction needs to be understood better in order to

have it listed as an actual disorder in the DSM (APA, 2013; Kafka, 2014). One theory that shows promise in aiding our understanding sex addiction and its various forms/symptoms is attachment style theory, which has already been effectively utilized to understand and predict various psychopathology in adults and adolescents (Leedes, 1999).

There are various terms for problematic sexual behavior such as, “sexual impulsivity,” “hypersexuality,” “impulsive sexual behavior,” “dysregulated sexuality,” and more (Joannides, 2012). To this date there is still controversy on naming it as an addiction and there is no consensus as to what it should be named (Moser, 2011). While many researchers argue that it should be classified as a neurological disorder (Kraus et al., 2016; Phillips et al., 2015; Reid & Woolley, 2006), others argue that it should be considered a “behavioral” addiction without the use of a substance, like Internet-gaming disorder (O’Brien, 2013; Carnes et al., 2014 & 2010). The idea that individuals could be addicted to sex in a manner similar to gambling, shopping, etc. was first proposed by Carnes (1983). Since then, the research surrounding this controversial condition has evolved, however, not enough to be considered an actual diagnosis by the DSM-5. Before the release of the DSM-5, hypersexual disorder was being considered for placement the Sexual and Gender Identity Disorders section but ultimately was rejected (APA, 2013; Kafka, 2010; Reid et al., 2012). Kafka (2014) proposes that hypersexuality disorder was excluded from the recent version of the DSM because of the lack of empirical support and its potential misuse in legal settings.

A number of different sets of diagnostic criteria have been proposed for sex addiction, but for the purpose of the current study, we use Carnes et al. (2010; see Carnes

et al., 2014) criteria of sex addiction which includes failure to resist sex compulsions, tolerance, withdrawal symptoms, preoccupation with thoughts about sex, failure to quit, interference in daily activities and duties, continued problematic sexual behaviors despite in negative consequences, such as legal consequences and relationship dysfunction. Though there is debate about which symptoms should be included in the criteria for sex addiction, some core attributes common to all of the proposed diagnostic criteria are affect disturbance, preoccupation, loss of control, and relationship disturbance (Carnes et al., 2010 & 2014). These criteria were used for diagnosis of sexual addiction with the participants of the current study. Participants in the current study were being seen by certified sex addiction therapists (CSAT). The CSAT treatment approach was developed by Dr. Patrick Carnes, and thus Carnes et al. (2010, 2014) diagnostic criteria were used in these treatment setting. However, given that sex addiction this is not a diagnosis defined by the DSM, the diagnosis given to the participants is Sexual Disorder, not otherwise specified (APA. 2013).

Though there is debate on naming, most of the existing literature alternates between calling it hypersexuality, sexual impulsivity/compulsivity, dysregulated sexual behavior (Walton et al., 2017). Further, the core symptoms of all these disorders, which include excessive sexual fantasies, acting upon these fantasies, having difficulty stopping these fantasies and engaging in sexual behaviors, and significant impairment or distress in daily functioning, are very similar (Kraus et al., 2016). Currently the ICD-11 has included Compulsive Sexual Behavior under the “Impulse control disorders” and it is classified as a pattern of 6 months or more of repetitive sexual behavior, repetitive sexual

impulses and failing to control these impulses and behaviors (World Health Organization, 2019).

The majority of sex addiction studies use men as research participants, and thus there is comparably much less information on sex addiction on women and sexual minorities (Dhuffar & Griffiths, 2016; Aaron, 2012). Indeed, in addiction research more generally there are fewer women than men, especially in treatment and research settings (Dhuffar & Griffiths 2016; Lind et al., 2017). A recent study explored the relationship between emotional dysregulation and sex addiction in a college sample and found that prevalence rate of sex addiction in women (15.5%) was close to the prevalence rate in men (17.8%; Cashwell et al., 2017). In a study examining sexual orientation and gender differences in cybersex behavior and internet use among a treatment-seeking sample, Green et al. (2012) found that straight women engaged in a different types of isolative internet use behaviors, as measured by the Sexual Dependence Inventory-Revised, such as pornography use and preoccupation with sadomasochism compared to bisexual and heterosexual men. This could imply that women who engage in more severe sexual patterns and behaviors such as sadomasochism, could be overrepresented in treatment settings. Though there is some evidence suggesting that there are differences in sex addiction symptom presentation and severity between men and women, the current study will only explore symptoms severity in a sample of men. Due to a low quantity of women being participants of the original study, women were excluded from this study.

One of the many potential etiology pathways to sex addiction that have been explored is how early attachment affects functioning as an adult and more specifically how individuals with anxious and avoidant attachment are more likely to experience

difficulties in romantic relationships (Bowlby, 1979 & 1982). Hazan and Shaver (1987) first applied the attachment styles theory to adult romantic relationships and their work was informed by Bowlby (1969), who first proposed a psychodynamic-based theory of attachment styles to infants and their mothers. In the original theory, Bowlby observed that the style of care the parent or caregiver provides to the infant impacts how the infant attaches to the caregiver. Ainsworth and colleagues (1978), building upon the work of Bowlby (1969), proposed three styles of attachment: secure, anxious/ambivalent, and avoidant attachment (1978). Bartholomew and Horowitz (1991) proposed a fourth attachment style, fearful attachment, and renamed the other two attachment styles to what they are more commonly known as, dismissing avoidant (avoidant) and preoccupied (anxious/ambivalent); secure remained the same.

After Hazan and Shaver (1987) first proposed how attachment styles influence adult romantic relationships, researchers explored this theory as a possible mechanism for the development or expression of sex addiction. Overall, most studies have found that fearful avoidant and anxious attachment are the most common styles among individuals with sex addiction (Jore et al., 2016; Weinstein, et al., 2015; Weinstien et al., 2015; Bigras et al., 2017). Additionally, fearful attachment styles, along with the other insecure attachment styles (Dismissing-avoidant and preoccupied) are often linked to abuse in childhood, trauma, and can impact sexual behavior by making individuals more susceptible to not only sex addiction but also other severe psychopathology (Favez & Tissot, 2010; Midolo et al., 2020).

