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# Psychopathic Traits and Substance Use in the Context of Erotic Services and Sex Exchange among College Students

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Psychopathic Traits and Substance Use in the Context of Erotic Services and Sex  
Exchange among College Students

by

Bethany G. Edwards

A thesis submitted in partial fulfillment  
of requirements for the degree of  
Master of Arts  
Department of Psychology  
College of Arts and Sciences  
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## **DEDICATION**

The following thesis is dedicated to my family, friends, and mentors, without whom this work might not have been completed and to whom I am forever grateful. In particular, I would like to thank my parents, sister, and brother-in-law, for their endless love and support through this challenging process and whose heartfelt encouragement has given me the confidence and strength to pursue my goals. I would also like to thank my lab members and friends, particularly Melanie Bozzay and Amy Hoffmann, for their support and worthwhile input, that which greatly benefited this work. I am truly grateful to my major advisor, Dr. Edelyn Verona, for her constant guidance and constructive feedback throughout this endeavor, as well as her patience and advice which have been valuable to my professional growth. Last but not least, I would like to thank my committee members, Dr. Jill McCracken, Dr. Robert Schlauch, and Dr. Joseph Vanello for their time and effort, along with their positive and thought-provoking contributions.

## TABLE OF CONTENTS

|  |     |
|--|-----|
| List of Tables                                   | iii |
| List of Figures                                  | iv  |
| Abstract   | v   |
| Introduction                                     | 1   |
| Sex Work and Erotic Services                     | 2   |
| Psychopathy, Risky Sexual Behavior, and Sex Work | 5   |
| Gender and Manifestation of Psychopathic Traits  | 8   |
| Substance Use, Psychopathy, and Erotic Service   | 10  |
| Proposed Study: Aims and Hypotheses              | 12  |
| Aim 1  | 13  |
| Hypothesis 1.1                                   | 13  |
| Hypothesis 1.2                                   | 13  |
| Hypothesis 1.3                                   | 14  |
| Aim 2  | 14  |
| Hypothesis 2.1                                   | 14  |
| Hypothesis 2.2                                   | 14  |
| Hypothesis 2.3                                   | 15  |
| Hypothesis 2.4                                   | 15  |
| Aim 3  | 15  |
| Hypothesis 3.1                                   | 15  |
| Hypothesis 3.2                                   | 16  |
| Method   | 17  |
| Participants                                     | 17  |
| Procedure  | 19  |
| Measures   | 19  |
| Demographic Information                          | 19  |
| Substance Use                                    | 20  |
| Psychopathy                                      | 22  |
| Erotic Services                                  | 23  |
| Data Analytic Strategy                           | 26  |
| Preliminary Analyses                             | 26  |
| Primary Data Analyses                            | 27  |
| Results  | 32  |
| Descriptive Statistics                           | 32  |

|   |    |
|---|----|
| Aim 1: Student Erotic Service Involvement                                 | 34 |
| Aim 2: Substance Use, Psychopathic Traits, and Erotic Service Involvement | 37 |
| Erotic Service Provision  | 37 |
| Erotic Service Consumption  | 39 |
| Aim 3: Gender Differences   | 43 |
| Discussion  | 45 |
| Aim 1: Student Erotic Service Involvement                                 | 45 |
| Aim 2: Substance Use, Psychopathic Traits, and Erotic Service Involvement | 48 |
| Aim 3: Gender Differences   | 53 |
| Limitations, Strengths, and Future Directions                             | 54 |
| References  | 57 |
| Appendix A: Demographic Information                                       | 71 |
| Appendix B: Texas Christian University Drug Screen – V                    | 73 |
| Appendix C: Self-Report Psychopathy-III (SRP-III)                         | 76 |
| Appendix D: Erotic Activity Questionnaire (EAQ)                           | 79 |
| Appendix E: Documentation of Institutional Review Board Approval          | 85 |

## LIST OF TABLES

|   |    |
|---|----|
| Table 1: Demographic Characteristics of Pilot ( $n = 182$ ) and Main Data Collection ( $n = 820$ )  | 21 |
| Table 2: Descriptive Statistics for Primary Variables of Interest in Main Data Collection           | 33 |
| Table 3: Undergraduate Student Prevalence of Various Erotic Services                                | 35 |
| Table 4: Student Involvement in Erotic Services Without and With Physical Contact                   | 36 |
| Table 5: Hierarchical Logistic Regression Testing Aim 2 Hypotheses for Provision of Erotic Services | 38 |
| Table 6: Poisson Regressions Testing Aim 2 Hypotheses for Consumption of Erotic Services            | 40 |
| Table 7: Regressions Testing Aim 3 Hypotheses for Provision and Consumption of Erotic Services      | 44 |

## LIST OF FIGURES

- Figure 1: Consumption of erotic services and/or sex exchange plotted as a function of Factor 1 and Factor 2 psychopathic traits. Factor 1 x Factor 2 interaction for consumption plotted by Factor 1 (left) and Factor 2 (right) 41
- Figure 2: Consumption of erotic services without physical contact plotted as a function of Factor 1 and Factor 2 psychopathic traits. Factor 1 x Factor 2 interaction for services without physical contact plotted by Factor 1 (left) and Factor 2 (right) 42

## ABSTRACT

With increasing education expenses and characterization of our culture as “sexualized”, scholars have begun to explore student engagement in erotic services, but most research has been done outside the United States. This study tested personality correlates, prevalence and type of erotic service involvement in men and women college students in the United States. Specifically, the present study examined gender differences and whether substance use and psychopathic traits exhibit unique and/or interactive associations with provision and consumption of erotic services among students. A total of 820 undergraduate students (54.3% women) took part in this study, and completed the Texas Christian University Drug Screen-V (TCUDS-V; Knight, Simpson, & Hiller, 2002), Self-Report Psychopathy Scale-III (SRP-III; Paulhus, Hemphill, & Hare, 2012), and Erotic Activity Questionnaire (EAQ). Men and women endorsed engagement in provision and consumption of erotic services and/or sex exchange, with higher rates for consumption than provision. Substance use and psychopathic traits showed independent relationships to provision and consumption, and whereas impulsive-antisocial psychopathic traits related to provision, both interpersonal-affective and impulsive-antisocial traits related to consumption, but only among those low in the other trait dimension. Lastly, gender showed a main effect for consumption of erotic services (men > women), but relations between psychopathic traits and involvement were not dependent on gender. Results point to college student involvement in the sex industry to a certain degree, and highlight personality features that may aid in the identification of students more apt to become involved in potentially risky behavior within erotic contexts.



## INTRODUCTION

Few researchers to date have examined individual difference correlates of sex work, in conjunction with other contributing factors like socioeconomic status, homelessness and substance use, with even fewer exploring these questions among college students (e.g., Roberts, Jones, & Sanders, 2013; Roberts, Sanders, Myers, & Smith, 2010). Given rising education expenses and characterization of contemporary pop culture as sexualized (Attwood, 2014), scholars have begun to explore student engagement in erotic services or sex work (e.g., Roberts et al., 2013). This research is important, as it is possible that provision of erotic services may increase exposure to “risky” contexts, including those with an elevated likelihood of physical harm (e.g., HIV, violence) or unwanted consequences (e.g., pregnancy) (Weitzer, 2009). As such, research on pathological personality traits that may contribute to student involvement in the sex industry inform efforts dedicated to the prevention of potential deleterious outcomes (e.g., HIV, violence, substance use) associated with such behavior among students.

Psychopathy is a personality disorder characterized by arrogance, deceit, and callousness, combined with a pervasive pattern of impulsive and antisocial behavior (Hare, 2003).

Psychopathic traits are relevant to individual difference correlates of sex work given that both involve thrill seeking and sometimes illegal behavior. Some work has suggested that engagement in sex work may reflect one manifestation of impulsive-antisocial traits (e.g., reckless disregard, delinquency), particularly in women (e.g., Goldstein et al., 1996; Strachan, 1993). Specifically, our recent work has suggested that impulsive-antisocial traits relate to prostitution among

women, above and beyond illicit drug dependence (Edwards & Verona, 2016). However, little has been done to explore individual-level factors, such as psychopathic traits, and gender differences in these relationships within sex work contexts typically characterized as gendered in nature (e.g., women as providers vs. men as consumers). Moreover, although research connects sex work to substance use in community samples (e.g., Griffith, Mitchell, Hammond, Gu, & Hart, 2012; Jeal & Salisbury, 2004; Patton et al., 2014), the proposed project explores this relationship in college students, a population shown to display elevated levels of substance use, particularly alcohol use (Ham & Hope, 2003; O'Malley & Johnston, 2002; Skidmore, Kaufman, & Crowell, 2016).

As such, this project tests the extent to which both psychopathic traits and substance use relate to the provision and consumption of various erotic services among college students and strives to investigate gender differences in these relationships. These broad goals are addressed by way of three primary aims: 1) assess prevalence and type of erotic services endorsed by men and women college students, and test gender differences in student endorsement of provision and consumption, 2) test the extent to which alcohol and drug use and psychopathic traits may interact in relation to college student provision and consumption of erotic services, and 3) explore gender differences in relationships among psychopathic traits and erotic service provision and consumption.

### **Sex Work and Erotic Services**

Scholars have conceptualized the sex industry as comprising “commercial goods and services of an erotic and sexual kind” (Agustín, 2005, p. 618) that can vary considerably in buying and selling of sex. The boundaries of sex work are broad and encompass provision of various erotic services for material gain. Given that sex work conducted for material gain exists

across varying forms and contexts, Harcourt and Donovan (2005) developed a typology of sex work behavior, dividing sexual services into the categories of “direct prostitution” and “indirect prostitution” and differentiating between them in terms of their likelihood of involving sexual intercourse and sexual health risk-level. The former category comprised higher risk services involving sexual intercourse (e.g., escorting, brothel, street-based), while the latter included lower risk services thought to involve little to no genital contact (e.g., beer girl, phone sex operator, erotic dancing, massage parlor, BDSM/Dominatrix) (Harcourt & Donovan, 2005). Although services within “indirect prostitution” were considered *less* likely to involve sexual intercourse per se (e.g., erotic dancing, massage parlor, BDSM/Dominatrix), the authors along with subsequent researchers, suggest that these services may still involve some physical contact (e.g., Harcourt & Donovan, 2005; Lindemann, 2013; Maticka-Tyndale, Lewis, Clark, Zubick, & Young, 1999). Therefore, the literature appears to suggest that sex work behavior comprises (1) erotic services without physical contact (e.g., beer girl, phone sex), (2) negotiation and performance of erotic services involving physical contact and possibly sexual intercourse (e.g., erotic dancing, BDSM/dominatrix), and (3) sex exchange (e.g., prostitution) (Harcourt & Donovan, 2005; Kim et al., 2005; Vandepitte et al., 2006).

In examining erotic services across these various forms, it is evident that sex work includes both legal (e.g., erotic dancing) and illegal (e.g., prostitution) behavior; however, legality appears to have little impact on mental health outcomes, such that both forms have been linked to similar psychopathology correlates (e.g., substance use, depression) (e.g., Li, Li, & Stanton, 2010; Lilleston, Reuben, & Sherman, 2015; Rössler et al., 2010; Young, Boyd, & Hubbell, 2000; Zima, 2011). Nonetheless, considering that more women than men are arrested for illegal forms of sex work (i.e., prostitution) (FBI, 2012) and that our contemporary culture is

permeated with female sexualization (APA, 2007), it is not surprising that research has focused primarily on provision of prostitution among women. As such, few studies have explored services outside of prostitution and even fewer have examined the characteristics of individuals who consume or pay for sexual services, with existing studies only focusing on men.

It is also the case that existing research on sex work has devoted attention to criminal offender and substance-using individuals, and little work has examined sex work behavior among students. Recently, international surveys have indicated that students, from middle school to college, are participating in various forms of sex work, although these surveys have not consistently explored gender differences (Betzer, Köhler, & Schlemm, 2015; Döring, Daneback, Shaughnessy, Grov, & Byers, 2015; Lavoie, Thibodeau, Gagné, & Hébert, 2010; Pedersen & Hegna, 2003; Roberts et al., 2013; Roberts et al., 2010; Svedin & Priebe, 2007). For example, European studies have found that roughly 1.4 – 7% of students (~0.6 – 1% women and ~1.8 – 2.1% men) have provided erotic services for material gain (Betzer et al., 2015; Pedersen & Hegna, 2003; Roberts et al., 2013; Svedin & Priebe, 2007), and 25.7% of students have reported knowing of other students who have engaged in such activity (e.g., stripping, escorting) (Roberts et al., 2010). Rates increase substantially for consumption of erotic services, such that 52% of students in the United Kingdom reported consumption of services (e.g., pornography, erotic dance clubs) (Roberts et al., 2013). In a study examining online erotic service involvement, students across North America and Europe exhibited low rates of both providing online erotic services for payment (0.5%; e.g., camsex, commercial online chat sex) and providing payment in exchange for online (1.1%) and offline services (1.0%; e.g., using internet for escort/prostitution) (Döring et al., 2015). Further, European studies have shown that men are more likely than women to provide erotic services (Pedersen & Hegna, 2003; Svedin & Priebe, 2007), although

Lavoie et al. (2010) found that Canadian women were more likely to provide (6% vs. 2% of men) and men were more likely to consume (5% vs. 2% of women) services.