In general, attachment styles have also been found to be associated with severe psychopathology such as depression and other emotional dysregulation symptoms, eating

disorders, often have a history of trauma, maladaptive personality traits and suicidal ideation, (Dozier, Stovall-McClough, & Albus, 2008; Amianto et al., 2016; Midolo et al., 2020; Amianto et al., 2022). More specifically, individuals with preoccupied (anxious/ambivalent) attachment are characterized as having high emotional lability and tend to be “clingy” in their relationships whereas dismissing-avoidant refers to individuals who have a hard time trusting others and who are often perceived as cold or distant (Bartholomew & Horowitz, 1991). Whereas individuals with dismissing-avoidant refers to individuals who have a hard time trusting others and who are often perceived as cold or distant (Bartholomew & Horowitz, 1991). Dismissing-avoidant attachment style has been found to be associated with depression, anxiety, suicidal tendencies, obsessive-compulsive disorder (OCD), and eating disorders (Crittenden, 1995; Dozier, Stovall-McClough, & Albus, 2008; Mikulincer & Shaver, 2012). Altogether, previous findings suggest that attachment provides a foundation for how an individual handles stressful life events, develop resiliency, and handle life crises (Bowlby, 1988). However, those who experiences difficulties with sexual compulsive behaviors are also predisposed to other symptoms of severe psychopathology. For example, individuals with a sex addiction or compulsive sexual behavior disorder diagnosis often have a substance use disorder (Hartman et al., 2012; Vesga-Lopez et al., 2007). Individuals who experience difficulty controlling their sexual behaviors also have elevated rates of comorbid psychiatric disorders such as mood disorders, and externalizing disorders (e.g., ADHD; Wery et al., 2016; Berberovic, 2013; Garcia & Thibaut, 2010; Mick & Hollander, 2006; Semaille, 2009). Thus, it could be assumed that individuals with insecure attachment and sex addiction experience a plethora of psychological impairments.

## **1.1 Suicide-Related Behavior and Sex Addiction**

Studies have explored the relationship between attachment styles and suicide related behavior, with different variables as mediators. Specifically,, attachment style as a possible predictor of suicide have been explored, with limited findings such as fearful attachment being the most common attachment style among individuals with depression who have attempted suicide (Özer, Yildirim, & Erkoc, 2015), and insecure attachment styles (anxious and avoidant) as a mediating factor between self-criticism and suicide ideation (Falgares, et al., 2017) and history of child abuse and history of suicide attempts (Boroujerdi et al., 2019). Further, there is evidence of a connection between suicide and psychopathology broadly, suggesting that those who experience mental health concerns such as depression, symptoms of psychosis, and/or substance use are more likely to experience suicidal ideation and go one to have a suicide attempt (Inskip & Harris, 1998; Nordentoft et al., 2011).

Suicidal ideation is common in those who experience psychopathology (i.e., depression, manic episodes, psychosis, etc.; Brådvik, 2018). Though there are many symptoms and disorders suicidal ideations is correlated with, one interesting relationship is the associations between suicide-related behavior (SRB) and attachment style. Boroujerdi and colleagues (2018) found those who had attempted suicide in the past had predominantly avoidant and ambivalent attachment styles and reported a history of childhood abuse. Additionally, Stepp and colleagues (2008) found that anxious and avoidant attachment styles are associated with interpersonal problems such as interpersonal sensitivity, ambivalence, and aggression. They also found that certain interpersonal problems mediated the relationship between attachment style and the type



of SRB they engaged in (self-harm or suicide attempt). Most recently, Valenciano-Mendoza et al. (2021) found that suicide attempts were highly prevalent in behavioral addictions (e.g., sexual, gambling, shopping). Though it has been established that suicidal ideation and even death by suicide is most prevalent in substance addictions (Grant et al., 2010), there is still a gap in understanding the prevalence of suicidal ideation and related behavior in sex addiction.

Thus, the literature has limited support for the connection between suicidality and attachment style. Broadly, the connection between addictions and suicide has been studied, but it is difficult to draw conclusions from those studies about the potential connection between suicide and specifically, sex addiction, given that sex addiction is not a diagnostic syndrome withing the DSM-IV or DSM-5-TR.

## **1.2 Current Study**

The current study aimed to better understand the relationship between attachment styles, severity of sex addiction symptoms, suicidality, and personality and psychopathology presentation, in a sample of men seeking treatment for sex addiction. As such, the goals of the proposed study are as follows: First, to explore the relationship between attachment style, sex addiction symptom severity, and suicidal ideation as potential predictors of sex addiction symptom severity. Second, to compare attachment styles with symptom severity across several variables, focusing particularly on severity of sex addiction symptoms, suicide ideation, symptoms of depression and anxiety, as well as differences in distributions across different personality and psychopathology presentation. A final aim was to evaluate the degree to which attachment styles differ across different higher order scales of sex addiction as measured by the SDI.

## CHAPTER II – Methods

### 2.1 Participants

The data for the proposed study came from an archival sample of men who were receiving treatment for sex addiction. The total sample available consisted of 282 men receiving treatment for sex addiction. Of the total sample, 222 had valid MMPI-3 protocols; individuals with a score of 80T or greater on VRIN-r (Variable Response Inconsistency) and TRIN-r (True Response Inconsistency) were excluded from the analyses (Tellegen & Ben-Porath, 2020a, 2020b). Additionally, individuals who had missing MMPI-3, SAST-R, and/or invalid SDIs were not included in the analyses.

The sample is predominantly white 92.4% with a mean age of 45.84 (SD = 13.34). The majority of the sample identified as heterosexual 83.8%, 7.5% as bisexual, 7.5% as homosexual and .8% as other with .4% choosing not to disclose. More than half of the sample was from a high socioeconomic background, with 62.5% of the participants reporting an annual income of \$101,000 or more (see Table 2.1 for more demographic information). Sex addiction treatment is expensive; therefore, it is expected to have a sample that is not representative of the socioeconomic status of the general population.

Table 2.1

*Demographics of sample (N = 222)*

<i>Demographic</i>	<i>N</i>	<i>Percentage</i>
Setting		
Inpatient/Residential	52	21.7%
Outpatient	184	76.7%
Prefer not to say	4	1.7%
Sexual Orientation		
Heterosexual	201	83.8%
Bisexual	18	7.5%
Homosexual	18	7.5%
Other	2	0.8%
Prefer not to say	1	0.4%
Race		
Asian	5	2.1%
Black	2	0.8%
White	226	92.4%
Mixed Race	4	1.7%
Prefer not to say	2	0.8%
Ethnicity		
Hispanic	14	5.8%
Non-Hispanic	212	88.3%

Table 2.1 (continued)

Prefer not to say	14	5.8%
Income		
Less than 50,000	23	9.6%
51,000 to 100,000	67	27.9%
101,000 to 250,000	83	34.6%
More than 250,000	67	27.9%

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## 2.2 Procedure

This study used archival data made available to a member of the research team. The original purpose of this data collection was to identify genetic markers of sex addiction to compare them to substance abuse markers. The original study, under which data were collected, was approved by the University of Southern Mississippi's Institutional Review Board, as well as ethics review boards of the treatment facilities from which data were collected (for cases where such boards existed). The measures utilized by the study were part of the standard intake battery at the respective treatment facilities, but all participants provided informed consent for use of their data. The only incentive provided as a part of the study was to the treatment facilities who agreed to participate in the study and provide informed consent to their current clients. In exchange for providing informed consent to clients and sharing de-identified data with our treatment team, the treatment facility received free scoring and interpretive reports for the MMPI-3 for participating clients. Further, prior to running analyses, the ECR-R provided

total scores for their subscales measuring avoidant and anxious attachment where 4 attachment groups were created.