In sum, investigations outside of the United States, all in industrialized countries, support student involvement within the sex industry. However, studies have offered mixed evidence in terms of gender differences. Furthermore, studies in the United Kingdom point to higher student endorsement of provision and consumption of services that do not typically involve direct sex exchange, such as erotic dancing, relative to those involving sex exchange, such as escorting and street-based services. Thus, in this paper, provision and consumption of various erotic services, along with gender differences in endorsement, are examined to begin to determine whether prevalence rates evident in a southeastern United States college sample are similar to those reported in the above international studies. In addition, whereas the literature has suggested that erotic services vary considerably and include those without physical contact (e.g., beer girl, phone sex), with physical contact and possibly sexual intercourse (e.g., erotic dancing, BDSM/Dominatrix), and sex exchange (e.g., prostitution), this project will expand prior work and explore the extent to which student prevalence differs across these various services.

### **Psychopathy, Risky Sexual Behavior, and Sex Work**

Whereas students may engage in the sex industry for a number of reasons, such as for sexual pleasure or to help pay for their education, psychopathic traits may play an important role in promoting involvement. Psychopathy is commonly assessed among offenders using the Psychopathy Checklist-Revised (PCL-R; Hare, 2003) and its progeny (e.g., Psychopathy Checklist: Screening Version; Hart, Cox, & Hare, 1995), which are based on a semi-structured interview and collateral record review. Despite its common use in forensic contexts (Hare, 1996, 1999, 2006), there is growing consensus that psychopathy is best conceptualized along a

continuum, wherein elevated levels of psychopathic traits in community and college samples are associated with similar outcomes and risk factors (e.g., violence, substance use) as among offenders (Coid, Yang, Ullrich, Roberts, & Hare, 2009; Neumann & Hare, 2008). As such, self-report measures of psychopathy have been developed and validated in student populations, including one of the most popular, the Self-Report Psychopathy Scale-III (SRP-III; Williams, Nathanson, & Paulhus, 2003).

Research suggests that psychopathy may represent the intersection of distinct trait dimensions, particularly combinations involving arrogant and deceitful interpersonal style and reduced affect, as well as impulsive and antisocial tendencies; therefore, it is often examined multi-dimensionally via two related trait domains known as Factor 1 and Factor 2 (Hare, 2003; Harpur, Hare, & Hakstian, 1989; Hart et al., 1995). Factor 1 traits comprise interpersonal and affective features, including grandiosity, callousness and reduced emotionality, and manipulation for personal gain. Factor 2 includes impulsive and antisocial features, such as impulsive and irresponsible behavior and criminality.

While little work has examined psychopathy in relation to sex work per se, psychopathic and antisocial traits have been associated with risky sexual behavior in men and women (Fulton, Marcus, & Payne, 2010; Fulton, Marcus, & Zeigler-Hill, 2014; Richards, Casey, Lucente, & Kafami, 2003; Rucevic, 2010; Visser, Pozzebon, Bogaert, & Ashton, 2010). Risky sexual behavior is commonly defined as sexual activity that elevates risk of unintended pregnancy or contracting a sexually transmitted infection, and includes behaviors such as unprotected sex (e.g., failure to use condoms), high-risk sexual encounters (e.g., injection drug-using partner), and multiple sexual partners (Cooper, 2002; Fulton et al., 2010; Fulton et al., 2014; Hoyle, Fejfar, & Miller, 2000; Richards et al., 2003; Taylor-Seehafer & Rew, 2000). Of course, involvement in

sex work does not always equate to risky sexual behavior. In fact, sex work services may not have impulsive features and thus, may not be “risky” in the same way. However, sex work services can still relate to varying levels of risk for physical (e.g., HIV, violence) and psychological (e.g., stigma-related shame, self-esteem) consequences (e.g., Cohan et al., 2006; Kim et al., 2005; Maticka-Tyndale, Lewis, Clark, Zubick, & Young, 2000).

Few studies to date have explored whether psychopathic traits may actually increase individual’s proclivity to engage in provision and/or consumption of sex work (Brody & Potterat, 2010; Gibson-Ainyette, Templer, Brown, & Veaco, 1988; Goldstein et al., 1996; O’Sullivan, Zuckerman, & Kraft, 1996; Strachan, 1993), and those which have been done primarily focus on provision of street-based work, with very few examining broader sex industry involvement. For example, research on middle and high school students in Norway and Sweden has shown that those engaged in erotic services for material gain exhibited elevated levels of conduct and antisocial problems relative to those not engaged (Pedersen & Hegna, 2003; Svedin & Priebe, 2007). Moreover, Betzer et al. (2015) found that German college students involved in erotic services scored lower on the Big Five personality trait of agreeableness (lower levels being highly related to antisociality and both psychopathy factors; Lynam & Widiger, 2007) relative to those not involved, suggesting a link between psychopathic traits and erotic service provision (Lee & Ashton, 2005; Ross, Lutz, & Bailey, 2004).

Taken together, antisocial or impulsive psychopathic traits (i.e., Factor 2) are associated with sexually motivated behavior and sex work, in particular. The proposed work intends to extend the literature by further exploring the manner in which distinct psychopathic traits relate to both provision and consumption of erotic services among undergraduate college students.