## **2.3 Materials**

### **2.3.1 MINNESOTA MULTIPHASIC PERSONALITY INVENTORY (MMPI-3; BEN-PORATH & TELLEGEN, 2020a, 2020b)**

The MMPI-3 is made up of 335 self-report True/False items yielding scores on 52 scales (10 validity scales and 42 substantive scales). The scales measure various types of psychopathology, personality dysfunction, and response bias. For the current study, the MMPI-3 was used to assess what other psychopathology symptoms the participants were endorsing apart from sex addiction-related symptoms. To assess suicide ideation in this sample, internalizing scales Suicidal/Death Ideation (SUI) and Helplessness/Hopelessness (HLP) were used. Depression was measured by the following scales: Emotional/Internalizing Dysfunction (EID), Low Positive Emotions (RC2), Demoralization (RCD), and Self-Doubt (SFD), as suggested by Lee and colleagues with the use of the MMPI-2-RF (Lee et al., 2018). MMPI-2-RF-EX and the MMPI-3 forms have interchangeable psychometric properties for MMPI-3 scale interpretations (Hall et al., 2021). The MMPI-3 has extensive empirical data supporting its reliability and validity in multiple settings (e.g., university, clinical, forensic, and community samples); extensive psychometric information can be found in in the *MMPI-3: Technical Manual* (Tellegen & Ben-Porath, 2020b).

### **2.3.2 SEXUAL DEPENDENCY INVENTORY – 4<sup>TH</sup> EDITION (SDI-4.0; GREEN ET AL., 2015)**

The SDI-4.0 consists of 206 self-report items which aimed to measure potential problematic sexual behaviors and preoccupied attachment style. The focus of this measure was to capture the frequency of engagement in various sexual behaviors as well as cognitive preoccupation with those same sexual behaviors. The measure yields scores for 18 Behaviors scales which aimed to capture various sexual behaviors ranging from fantasies to paraphilic behaviors. There are also eleven Clinical scales, four of which aimed to measure specific sexual additions behaviors and the remaining seven aimed to measure preoccupation attachment style with a certain type of sexual activity. Items in this measure are rated on a six-point Likert scale (0 meaning “*never*” and 5 meaning “*very often*”). The SDI-4.0 also has higher order scales which include both the behavior and preoccupied scales. The higher-order scales included: Higher Order Scale 1 (Pain and Role Playing) and consists of capturing arousal related to thoughts of sexual nature and behaviors associated with receiving or giving pain, as well as behaviors such as object sex and producing their own pornography at home; Higher Order Scale 2 (Hostility and Exploiting the Venerable) which broadly captures eroticized rage and hostile and predatory behaviors; Higher Order Scale 3 (Sexualized Attachment) captures varying forms of compulsive behaviors and obsessive thoughts related to attachment figures and sexual conquests; Higher Order Scale 4 (Isolated and Self Stimulation) consist of capturing isolated patterns of sexual activity, potential consequences that come from excessive sexual stimulation, and use of excessive fantasy, pornography, violation of boundaries, and voyeurism; Higher Order Scale 5 (Swinging and Public Anonymous Sex)

captures behaviors and thoughts related to having sexual encounters with strangers, group sex (multiple partners within a group), seeking sexual partners in public areas, having sexual experiences in public places, and arousal related to engaging in these behaviors; Higher Order Scale 6 (Networking for Anonymous Sex) consists of thoughts and behaviors related with having sexual encounters through phone or computers as well as seeking anonymous sexual partners through the internet; and Higher Order Scale 7 (Drug and Sex Trade Use) which consists of the combinations of drug use with sexual behaviors and paying for sex (e.g., sex workers, strip clubs). Both the higher order scales and the SDI Diagnostic Criteria score were used to explore mean differences in SDI scales across the different attachment groups. The SDI Diagnostic criteria was modeled after the DSM-5, DSM-IV-TR substance use criteria, and Carnes (2005), which reflects the core components sex addiction including failed attempts to resist impulses to engage in sexual behaviors; time spent engaging in sexual behaviors; failed attempts to reduce sexual behaviors; excessive time spent engaging and recovering from sexual behaviors; obsession with preparing for sexual encounters/behaviors; social, occupational, or domestic impairment due to time spent engaging in sexual behaviors; engaging in sexual behaviors despite psychological concerns; increasing intensity, frequency, number, or risk engaging in sexual behaviors to achieve the same desired effect; neglecting social, occupational, or recreational activities due to engaging in sexual behaviors; and significant distress due to engaging in sexual behaviors. However, the proposed criteria include 10 diagnostic criteria instead of 11 compared to the substance use criteria. Further, the SDI Diagnostic Criteria score consists of 10-item (yes/ no) sub-scale and the authors suggest that endorsing at least three symptoms is evidence for consideration of a

sex addiction diagnosis; the more items endorsed, the higher the likelihood of a sex addiction diagnosis. The SDI Diagnostic Criteria score was used as an indicator of sex addiction severity as it was modeled based on the DSM-V substance use criteria which includes mild to severe indicators for most substance types.



### **2.3.3 SEXUAL ADDICTION SCREENING TEST – REVISED (SAST-R; Carnes et al., 2014)**

The SAST-R is a 45-item self-report screener, designed to predict whether the test-taker may meet criteria for sexual addiction. The measure yields scores for four scales corresponding to the specific sexual addiction diagnostic domains of preoccupation, loss of control, relationship disturbance, affective disturbance. Additionally, there is an internet scale that is designed to capture internet-related sexual activity (e.g., pornography use), and four other scales intended to serve as a screener for potential sexual addiction for specific groups of individuals by gender and sexual orientation (i.e., heterosexual men, homosexual men, heterosexual women, and homosexual women). The SAST-R has adequate internal consistency with a Cronbach's  $\alpha = .75$  however, more information about this measures' psychometric properties can be found in Carnes et al. (2010). The SAST-R Core score was used in conjunction with the SDI-4.0 Diagnostic Criteria score were used to determine severity of sex addiction symptoms. On the SAST-R Core, a score of six or more is considered clinically significant. The SATS-R Core score consists of the core sex addiction features such as preoccupation of sexual behaviors, loss of control, shame. History of sexual abuse, and affective disturbance. For the current study, scores from the SAST-R Core score, which consists of the first 20 items of the SAST-R scale, were used as indicators of sex addiction severity. The subscales were not used for this study.