## **Gender and Manifestations of Psychopathic Traits**

Whereas the bulk of research on psychopathy has focused on men, scholars have extended consideration of gender differences, resulting in more recent work on psychopathic traits in women (Verona & Vitale, 2006). Research has shown lower levels of psychopathy in women than in men (Cale & Lilienfeld, 2002; Verona & Vitale, 2006), and PCL-R factor analyses have shed light on gender differences in the factor structure. For instance, whereas the sexual promiscuity item loads on Factor 2 in women, this item has either not loaded at all or loaded on Factor 1 in men (Hare, 1991; Salekin, Rogers, & Sewell, 1997). Moreover, men and women with comparable psychopathy levels have demonstrated differential PCL-R item functioning across Factor 1 and Factor 2 (Bolt, Hare, Vitale, & Newman, 2004; Salekin et al., 1997; Schrum & Salekin, 2006). For instance, Grann (2000) found that distinct items discriminated between men and women at the same level of the latent trait, such that women were more likely to exhibit elevated levels on sexual promiscuity, whereas men were more likely to have elevated scores on callousness and juvenile delinquency. Work has also suggested that men and women may differentially express psychopathic traits. That is, whereas men and women may both present as manipulative, women may be more likely to do so in a provocative and/or sexually seductive manner (Kreis & Cooke, 2011). Finally, there may also be differences in the settings in which men and women manifest psychopathic traits, with women more likely to express Factor 2 traits within interpersonal and/or intimate settings in particular (e.g., aggression toward sexual partners and/or children) (Goldstein et al., 1996; Kreis & Cooke, 2011; Verona & Vitale, 2006). In sum, this set of studies suggests that sexualized behavior is more characteristic of women than men who are high on psychopathy.



Research directly examining this hypothesis is minimal. The existing studies suggest that Factor 2 traits are positively associated with risky sexual behavior across gender, whereas Factor 1 traits may be related to this type of behavior more so in men (Fulton et al., 2010; Fulton et al., 2014; Richards et al., 2003; Rucevic, 2010; Visser et al., 2010). As such, Fulton et al. (2010) suggests that Factor 1-related traits appear to be protective in women, such that women who exhibit fearless dominance may be more likely to refuse offers for sexually risky behavior. In contrast, Hudek-Knezevic et al. (2007) found that, whereas SRP-III impulsive thrill-seeking was related to risky sexual behavior among men and women, SRP-III interpersonal manipulation (Factor 1-related traits) was only related to such behavior in women.

Very few studies have examined sex work correlates in men and women. Existing studies have linked antisocial traits (i.e., Factor 2) to the provision of sex work across both men and women (Compton, Cottler, Shillington, & Price, 1995; Edwards & Verona, 2016), whereas a recent study reported gender differences in psychopathy correlates of casual forms of sex exchange (e.g., trade sex for drugs). That is, unique variance in Factor 1 was positively related to sex exchange in men, whereas these traits were negatively related in women, an effect that may be explained by distinct roles men and women take in erotic contexts (i.e., women as providers and men as consumers) (Edwards & Verona, 2016).

With respect to consumption, researchers have suggested that impulsivity, recklessness, and sensation-seeking (traits associated with Factor 2) may be motivators for consumers of sex work (Farley et al., 2011; Wilson, Manual, & Lavelle, 1992; Xantidis & McCabe, 2000), and that males who have provided something in exchange for sex tend to exhibit an increased desire for attention and higher levels of blame externalization and ego-defensiveness (traits associated with Factor 1) relative to those who have not provided something in exchange for sex (Jewkes,

Morrell, Sikweyiya, Dunkle, & Penn-Kekana, 2012; Wilson et al., 1992). Further, researchers have shown that male consumers exhibit elevated scores on traits of callousness, which are in line with Factor 1 traits (Farley, Golding, Mathews, Malamuth, & Jarrett, 2015).

Collectively, these results suggest that Factor 2 traits may be important to sexually motivated behavior across gender, and that men and women may exhibit differential relations between Factor 1 traits and such behavior. In particular, it is expected that Factor 1 will relate positively to sex work engagement in men but negatively in women, a difference that may relate to the gendered roles taken in many sexual encounters. To the extent that the presence of Factor 1 traits (e.g., callousness, manipulation for personal gain) contribute to sexual roles of dominance and control in men, the same traits may help shield women from situations in which they are perceived as subordinate. The current project aims to expand findings by exploring relations between psychopathic traits and both the provision and consumption of various erotic services among men and women college students.

### **Substance Use, Psychopathy, and Erotic Service**

Given that substances are readily accessible on college campuses (e.g., Wechsler, Lee, Nelson, & Kuo, 2002; White, Becker-Blease, & Grace-Bishop, 2006), and that alcohol and/or drug use has been linked to increases in potentially risky behavior (e.g., more sexual partners, intravenous drug use) (e.g., Gilchrist, Gruer, & Atkinson, 2005; Yao et al., 2012), it is important to examine the degree to which substance use may relate to sex work in college students.

Considerable work to date has examined associations between substance use and sex work. Specifically, alcohol and drug use have been consistently linked to sex exchange and other erotic services for material gain (i.e., nude dancing, pornography) (Chen, Li, Shen, Zhou, & Tang, 2015; Dalla, 2002; Griffith et al., 2012; Lilleston et al., 2015; Maticka-Tyndale et al., 2000;

Matusiewicz, Ilgen, Bonar, Price, & Bohnert, 2016; Patton et al., 2014; Seib, Fischer, & Najman, 2009; Walls & Bell, 2011; Young et al., 2000). Despite the strong link between alcohol and drug use and sex work among substance-using and offender samples, recent international work testing these relations in college students has yielded mixed results. For instance, studies in Norway, Sweden, and the United Kingdom have shown that students involved in various erotic services exhibit elevated levels of alcohol use compared to students not involved in these services (Pedersen & Hegna, 2003; Roberts et al., 2013; Svedin & Priebe, 2007). However, findings in German students have indicated a negative relationship between alcohol use and erotic service involvement (Betzer et al., 2015), and findings from Canadian students have revealed no relationship between these two constructs (Lavoie et al., 2010). Each of the above studies have also tested engagement in erotic services in relation to drug use and, whereas some studies point to a positive association between drug use and such involvement among students (Betzer et al., 2015; Pedersen & Hegna, 2003; Svedin & Priebe, 2007), others have shown no relationship (Lavoie et al., 2010; Roberts et al., 2013). As an extension of these studies, the current study will examine whether college students involved in sex work are more apt to use substances, particularly alcohol, in an environment where substances are more easily available and related to work they do (e.g., strip club environment).

Further, this study will investigate to what extent psychopathy Factor 2 and substance use interact in accounting for provision or consumption of sexual services. Such that both Factor 2 and drug use fall on an externalizing continuum, it is possible that sex work behavior also falls within this continuum (Patrick, Hicks, Krueger, & Lang, 2005). That is, both Factor 2 and substance use may relate to sex work in that they are both indicators of an externalizing latent trait undergirded by traits related to disinhibition. At the same time, Factor 2 and substance use

may show unique and interacting relationships with sex work. As such, Edwards & Verona (2016) examined psychopathic traits and drug dependence in relation to prostitution in women offenders and found that each accounted for unique variance in prostitution. This suggests that these two constructs represent unique vulnerabilities (i.e., what they do *not* share) relevant to sex work behavior, at least among women.