#### **2.3.4 EXPERIENCES IN CLOSE RELATIONSHIPS SCALE – REVISED (ECR-R; Fraley et al., 2000).**

The ECR-R is a 36-item self-report measure designed to capture attachment style in various relationships (mother, father, romantic relationships, friendships, etc.). The measure includes two subscales: Avoidant Attachment and Anxious Attachment. The items are rated on a Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores on this measure indicate greater levels of insecure attachment (both anxious and avoidant). The internal validity of the ECR-R measure has been found to be strong (Cronbach's  $\alpha = .90$ ; Fraley et al., 2000). Scores from this measure also demonstrate good validity (see Ravitz et al., 2010 & Cameron et al., 2012.) According to the authors, standard cutoff scores were not created as attachment styles are not categorical. Individuals could fit into two attachment styles and research shows that variation in attachment is better theorized with dimensions (Fraley & Speiker, 2003, 2003b; Roisman et al., 2007). However, for the purpose of this study, four categorical attachment types were created separating individuals. Based on Fraley et al. (2000) recommendation to use the median score as a cutoff, for those who are below the median (score of 4) were considered low on that attachment subscale. Specifically, in the present study cutoff scores of one through four on both anxiety and attachment scales represent "secure attachment", a score from 4.01 through 6.67 (maximum score) on the anxiety scale represents "anxious attachment", and a score of 4.01 to 6.50 (maximum score) on the avoidant scale represents "avoidant attachment". Finally, one last group was created for individuals who had elevated scores on both anxious and attachment scales that was labeled "high avoidant/high anxious attachment" as they were elevated on both subscales.

However, since there is evidence suggesting that attachment can also be understood by using a dimensional approach (Fraley et al., 2015; Ruscio et al., 2006; Fraley & Waller, 1998), the continuous ECR-R Anxiety and Avoidant subscales were also used.

## **2.4 Analytic Strategy**

In order to test our hypotheses, a hierarchical multiple regression analysis was ran to evaluate the degree to which suicide ideation, and attachment style predict sex addiction symptom severity on the SDI and SAST-R Core Score. This addressed the goal of replicating previous findings (between suicide-related behavior and attachment style and attachment and sex addiction) and expanding the available research on our targeted variables. In the second step of the analysis, interaction terms (attachment by suicide ideation) will be entered to determine if suicide ideation will moderate the relationship between attachment and sex addiction symptom severity. Further, two analyses of variance (ANOVAs) were ran to compare means between the created attachment groups, the MMPI-3 subscales, the SDI Higher Order Scales and the Diagnostic Score, and the SAST-R Core Score. This addressed the goal of exploring differences in psychopathology within those with sex addiction symptom presentation.

## **2.5 Hypotheses**

Based on existing findings in the literature, history of suicide ideation and attachment style were expected to predict the severity of sex addiction symptoms. It was also hypothesized that insecurely attached individuals would report higher means of suicidal ideation or suicide-related behavior as measured by the SUI and HLP subscales on the MMPI-3. Finally, it was expected that individuals in the high anxious and high

avoidant group would endorse significant psychological distress across multiple subscales on the MMPI-3.

## CHAPTER III – RESULTS

### 3.1 Data Screening

Prior to running analyses, data were screened for outliers. Skewness and kurtosis were examined with cut scores of  $\pm 2$  and  $\pm 7$ , respectively (Hair et al., 2010; Bryne, 2011). Data were highly skewed due to high levels of psychopathology in the sample, which is consistent with other research in this population (Fontanesi et al., 2020; Weinstein et al., 2015; Zapf et al., 2008). Therefore, elevated T-scores on the MMPI-3 scales are expected and thus, negative skewed data is expected as well. Participants without a valid MMPI-3 protocol, who were missing complete data, and females were removed prior to running analyses which included 60 participants.

### 3.2 Sample Characteristics

The sample was collected from inpatient and outpatient sexual addiction treatment programs across the United States as part of a larger ongoing study. The sample consisted of 222 men and majority of the data collected were from an outpatient setting (184; 76.7%) however, there were participants who were also in residential/inpatient (52; 21.7%) with 4 participants who did not disclose their setting status. The average age of the participants was 45.84 years with a standard deviation of 13.34 years. A majority of the sample identified as heterosexual (201; 83.8%), with 7.5% identifying as Bisexual, 7.5% as homosexual, .8% as other, and .4% not disclosing their sexuality. Further, the racial makeup of the sample was as follows: 94.2% of the sample identified as White, .8% identified as Black, 2.1% identified as Asian, 1.7% identified as Mixed Race, and .4% chose not to disclose their race. In terms of ethnicity, 5.8% identified as Hispanic, 88.3% identified as non-Hispanic, and 5.8% chose not to disclose their ethnicity. Lastly,

there was an average of 16.69 years of education, 60.0% were married, and 62.5% of the sample made \$101,000 or more (see Table 2.1 for more characteristics of the sample).

### 3.3 Mean Scores for Targeted Variables

On average, participants scored a 15.22 (SD = 2.46) on the SAST-R core score and 7.67 (SD = 2.22) on the SDI diagnostic criteria score. (See Table 3.1 for more information regarding the MMPI-3 subscales).

Table 3.1 *Means and standard deviations for all measures of interest*

	Mean	Std. Deviation
SAST Core score	15.22	2.461
SDI Diagnostic Criteria Score	7.6744	2.22355
MMPI-3 Emotional/Internalizing Dysfunction (EID)	58.8901	11.32810
MMPI-3 Thought Dysfunction (THD)	49.2589	10.53314
MMPI-3 Behavioral/Externalizing Dysfunction (BHD)	54.9752	10.76815
MMPI-3 Demoralization (RCd)	58.7766	11.23146
MMPI-3 Somatic Complaints (RC1)	52.4113	11.22819
MMPI-3 Positive Emotions (RC2)	55.5142	11.19393
MMPI-3 Antisocial Behavior (RC3)	53.5461	10.27970
MMPI-3 Ideas of Persecution (RC4)	50.9752	10.22397
MMPI-3 Dysfunctional Negative Emotions (RC6)	55.4574	11.41579
MMPI-3 Aberrant Experiences (RC7)	51.3972	11.07938
MMPI-3 Hypomanic Activation (RC8)	52.8440	11.08029
MMPI-3 Malaise (MLS)	50.0213	10.72859

Table 3.1 (continued)

MMPI-3 Neurological Complaints (NUC)	50.9929	10.38031
MMPI-3 Eating Concerns (EAT)	51.7128	11.33409
MMPI-3 Cognitive Complaints (COG)	57.5638	11.78897
MMPI-3 Suicidal/Death Ideation (SUI)	55.2305	13.64262
MMPI-3 Helplessness/Hopelessness (HLP)	49.4362	11.17435
MMPI-3 Self Doubt (SFD)	58.7872	10.75135
MMPI-3 Inefficacy (NFC)	54.3085	11.45875
MMPI-3 Stress (STR)	56.1489	10.48092
MMPI-3 Worry (WRY)	54.1383	10.82333
MMPI-3 Compulsivity (CMP)	52.0780	10.62333
MMPI-3 Anxiety Related Experiences (AXR)	54.8262	11.46657
MMPI-3 Anger Proneness (ANG)	54.9113	12.10053
MMPI-3 Behavior Restricting Fears (BRX)	50.0142	10.43944
MMPI-3 Family Problems (FML)	54.0461	11.25417
MMPI-3 Juvenile Conduct Problems (JCP)	51.5035	9.72623
MMPI-3 Substance Abuse (SUB)	54.5638	12.33566
MMPI-3 Impulsivity (IMP)	60.6028	12.21450
MMPI-3 Activation (ACT)	48.6844	9.63847
MMPI-3 Aggression (AGG)	53.2979	12.56003
MMPI-3 Cynicism (CYN)	47.1489	8.41320
MMPI-3 Self-Importance (SFI)	47.7128	9.16588