To extend previous work, the current study examined the unique roles of substance use and psychopathic traits in relation to sex work, as well as whether substance use modulated the extent to which psychopathic traits relate to provision and consumption of erotic services among students. For instance, it is possible that psychopathic traits play less of a role in erotic services in students with higher levels of substance use, particularly alcohol, given that frequent use is a salient motivator for engagement in erotic services. Hence, the influence of psychopathic traits may be more apparent among students exhibiting less frequent substance use. Previous studies implicate substance use (and not just dependence) to erotic service involvement in students (e.g., Chen et al., 2015; Griffith et al., 2012; Matusiewicz et al., 2016); thus, this work will focus on *frequency* of substance use, recognizing that alcohol and cannabis will likely be endorsed most often, given the nature of the sample (i.e., college students).

### **Proposed Study: Aims and Hypotheses**

The proposed study sought to utilize a diverse sample of men and women undergraduate students to broadly assess engagement in erotic services and investigate substance use and psychopathic features in relation to involvement in the sex industry. Furthermore, this project tested gender differences in psychopathic traits related to the provision and/or consumption across erotic services. Furthering research in this domain holds important implications. First, such that prior research on sex work in students has been primarily conducted outside the United

States, this study is one of the first to examine the extent to which college students in the United States (in the southeastern region, in this case) are involved in the sex industry. Second, considering that the majority of national research in this domain has centered on substance users and offenders, extending to college students allowed for further examination of sex work pervasiveness among those more socially advantaged. Finally, considering the burden of college expenses and financial difficulty commonly experienced by students, individual-level personality vulnerabilities may help to identify those more likely to engage in potentially risky behavior (within erotic contexts) during times of economic struggle. In consideration of prior work, the proposed project addressed three primary aims. Given the nascent nature of this research in college students, tentative hypotheses are below.

### **Aim 1**

Assess prevalence and type of erotic service involvement endorsed by men and women undergraduate college students, and test gender differences in student endorsement of provision and consumption of such behavior.

**Hypothesis 1.1.** Such that prior work has observed higher prevalence rates for consumption relative to provision of erotic services among college students (Roberts et al., 2013), we predict that, overall, college students will endorse higher rates of consumption relative to provision.

**Hypothesis 1.2.** In accordance with research suggesting that student samples exhibit higher endorsement of erotic services not involving sex exchange (e.g., erotic dancing) than actual sex exchange (e.g., escort) (Roberts et al., 2013; Roberts et al., 2010), we expect college students to demonstrate higher rates of erotic services without physical contact and thus, no sex

exchange (e.g., erotic nude modeling, phone sex operator) relative to services with physical contact, and possibly sex exchange (e.g., escort, brothel).

**Hypothesis 1.3.** In light of previous evidence that North American women are more likely to engage in the provision of erotic services and men are more likely to engage in consumption (Lavoie et al., 2010; Roberts et al., 2013), we hypothesize that women will endorse higher rates of erotic service provision relative to men, and men will endorse higher rates of erotic service consumption relative to women.

## **Aim 2**

Test the extent to which alcohol and drug use and psychopathic traits show unique and/or interactive relations with provision and consumption of erotic services.

**Hypothesis 2.1.** Because recent work suggests that unique variance in Factor 1 is negatively related to sex exchange in women (Edwards & Verona, 2016), we predicted that Factor 1 will be negatively related to provision of erotic services, above the influence of substance use, among college students (although we expect these effects to be moderated by gender, see below). Further, our recent work suggests that Factor 2 psychopathic traits are related to prostitution, at least among women offenders (Edwards & Verona, 2016); thus, we predicted that Factor 2 will be positively related to provision of erotic services, above the influence of substance use among students.

**Hypothesis 2.2.** Considering that more frequent substance use itself is likely a salient motivator for student involvement in erotic services, we expect that substance use will uniquely relate to college student provision of erotic services. Further, we predict that substance use will moderate the relation between Factor 2 and provision of erotic services in college students, given that these traits may play less of a role in erotic services in students with more frequent substance

use (with the latter being the main influence). Analyses testing substance use as a moderator in the relation between Factor 1 and student provision will be exploratory.

**Hypothesis 2.3.** Given that Factor 1 has been implicated in sex exchange in men, an effect that may be explained by men's roles as consumers, we predicted that Factor 1 will be positively related to consumption of erotic services, above the influence of substance use, among college students. In light of prior work linking Factor 2 psychopathic traits to consumption of sex work, particularly with consumption of prostitution (Farley et al., 2011; Xantidis & McCabe, 2000), we predicted that Factor 2 will be positively related to consumption of erotic services, above the influence of substance use, among college students.

**Hypothesis 2.4.** Given that more frequent substance use itself is likely a salient motivator for student involvement in erotic services, we expect that substance use will uniquely relate to college student consumption of erotic services. As with provision, we predict that substance use will moderate the relation between Factor 2 and consumption of erotic services in men and women college students, whereas analyses testing substance use as a moderator in the relation between Factor 1 and student consumption will be exploratory.

### **Aim 3**

Explore gender differences in the relationships between psychopathic traits and erotic service provision or consumption in college students.

**Hypothesis 3.1.** In light of recent work suggesting a gender x Factor 1 interaction in relation to sex exchange (e.g., Edwards & Verona, 2016), we predict that men will exhibit a positive relation and women will exhibit a negative relation between Factor 1 and sex work. In addition, given that research has observed higher rates of erotic service provision among women, and has suggested that women may be more inclined to manifest Factor 2 traits within such

gendered contexts, we expect that gender will moderate the relationship between Factor 2 and provision of erotic services, such that women will exhibit a stronger relation relative to men.

**Hypothesis 3.2.** Similarly, we predict that gender will moderate the relationship between Factor 1 and consumption of erotic services, such that men will demonstrate a positive relation and women will demonstrate a negative relation. Moreover, because researchers have reported elevated rates of erotic service consumption in men relative to women, and scholars have observed positive relations between Factor 2 related traits and sexually motivated behavior in men (Hudek-Knežević et al., 2007; Lavoie et al., 2010; Pedersen & Hegna, 2003; Roberts et al., 2013; Svedin & Priebe, 2007), we hypothesize that gender will moderate the relationship between Factor 2 and consumption of erotic services, such that men will demonstrate a stronger relation compared to women.



## METHOD

### Participants

The present study was conducted across two phases, including an initial pilot phase and subsequent main data collection. Participants in the pilot phase included 182 predominantly female ( $n = 154$ ; 84.6%) undergraduate sample recruited through the USF psychology participant pool (SONA) ranging from 18 to 57 years old ( $M = 20.56$ ;  $SD = 3.68$ ). Pilot inclusion criteria included current enrollment in at least one psychology undergraduate course, 18 years of age, and English fluency. All provided informed consent prior to participation and received 0.5 SONA credits per half hour of their time. Following the pilot phase, 868 undergraduate students ( $n = 463$  women; 53.3%) were recruited to participate in the main study phase. They were recruited via the USF psychology subject pool (SONA;  $n = 351$ ; 43.5% women) and with flyers posted around campus and in USF mass email communications (i.e., Canvas announcements) ( $n = 517$ ; 62.1% women). Participants in this phase were included if they were a current USF undergraduate student, at least 18 years of age, and fluent in the English language. Forty-eight participants (5.5%) were excluded for demonstrating an unusually short survey completion time (i.e., less than 10 minutes). Participants who demonstrated lengthy survey completion times provided a normal range of responses (e.g., no outliers) and therefore, were not excluded. In addition, of the 463 (53.3%) participants who had provided their email addresses following completion of the survey, five had completed the online survey twice and thus, data from their second entry were excluded.

The final sample of participants ( $n = 820$ ; 54.3% women) ranged from 18 to 49 years ( $M = 20.89$ ;  $SD = 3.66$ ). The sample was ethnically and racially diverse, with participants self-reporting their ethnicity as Hispanic ( $n = 201$ ; 24.5%) and Non-Hispanic ( $n = 619$ ; 75.5%), and their race as White/Caucasian ( $n = 580$ ; 70.7%), African-American ( $n = 85$ ; 10.4%), Asian ( $n = 71$ ; 8.7%), Other ( $n = 43$ ; 5.2%), American Indian/Alaska Native ( $n = 6$ ; 0.7%), and Native Hawaiian/Pacific Islander ( $n = 4$ ; 0.5%). Thirty participants (3.7%) identified as more than one race, and one participant (0.1%) was missing race data. More than half of students ( $n = 644$ ; 78.6%) were in their first or second year at USF, and the majority were living off-campus ( $n = 577$ ; 70.4%) or in an on-campus residence hall ( $n = 231$ ; 28.2%). The final sample was in alignment with the USF undergraduate student demographic profile and thus appears to be representative of this student body (see USF, 2016-2017).

SONA and non-SONA recruited participants exhibited significant differences in gender,  $\chi^2(1, N = 802) = 33.14, p < .001$ , and age,  $t(737) = 3.39, p = .001, d = .25$ , such that the non-SONA sample consisted of more women (i.e., we purposely recruited more men during one semester of data collection in SONA) and was significantly older than SONA sample. These two samples also significantly differed in sexual orientation,  $\chi^2(6, N = 819) = 14.38, p = .03$ , relationship status,  $\chi^2(1, N = 820) = 14.56, p < .001$ , employment status,  $\chi^2(2, N = 820) = 13.56, p = .001$ , USF year,  $\chi^2(4, N = 820) = 31.45, p < .001$ , and current living situation,  $\chi^2(3, N = 820) = 11.40, p = .01$ . That is, relative to SONA participants, non-SONA participants were more

likely to be bisexual or other, living with another, employed, later in their schooling at USF, and living in off-campus apartments/houses or on-campus residence halls<sup>1</sup>.

## **Procedure**

Participants provided electronic consent prior to participation and were informed that their research data would be kept strictly confidential. Following completion of the survey, participants were told the purpose of the study and were provided with contact information of the Principal Investigator, along with a list of community and USF-based resources (e.g., USF Psychological Services Center). Participants who completed the survey via SONA were compensated with 0.5 SONA credits per half hour of their time, whereas participants who completed the survey outside of SONA were provided with an alphanumeric ID code and the URL for an independent website, where they had the opportunity to enter the code and their email address for a chance to win one of forty \$75 cash prizes or gift cards.

## **Measures**

### **Demographic Information**

Participants completed a brief 12-item self-report demographics questionnaire (see Appendix A). The questionnaire assessed participants' age, gender, ethnicity, race, sexual orientation, current USF student status, academic grade level, living situation, employment status, marital status, income source, and English fluency (see Table 1 for participant demographics). Men and women differed in sexual orientation,  $\chi^2(6, N = 801) = 44.70, p < .001$ , and employment status,  $\chi^2(2, N = 802) = 6.65, p = .04$ . Women were more likely to identify as

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<sup>1</sup> Considering sample demographic differences, primary regressions were run separately for SONA and non-SONA samples, and run in the total sample co-varying recruitment method. Results were generally consistent across samples, with the exception of a non-significant Factor 2 main effect for provision in the SONA sample, a significant F2 x gender interaction for consumption in the SONA sample only, and a significant F1 x gender interaction for consumption in the non-SONA sample only. Aims 2 and 3 findings were identical when including recruitment method as a covariate and thus, results without this covariate are reported below.

bisexual, pansexual, or unsure (and men were more likely to identify as homosexual) for sexual orientation, and women were more likely to be employed compared to men. However, men and women did not significantly differ in age, ethnicity, race, USF student status, living situation, relationship status, or income source.

### **Substance Use**

Alcohol and drug use was assessed using the Texas Christian University Drug Screen-V (TCUDS-V; see Appendix B). The TCUDS-V, based on the Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> Edition (DSM-5; American Psychiatric Association, 2013), is a self-report screening measure for drug abuse and dependence over the past 12 months. While the TCUDS-V has been recently adapted to the DSM-5, the measure was modified from the established Texas Christian University Drug Screen (TCUDS-V), which has been found to produce scores exhibiting satisfactory psychometric properties (Knight et al., 2002). The TCUDS-V comprises 17 self-report items. Item 1 assessed frequency of use for alcohol and 18 distinct drug types (e.g., “How often did you use each type of drug during the past 12 months”), and participants were asked to respond on a scale ranging from 0 (*never*) to 4 (*daily*). Item 2 asked about the substance type that caused the most serious problem during the past 12 months. Participants were then asked to indicate “yes” or “no” to the next 11 items, which are designed to tap into problems associated with use of the most problematic drug (e.g., “Did you have a strong desire or urge to use drugs?”). Finally, the remaining 4 items, rated on one of two scales (i.e., ranging from *never – 4 or more times*; ranging from *not at all - extremely*), are geared toward drug problems and treatment (e.g., “How many times before now have you ever been in a drug treatment program?”).