Table 3.1 (continued)

MMPI-3 Dominance (DOM)	45.5390	9.21010
MMPI-3 Disaffiliativeness (DSF)	51.3936	10.31692
MMPI-3 Social Avoidance (SAV)	53.1844	11.27123
MMPI-3 Shyness (SHY)	54.0142	10.96743
MMPI-3 Aggressiveness (AGGR)	46.0355	10.74778
MMPI-3 Psychoticism (PSYC)	49.8511	10.89414
MMPI-3 Disconstraint (DISC)	55.4184	9.82817
MMPI-3 Negative Emotionality/Neuroticism (NEGE)	55.0709	11.29271
MMPI-3 Introversion/Low Positive Emotionality (INTR)	54.7518	11.47993

N = 222

### 3.4 Analysis of Variance

A comparison of means on the MMPI-3 scales across the four attachment groups was conducted using a One-Way ANOVA with Tukey's test of significance, to examine the differences among individual means. Overall, individuals who were in an insecure attachment group (high avoidant, high anxious, or high avoidant/high anxious) scored greater means compared to those who were in the secure attachment group. There was a significant difference for the Emotional/Internalizing Dysfunction (EID) scale, where the group where individuals were high in both anxious and insecure attachment (high anxious/high avoidant) group ( $M = 62.62$ ,  $SD = 10.85$ ) scored significantly higher than the secure group ( $M = 54.18$ ,  $SD = 9.38$ ) and the high avoidant group ( $M = 56.43$ ,  $SD = 8.15$ ),  $F(3, 221) = 9.078$ ,  $p = .003$ ]. Within that same scale, the high anxious ( $M = 60.25$ ,



$SD = 10.69$ ; individuals who only scored higher on the anxious subscale) group scored higher means compared to the secure group ( $M = 54.18$ ,  $SD = 9.38$ ),  $F(3, 221) = 9.078$ ,  $p < .001$ . These were all statistically significant findings. On the Thought Dysfunction (THD) scale, there was a statistically significant,  $F(3, 221) = 8.557$ ,  $p < .001$ , difference between the secure group and both the high anxious ( $M = 50.73$ ,  $SD = 8.50$ ) and the high anxious/high avoidant group ( $M = 51.08$ ,  $SD = 9.79$ ) with the secure group scoring less than the two groups mentioned ( $M = 44.49$ ,  $SD = 7.29$ ),  $F(3, 221) = 8.577$ ,  $p < .001$ . Further, there were statistically significant differences across MMPI-3 subscales, with high avoidant, high anxious, or high anxious/high avoidant groups scoring higher means compared to the secure attachment group (see **Table 3.2** through **Table 3.9**).

Examining the difference of means between the attachment groups and the SDI Higher Order scales revealed that individuals in the secure attachment group ( $M = 50.31$ ,  $SD = 8.74$ ) scored lower on average compared to the high anxious group ( $M = 58.21$ ,  $SD = 18.64$ ),  $F(3, 221) = 3.528$ ,  $p = .013$ , both on the Hostility and Exploiting the Vulnerable (HO2 ) and Sexualized Attachment (HO3;  $M = 49.51$ ,  $SD = 8.11$  vs.  $M = 58.48$ ,  $SD = 10.83$ ,  $F(3,221) = 11.261$ ,  $p < .001$ ) scales. Lastly, the secure attachment group ( $M = 52.10$ ,  $SD = 8.04$ ) scored lower on average compared to the high anxious ( $M = 56.84$ ,  $SD = 8.90$ )  $F(3, 221) = 6.916$ ,  $p = .006$  ; high avoidant ( $M = 57.09$ ,  $SD = 8.08$ ),  $F(3, 221) = 6.916$ ,  $p = .020$ ; and high anxious/high avoidant attachment groups ( $M = 57.77$ ,  $SD = 7.74$ )  $F(3,221) = 6.916$ ,  $p < .001$ , on the Isolated and Self-Stimulation (HO4) scale.

Table 3.2 *Mean Differences and Standard Deviations of MMPI-3 Higher Order Scales by Attachment Groups*

<i>MMPI-3 Scale</i>	<i>Attachment Group</i>				Difference
	Secure Attachment (A)	High Anxious (B)	High Avoidant (C)	High Anxious/High Avoidant (D)	
EID	54.18 (9.38)	60.25 (10.69)	56.43(8.15)	62.62(10.85)	D > A, C; B > A*
THD	44.49(7.29)	50.73(8.50)	46.38(11.04)	51.08(9.79)	B > A; D > A*
BXD	52.93(10.58)	57.00(12.10)	52.50(9.50)	54.93(9.33)	

*Note:* \*denotes statistically significant with a p-value of  $\leq .05$ . Means and standard deviations for Emotional/Internalizing Dysfunction, Thought Dysfunction, and Behavioral/Externalizing Dysfunction scales.

Table 3.3 *Mean Differences and Standard Deviations of MMPI-3 Restructured Clinical Scales*

<i>Attachment Group</i>					
<i>RC</i>	Secure	High	High	High	Difference
<i>Scale</i>	Attachment	Anxious(B)	Avoidant	Anxious/High	
	(A)		(C)	Avoidant (D)	
RCd	53.62(9.50)	61.27(10.48)	55.41(7.68)	62.24(10.56)	A < B*, D*; C < B, D*
RC1	48.83(9.25)	52.87(11.13)	47.90(7.69)	53.79(11.15)	D > A, C*
RC2	53.12(10.01)	54.38(11.01)	57.44(7.57)	57.74(13.12)	
RC4	52.06(10.34)	55.36(11.20)	51.06(9.34)	52.98(9.10)	
RC6	46.65(8.08)	53.04(9.14)	48.47(10.19)	52.34(9.34)	A < B, D*
RC7	50.35(8.33)	56.65(10.06)	52.19(10.01)	59.30(11.80)	A < B, D*; C < D
RC8	46.85(8.27)	51.56(9.63)	49.72(11.36)	53.06(10.68)	A < B, D*
RC9	49.45(9.45)	55.09(12.41)	50.50(10.64)	53.92(9.52)	A < B, D*

*Note:* \*denotes statistically significant at  $p \leq .05$ . Means and standard deviations for Demoralization (RCd), Somatic Complaints (RC1), Low Positive Emotions (RC2), Antisocial Behavior (RC4), Ideas of Persecution (RC6), Dysfunctional Negative Emotions (RC7), Aberrant Experiences (RC8), Hypomanic Activation (RC9).

Table 3.4 *Mean Differences and Standard Deviations of MMPI-3 Specific Problems*

*Scales*

Attachment Group					
<i>SP</i>	Secure	High	High	High	Difference
<i>Scales</i>	Attachment	Anxious (B)	Avoidant (C)	Anxious/High	
	(A)			Avoidant (D)	
MLS	46.35(8.78)	50.07(10.68)	48.09(6.79)	53.45(11.01)	A < D*
NUC	49.31(9.11)	51.05(10.04)	46.09(7.09)	51.83(10.44)	C < D*
EAT	49.41(9.93)	52.92(11.16)	48.88(7.76)	52.27(10.85)	
COG	54.15(10.45)	59.05(11.76)	55.47(10.73)	59.40(11.41)	A < D*

*Note:* \*denotes statistically significant at  $p \leq .05$ . Means and standard deviations for Malaise (MLS), Neurological Complaints (NUC), Eating concerns (EAT), Cognitive complaints (COG) subscales.

Table 3.5 Mean Differences and Standard Deviations of MMPI-3 for Internalizing Scales

<i>Internal izing Scale</i>	<i>Attachment Group</i>				<i>Difference</i>
	Secure Attachment (A)	High Anxious (B)	High Avoidant (C)	High Anxious and High Avoidant (D)	
SUI	49.57(10.33)	59.55(15.17)	50.34(8.78)	59.34(14.29)	A < B, D*; C < B, D*
HLP	47.21(9.09)	49.60(10.89)	45.69(8.99)	49.83(10.59)	
SFD	54.55(9.69)	61.24(10.77)	56.53(9.43)	61.51(10.13)	A < B, D*
NFC	50.94(10.10)	53.76(11.51)	53.50(10.73)	55.98(11.61)	A < D*
STR	53.33(9.62)	55.93(10.42)	54.06(7.97)	58.38(10.54)	A < D*
WRY	50.20(9.25)	55.31(9.64)	51.81(11.50)	57.23(11.46)	A < B, D*
CMP	49.60(10.31)	53.75(10.99)	50.22(9.61)	54.11(10.17)	
ARX	50.11(8.92)	56.84(9.48)	49.66(7.61)	57.92(11.823)	A < B, D*; C < B, D*
ANP	52.68(13.54)	55.76(11.10)	53.66(11.47)	56.66(11.47)	
BRF	47.60(8.55)	49.60(10.38)	46.69(6.67)	51.72(11.31)	

*Note:* \* denotes statistically significant  $p \leq .05$ . Means and standard deviations for Suicidal/Death Ideation (SUI), Helplessness/Hopelessness (HLP), Self-Doubt (SFD), Inefficacy (NFC), Stress (STR), Worry (WRY), Compulsivity (CMP), Anxiety-Related Experiences (ARX), Anger Proneness (ANP), Behavior-Restricting Fears (BRF) subscales.

Table 3.6 Means and Standard Deviations for MMPI-3 Externalizing Scales

<i>Externalizing Scale</i>	<i>Attachment Group</i>				<i>Difference</i>
	Secure Attachment (A)	High Anxious (B)	High Avoidant (C)	High Anxious/High Avoidant (D)	
FML	49.29(8.67)	56.02(11.10)	51.03(10.83)	56.21(10.78)	A < B, D*
JCP	51.01(9.75)	52.07(10.52)	51.34(8.22)	50.62(9.86)	
SUB	53.44(11.47)	57.15(14.17)	48.88(9.54)	54.43(10.46)	C < B*
IMP	57.63(13.14)	61.67(10.86)	60.09(12.22)	62.66(11.20)	
ACT	46.12(7.58)	50.07(10.83)	45.69(8.01)	49.81(10.06)	
AGG	49.93(11.20)	56.58(12.46)	51.19(10.53)	53.43(13.32)	A < B*
CYN	43.84(7.21)	47.95(6.90)	47.31(8.55)	48.60(8.64)	A < B, D*

*Note:* \* denotes statistically significant  $p \leq .05$ . Means and standard deviations for Family Problems (FML), Juvenile Conduct Problems (JCP), Substance Abuse (SUB), Impulsivity (IMP), Activation (ACT), Aggression (AGG), Cynicism (CYN) subscales.

Table 3.7 Means and Standard Deviations for MMPI-3 Interpersonal Scales

<i>Interpersonal Scale</i>	<i>Attachment Group</i>				<i>Difference</i>
	Secure	High Anxious	High	High Anxious/High	
	Attachment (A)	(B)	Avoidant (C)	Avoidant (D)	
SFI	49.34(9.60)	48.09(9.67)	45.36(7.12)	48.28(9.86)	
DOM	47.52(9.61)	45.05(9.48)	42.94(8.26)	45.06(8.47)	
DSF	48.04(8.44)	50.45(9.92)	55.47(9.91)	52.23(10.79)	A < C*
SAV	51.82(10.85)	51.00(11.51)	55.78(9.35)	55.87(12.51)	
SHY	52.28(10.86)	54.31(10.88)	56.25(11.16)	55.42(11.22)	

*Note:* \* denotes statistically significant  $p \leq .05$ . Means and standard deviations for Self-Importance (SFI), Dominance (DOM),

Disaffiliativeness (DSF), Social Avoidance (SAV), Shyness (SHY) subscales.

Table 3.8 Means and Standard Deviations for MMPI-3 Personality Psychopathology  
Five Scales

<i>Attachment Groups</i>					
<i>PSY-5</i>	Secure	High Anxious	High Avoidant	High	Difference
<i>Scales</i>	Attachment	(B)	(C)	Anxious/High	
	(A)			Avoidant (D)	
AGGR	46.12(10.46)	47.85(11.02)	43.47(10.96)	45.49(10.69)	
PSYC	45.34(7.39)	50.53(8.86)	48.50(12.09)	51.09(9.98)	A < B, D*
DISC	54.18(9.89)	56.96(11.21)	53.40(8.49)	55.11(8.16)	
NEGE	51.00(9.48)	56.60(9.79)	51.25(10.82)	58.09(11.88)	A < B, D*; C < D
INTR	52.95(10.66)	53.00(11.92)	58.09(8.70)	57.51(11.48)	

*Note:* \* denotes approaching significance at  $p \leq 0.5$ . Means and standard deviations for Aggressiveness (AGGR), Psychoticism (PSYC), Disconstraint (DISC), Negative Emotionality/Neuroticism (NEGE), Introversion/Low Positive Emotionality-Revised (INTR) subscales.