**Table 1.** Demographic Characteristics of Pilot ( $n = 182$ ) and Main Data Collection ( $n = 820$ ).

|                                  | <b>Pilot Sample</b> |      | <b>Main Data Collection</b> |      |                       |      |                           |      |
|----------------------------------|---------------------|------|-----------------------------|------|-----------------------|------|---------------------------|------|
|                                  | <i>n</i>            | %    | <i>Total</i>                |      | <i>SONA (n = 343)</i> |      | <i>Non-SONA (n = 477)</i> |      |
| <b>Gender</b>                    | <i>n</i>            | %    | <i>n</i>                    | %    | <i>n</i>              | %    | <i>n</i>                  | %    |
| Male                             | 27                  | 14.9 | 357                         | 43.5 | 190                   | 55.4 | 167                       | 35.0 |
| Female                           | 154                 | 84.6 | 445                         | 54.3 | 147                   | 42.9 | 298                       | 62.5 |
| Transgender Male                 | 1                   | 0.5  | 2                           | 0.2  | 0                     | 0.0  | 2                         | 0.4  |
| Transgender Female               | 0                   | 0    | 3                           | 0.4  | 0                     | 0.0  | 3                         | 0.6  |
| Genderqueer/Non-Binary           | 0                   | 0    | 13                          | 1.6  | 6                     | 1.7  | 7                         | 1.5  |
| <b>Ethnic Group</b>              |                     |      |                             |      |                       |      |                           |      |
| Hispanic                         | 37                  | 20.3 | 201                         | 24.5 | 84                    | 24.5 | 117                       | 24.5 |
| Non-Hispanic                     | 145                 | 79.7 | 619                         | 75.5 | 259                   | 75.5 | 360                       | 75.5 |
| <b>Racial Group</b>              |                     |      |                             |      |                       |      |                           |      |
| White/Caucasian                  | 121                 | 66.5 | 580                         | 70.8 | 251                   | 73.2 | 329                       | 69.0 |
| Black/African-American           | 24                  | 13.2 | 85                          | 10.4 | 27                    | 7.9  | 58                        | 12.2 |
| Asian                            | 17                  | 9.3  | 71                          | 8.7  | 32                    | 9.3  | 39                        | 8.2  |
| Other                            | 17                  | 9.3  | 43                          | 5.3  | 21                    | 6.1  | 22                        | 4.6  |
| American Indian/Alaska Native    | 3                   | 1.6  | 6                           | 0.7  | 3                     | 0.9  | 3                         | 0.6  |
| Native Hawaiian/Pacific Islander | 0                   | 0.0  | 4                           | 0.5  | 2                     | 0.6  | 2                         | 0.4  |
| More than one                    | 0                   | 0.0  | 30                          | 3.7  | 7                     | 2.0  | 23                        | 4.8  |
| <b>Education Level</b>           |                     |      |                             |      |                       |      |                           |      |
| Less than 1 year                 | 88                  | 48.4 | 281                         | 34.3 | 148                   | 43.1 | 133                       | 27.9 |
| 1 year                           | 27                  | 14.8 | 195                         | 23.8 | 84                    | 24.5 | 111                       | 23.3 |
| 2 years                          | 41                  | 22.5 | 168                         | 20.5 | 64                    | 18.7 | 104                       | 21.8 |
| 3 years                          | 22                  | 12.1 | 129                         | 15.7 | 33                    | 9.6  | 96                        | 20.1 |
| 4+ years                         | 4                   | 2.2  | 47                          | 5.7  | 14                    | 4.1  | 33                        | 6.9  |
| <b>Employment Status</b>         |                     |      |                             |      |                       |      |                           |      |
| Unemployed                       | 98                  | 53.8 | 373                         | 45.5 | 179                   | 52.2 | 194                       | 40.7 |
| Employed part-time               | 69                  | 37.9 | 373                         | 45.5 | 127                   | 37.0 | 246                       | 51.6 |
| Employed full-time               | 12                  | 6.6  | 54                          | 6.6  | 26                    | 7.6  | 28                        | 5.9  |
| Other                            | 2                   | 1.1  | 17                          | 2.1  | 10                    | 2.9  | 7                         | 1.5  |
| Retired                          | 1                   | 0.5  | 3                           | 0.4  | 1                     | 0.3  | 2                         | 0.4  |
| <b>Marital Status</b>            |                     |      |                             |      |                       |      |                           |      |
| Single                           | 158                 | 86.8 | 642                         | 78.3 | 291                   | 84.8 | 351                       | 73.6 |
| Living with a partner            | 12                  | 6.6  | 134                         | 16.3 | 39                    | 11.4 | 95                        | 19.9 |
| Married / Domestic Partnership   | 10                  | 5.5  | 38                          | 4.6  | 11                    | 3.2  | 27                        | 5.7  |
| Divorced / Separated             | 2                   | 1.1  | 6                           | 0.7  | 2                     | 0.6  | 4                         | 0.8  |
| <b>Sexual Orientation</b>        |                     |      |                             |      |                       |      |                           |      |
| Heterosexual                     | 159                 | 87.4 | 659                         | 80.5 | 292                   | 85.1 | 367                       | 76.9 |
| Bisexual                         | 12                  | 6.6  | 85                          | 10.4 | 27                    | 7.9  | 58                        | 12.2 |
| Homosexual                       | 6                   | 3.3  | 33                          | 4.0  | 14                    | 4.1  | 19                        | 4.0  |
| Unsure                           | 2                   | 1.1  | 18                          | 2.2  | 6                     | 1.7  | 12                        | 2.5  |
| Other                            | 2                   | 1.1  | 19                          | 2.3  | 2                     | 0.6  | 17                        | 3.6  |
| Asexual                          | 1                   | 0.5  | 5                           | 0.6  | 1                     | 0.3  | 4                         | 0.8  |

For the purpose of this study, frequency of alcohol use and frequency of drug use (item 1) was summed across the 18 drug types to yield scores indicative of overall substance use in the past year ( $\alpha = .70$ ). Independent samples t-tests revealed that SONA and non-SONA participants did not significantly differ in overall substance use,  $t(730) = 1.06, p = .29, d = .08$ , nor did men and women,  $t(715) = .21, p = .83, d = .02$ . Responses from 88 (10.7%) participants were deemed as missing or outliers and were not included in analyses involving substance use.