Table 3.9 Means and Standard Deviations for SDI Higher Order Scales

<i>SDI-2</i> <i>Higher-Order Scale</i>	<i>Attachment Groups</i>				Difference
	Secure Attachment (A)	High Anxious (B)	High Avoidant (C)	High Anxious/High Avoidant (D)	
HO1	52.34(10.62)	57.03(14.52)	54.65(13.71)	54.87(12.76)	
HO2	50.31(8.74)	58.21(18.64)	56.53(17.59)	54.78(11.06)	A < B*
HO3	49.51(8.11)	58.48(10.83)	53.12(9.28)	56.33(10.27)	A < B*
HO4	52.10(8.04)	56.84(8.90)	57.09(8.08)	57.77(7.74)	A < B, C, D*
HO5	52.13(12.53)	56.60(15.66)	53.69(11.11)	55.04(13.32)	
HO6	53.44(9.82)	55.67(12.55)	54.84(12.79)	56.34(11.55)	
HO7	52.02(10.73)	56.81(14.06)	54.32(11.31)	55.80(11.15)	

*Note:* \* denotes significance at  $p \leq 0.5$ . Means and standard deviations for the Sexual Dependency Inventory-4<sup>th</sup> Edition higher order scales: Pain and Role Play (HO1), Hostility and Exploiting the Vulnerable (HO2), Sexualized Attachment (HO3), Isolated and Self-Stimulation (HO4), Swinging and Public Anonymous Sex (HO5), Networking for Anonymous Sex (HO6), Drug and Sex Trade Use (HO7).

### 3.5 Hierarchical Multiple Regression

After running a regression where Suicidal/Death Ideation (SUI) subscale and the avoidant and anxiety ECR subscales were entered first in step 1, the MMPI-3 Suicide/Death Ideation (SUI) subscale was non-significantly related to the SAST-R Core Score,  $b = .111$ ,  $t(222) = 1.670$ ,  $p = .096$  and SDI Diagnostic Criteria Score,  $b = .000$ ,  $t(222) = -.020$ ,  $p = .984$ . However, the anxiety ECR subscale was significantly positively related to SAST-R Core Score,  $b = .516$ ,  $t(222) = 3.432$ ,  $p < .001$ , and to the SDI Diagnostic Criteria Score,  $b = .488$ ,  $t(222) = 3.903$ ,  $p < .001$ . In step 2, after adding the interaction terms between SUI and the anxiety and avoidant ECR subscales, the interaction term was not significantly related to either the SDI Diagnostic Criteria,  $b = 7.884$ ,  $t(222) = .503$ ,  $p = .185$ , and SAST-R Core Scores,  $b = .015$ ,  $t(222) = .301$ ,  $p = .320$ .

Table 3.10 *Regression Coefficients of Suicidal/Death Ideation scale and Attachment Groups on Sex Addiction Symptom Severity (SAST-R Core Score and SDI Diagnostic Criteria for Step 1 and Step 2)*

Variable	B	95% CI for B		SE B	β	R <sup>2</sup>	ΔR
							2
Step 1 Main Effects		LL	UL				
SAST-R Core Score							
Constant	11.882	10.096	13.668	.906		.084	.07
							2
Anxiety	.516	.220	.812	.150	.237**		
Avoidant	.003	-.342	.348	.175	.001		
SUI	.020	-.004	.044	.012	.111		
SDI Diagnostic Score							
Constant	5.429	3.944	6.913	.753		.084	.07
							2
Anxiety	.488	.241	.734	.125	.247**		
Avoidant	.127	-.160	.414	.146	.053		
SUI	.000	-.020	.020	.146	0		
Step 2 Interaction							
Constant	13.00	2.234	23.757	2.50		.990	-
							.08
							6

Table 3.10 (continued)  
SAST-R Core Score

	2.000	-13.212	17.212	3.53	.080	
SUI*Anxiety*Avoidant				6		
Constant	5.000	-.10.513	20.513	3.60	.975	-
				6		1.7
						38

SDI Diagnostic Score

	2.000	-19.939	23.939	5.09	.102	
SUI*Anxiety*Avoidant				9		

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*Note.* CI = confidence interval; LL = lower limit; UL = upper limit, \*\* indicates significance at  $p < .05$ . Group D is set to 0 as it is the comparison group.

## CHAPTER IV – DISCUSSION

The purpose of this study was to examine sex addiction severity across attachment groups and to explore differences in psychological distress as measured by the MMPI-3 across these same groups. Overall, results indicated that individuals in any of the insecure attachment groups (i.e., high anxious, high avoidant, high anxious/high avoidant) scored higher than the secure attachment group across multiple MMPI-3 scales. Further, there were significant differences on the three of the SDI-4 higher order scales, with insecure attachment groups scoring higher than the secure attachment group. In addition, the relationship between suicidal ideation and SDI criteria scores was found to be significant as well as the relationship between attachment group and SDI criteria scores. However, the interaction between the suicidal ideation variable and attachment groups was found to be non-significant.

The first hypothesis, which proposed that suicidal ideation and attachment style would predict higher sex addiction symptoms endorsed on the SDI diagnostic criteria score, was partially supported, as anxious attachment was found to be the only significant predictor of SDI Diagnostic and SAST-R Core scores in the model including avoidant, anxious, and MMPI-3 SUI subscale. This contributes to previous findings suggesting that attachment style can predict sex addiction symptoms and even possibly diagnosis (Jore et al., 2016; Weinstain, Katz, Eberhardt, Cohen, & Lejoyeux, 2015; Bigras, Godbout, Herbert, & Sabourin, 2017). However, the second part of the hypothesis was not supported which suggested that possibility of an interaction between suicidal ideation and attachment style would predict sex addiction severity (as measured by the SDI) was not supported.

The second hypothesis, which predicted that those with insecure attachment would endorse higher means of suicide-related behavior (suicide attempt, suicidal ideation), was partially supported as those with either high avoidant or high avoidant/high anxious attachment scored higher means on the Suicide/Death Ideation subscale compared to those in the secure attachment group. However, there were no statistically significant differences on the Helplessness/Hopelessness subscale. Results related to SUI are consistent with previous literature, which has found that individuals who exhibit characteristics of fearful attachment are more likely to have a history of at least one suicide attempt (Ozer et al., 2015). Additionally, Boroujerdi et al. (2019) found that 78.8% of their sample who had attempted suicide had avoidant attachment. Though suicide attempts were not a variable in this study, and the literature cautions into grouping suicide attempts and suicidal ideation into a single construct (Wetherall et al., 2018), the current results suggest that SUI captures the mean difference between suicide-related thoughts and behaviors among the attachment styles. Further, Whitman et al. (2021) have found SUI to be the strongest predictor of suicide ideation and future suicide attempts when compared to HLP and other MMPI subscales, suggesting that this scale is an appropriate indicator of both ideation and risk for suicidal behavior. Anestis and colleagues (2018) found that HLP predicted one component of suicidal ideation (e.g., perceived burdensomeness) when used in combination of other MMPI-2-RF subscales such as Malaise (MLS), Self-Doubt (SFD), and Family Problems (FML). However, alone, its correlation to suicide-related behavior (e.g., history of suicide attempts, reported of suicide plans, reported suicidal ideation) was not as strongly associated compared to SUI. It is possible that HLP, in general, only measures a component of

suicide ideation alone and cannot capture a broader sense of suicide-related behavior (e.g., past, or present suicidal plans; history of suicidal attempts; current suicidal ideation). Further, Palitsky and colleagues (2013) found that insecure attachment, either avoidant or anxious, was associated with higher self-reported suicidal ideation, suicide attempts, and other mental health-related symptoms. Therefore, seeing higher SUI means in the high avoidant and high anxious attachment group is consistent with previous findings.

Given that Myers (1998) found that individuals with high anxious and avoidant attachment, also called fearful-avoidant or anxious-avoidant attachment, exhibit more psychological distress compared to securely attached individuals, statistically significant elevations across multiple scales should have been expected for the high avoidant and high anxious attachment group. This was supported as the high avoidant/high anxious group had higher scores across many of the MMPI-3 scales. The high avoidant/high anxious group scored higher means compared to the secure attachment and high avoidant attachment groups. This finding supports previous literature suggesting the individuals who are elevated in insecure attachment (either avoidant, anxious, or both) report and exhibit severe psychopathology such as borderline personality disorder, depersonalization, posttraumatic stress disorder, suicide-related behavior, and disordered eating behaviors (Simeon & Knutelska, 2022; Gormley, 2010; Ein-Dor et al., 2010; Illing et al., 2010; Agrawal et al., 2004). Thus, the findings from this study support that those who have tendencies of both high anxious and high avoidant endorse higher levels of distress. In addition, an aim of this study was to compare sex addiction severity and subtypes of behavior by attachment styles. Using the SDI Higher Order scales,

individuals in the high anxious group scored higher means on both the Hostility and Exploiting the Vulnerable (HO2) and Sexualized Attachment (HO3) SDI Higher Order Scales. This is somewhat consistent to previous findings, specifically consistent to what Laurent (2014) found where anxious attachment was strongly correlated to Sexualized Attachment (HO3) which characterized by maintaining and gaining relationships of sexual nature as well as pursuing these relationships compulsively and/or fantasizing about them. Further, all the insecure attachment groups scored significantly higher means compared to the secure attachment group on the Isolated and Self-Stimulation (HO4) which is also somewhat consistent with previous findings where both the anxious and avoidant attachment groups predicted Preoccupation with Isolated Fantasizing scale which is a component of Higher-Order Scale 4 (Jore et al., 2015; Laurent, 2014). However, no other findings were observed, which could be related to various factors. Specifically, Stauffer (2019) found in his study that securely attached individuals still answered enough items to be considered clinically elevated for a sex addiction diagnosis according to the SAST-R. It is possible that no differences were observed on the SAST-R due to the secure attachment group not exhibiting actual differences in symptoms severity compared to the other insecure attachments. Theoretically, securely attached individuals have a lower chance at developing sexual compulsivity as they seem to regulate their sexual activity more than the insecurely attached individuals (Zapf et al., 2008). More recent studies argue that sex addiction has neurological pathways (Love et al., 2015; Hilton & Watts, 2011). Thus, securely attached individuals are not exempt from developing a sex addiction, which could be why no other significant differences were observed among the attachment groups.



Further, it was initially hypothesized that attachment group and suicidal ideation/behavior would predict sex addiction severity. This was partially supported as the anxious attachment subscale was positively related to both the SDI Diagnostic Criteria and SAST-R Core Score, but the avoidant subscale was not. This is somewhat consistent with previous findings where anxious attached individuals are more likely to seek sexual encounters to potentially compensate for their inability to form emotional intimate relationships (Weinstein, et al., 2015; Zapf et al., 2008). Though there have been studies finding individuals with avoidant attachment who exhibit compulsive sexual behavior, theoretically, it is the fear of abandonment and separation from a prominent attachment figure that can lead to brief sexual encounters that “fill the void” of stable and healthy relationship (Schwartz et al., 1996). Additionally, the MMPI-3 SUI subscale was not significantly related to both the SDI Diagnostic Criteria and the SAST-R Core Score, which is consistent with previous findings; specifically, it is still unclear how suicide-related behavior fits into the symptomology of sex addiction (Brewer & Tidy, 2017). In addition, to the limited research, Valenciano-Mendoza et al. (2021) found in their study of a sample of individuals with behavioral addictions (e.g., gambling, sex, etc.) that suicide ideation was found in those with a gambling addiction, whereas risk of suicide attempts was most prevalent in those with a sex addiction. Further, the interaction between all the attachment groups and the SUI subscale were also non-significant related to both the SDI Diagnostic Criteria and SAST-R Core Score. This could be due to the unclear relationships between attachment and suicide-related behavior. Boroujerdi and colleagues (2019) in particular did not find a significant relationship between a number of suicide attempts and attachment style. Further, Özer et al. (2015) found a significant

relationship between anxious attachment and suicide attempts when individuals had a depressive disorder diagnosis, which was not directly measured in this study. It is also possible that using a combination of suicide ideation and suicide attempts (as SUI has an item related to history of attempts) would yield non-significant results as previous literature separated suicide attempts from suicidal ideation and often argue in combining both ideation and attempts (Boroujerdi et al., 2019; Wetherall et al., 2018; Özer et al., 2015).

#### **4.1 Limitations**

One limitation is the use of the self-report measure for attachment styles. Attachment is difficult to measure by using self-report measures as it relies on the individuals' self-awareness and insight. In other words, the present study is only relying on the participant's self-awareness and self-report of their attachment style. Hesse (2016) recommend administering the Adult Attachment Interview (AAI; George et al., 1985) to capture a stronger conceptualization of an adult's attachment style. This present study relied on the ECR-R self-report measure and the recommended cutoff scores to place participants in an attachment group. This could have affected how participants were categorically placed (e.g., participant being anxiously attached rather than avoidant). Thus, aspects of a participant's attachment style were potentially missed by using the ECR-R instead of the recommended AAI.

#### **4.2 Future Directions**

In terms of future directions, a recent study has included emotion dysregulation and substance use disorders as mediators for compulsive sexual behavior disorder symptom severity (Efrati et al., 2022). Individuals with a diagnosis of compulsive sexual

behavior disorder share personality traits similar to those with a substance use disorder (Coleman et al., 2022; Ciocca et al., 2021). Common personality traits such as carelessness, emotional instability, and high endorsement of negative emotions such as anger, depression, and anxiety were all found in individuals with sex addiction, substance use and difficulties with emotion regulation. Though substance use disorder was not a variable explored in this study, our results suggested possible emotion instability differences among attachment styles. Including emotion dysregulation and substance use as a potential variable could help researchers further understand sex addiction etiology.

Further the following study did not have a diverse sample. Some literature suggests possible differences in sex addiction symptoms presentation in women and sexual minorities; however, there is not enough literature suggesting if attachment styles differ by sexual minority status (Popa-Velea et al., 2019). Thus, it is important that future studies explore if these differences exist with sexual minorities and including women with a sex addiction diagnosis. Although this study has limitations, there is limited information available in the literature on the differences in personality and psychopathology between attachment styles with personality measures such as the MMPI-2-RF or MMPI-3. Though the MMPI-3 is relatively new as a personality instrument, there is minimal information on how attachment styles influence or correlate to personality assessment. The present study had promising findings that contribute to this understudied area, suggesting that there are differences in personality and psychopathology between attachment styles in this type of sample.

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