### **Psychopathy**

Psychopathy was measured using the Self-Report Psychopathy Scale-III (SRP-III; Paulhus et al., 2012), a self-report assessment demonstrating adequate reliability and validity estimates in undergraduate student samples (Williams et al., 2003) (Appendix C). Adapted from the PCL-R (Hare, 2003), the SRP-III is a 64-item inventory designed to assess psychopathic traits, with factor analyses revealing a similar four-facet model (i.e., interpersonal manipulation, cold affect, impulsive thrill-seeking, and antisocial behavior) to the semi-structured PCL-R interview (Williams et al., 2003). Scholars have used the SRP-III to examine the construct as a two-factor structure analogous to the PCL-R, with interpersonal manipulation (IM; e.g., “I think I could “beat” a lie detector”) and cold affect (CA; e.g., “I don’t bother to keep in touch with my family any more”) facets comprising Factor 1 and impulsive thrill-seeking or erratic lifestyle (EL; e.g., “I’m a rebellious person”) and antisocial behavior (AB; e.g., “I have assaulted a law enforcement official or social worker”) comprising Factor 2 (Lishner, Swim, Hong, & Vitacco, 2011; Sandvik, Hansen, Johnsen, & Laberg, 2014; Wheeler, Book, & Costello, 2009).

Participants responded to the 64 items on a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*) ( $\alpha = .92$ ). Factor 1 and Factor 2 scores were significantly positively correlated,  $r(810) = .66, p < .001$ , and both factors exhibited adequate internal

reliability (Factor 1:  $\alpha = .88$ ; Factor 2:  $\alpha = .85$ ). Men scored significantly higher than women on SRP-III total,  $t(790) = 12.46, p < .001, d = .91$ , Factor 1,  $t(790) = 13.43, p < .001, d = .94$ , and Factor 2,  $t(790) = 8.87, p < .001, d = .64$ . SONA and non-SONA participants did not differ in psychopathy scores ( $d = .02 - .09$ ).

### **Erotic Services**

Engagement in erotic services was measured using the Erotic Activity Questionnaire (EAQ; see Appendix D), a new measure developed by the author, Dr. Edelyn Verona, and Dr. Jill McCracken. The EAQ was designed to capture the polymorphous nature of commercial sex involvement and was intended to capture the provision and consumption of sex work across various erotic services and sex exchange. A comprehensive assessment of sex work does not currently exist in the literature and to date, studies have broadly operationalized the construct. Most research assesses this behavior via a few study-specific items on a questionnaire (i.e., yes/no), with some tailored specifically to women (e.g., “Have you ever received money or gifts for having sex with a man?”) (e.g., Kim et al., 2005; Roberts et al., 2013). Thus, drawing from a collection of prior studies on risky sexual behavior and sex work, across both substance-using and college samples, the EAQ was designed to comprehensively assess sex work behavior across gender (Betzer et al., 2015; Darke, Hall, Heather, Ward, & Wodak, 1991; Lavoie et al., 2010; Prior, Hubbard, & Birch, 2013; Roberts et al., 2013; Sanders, 2004; Sausa, Keatley, & Operario, 2007; Spice, 2007; Svedin & Priebe, 2007; Tull, Gratz, & Weiss, 2011).

Prior to piloting the EAQ, the measure underwent several revisions based on structured focus groups and expert review. First, focus groups were conducted to assess the measure on aspects including but not limited to, length, instruction, item clarity and interpretation, response options, and structure and organization. Evaluations of the measure were discussed as a group

and elected modifications were incorporated into the measure. Following the focus groups, the updated EAQ underwent expert review by Dr. Jill McCracken and Dr. Nancy Romero-Daza, recognized researchers and experts in the field of sex work. The two-member expert panel reviewed the updated version of the EAQ and revisions were implemented based on their independent critiques of the measure, resulting in the version included in the pilot phase of the study. Finally, following preliminary pilot data analysis, a few minor revisions were made to provide further specificity to instructions and particular items (e.g., clarification that provision and consumption of services do not include those in the context of a romantic relationship).

For purposes of the current study, we used main items of the EAQ to measure number of sexual partners, along with the provision and consumption of various erotic services and sex exchange for material gain. Item 1 assesses overall sexual promiscuity and asks participants to report the number of different people with whom they have had sex in their lifetime and the last year, with responses ranging from 0 (*none*) to 7 (*61+ people*). Items 2 and 3 assess the *provision* of erotic services and sex exchange for material gain. Specifically, participants are asked to self-report “yes” or “no” to two main items. To measure broader erotic service provision, they were asked whether they have ever been given something (e.g., money / salary, drugs and/or alcohol, food, shelter, gifts, job opportunity / promotion, etc.) for involvement in various erotic services, ranging from bar/casino worker or beer tab attendant to street-based street worker or prostitute (item 2). To measure sex exchange, they were asked whether they have ever been given something (e.g., money / salary, drugs and/or alcohol, food, shelter, gifts, job opportunity / promotion, etc.) for giving sex in exchange (including vaginal, anal, and/or oral sex) (item 3). See Appendix D for the list of services assessed. Participants who endorsed *provision* of erotic services were then asked to report, for each activity endorsed, whether it happened in the last



year, the duration (ranging from 0 – *only one time* to 6 – *5+ years*) and frequency (ranging from 0 – *only one time* to 6 – *more than 4 times a week*) of involvement, what they received in exchange for their services (e.g., money, salary drugs, food, shelter), and the percentage of their yearly income made by each service provided.

Sex work *consumption* was measured in a similar fashion to provision. Participants were asked to self-report whether they had ever utilized any of the services, not including in the context of a romantic relationship (item 4). In addition, participants were asked to report whether they had ever given someone something (e.g., money, drugs, etc.) in order to obtain sex from them (including vaginal, anal, oral sex) (item 5). Similar to the provision questions, participants who endorsed *consumption* were then asked to report, for each service endorsed, whether it happened in the last year, the number of times they had done it (ranging from 1 (*one time*) – 7 (*101+ times*)), and what they provided in exchange for services.

In light of work pointing to various forms of sex work behavior, EAQ erotic services were also divided into two categories, including (1) services not typically involving physical contact and thus, no sex exchange, and (2) services typically involving physical contact and possibly sex exchange. First, in alignment with previous work (Harcourt & Donovan, 2005; Lindemann, 2013; Maticka-Tyndale et al., 1999), the following *provision* services were categorized as those involving physical contact: erotic dancing, massage parlor, pornography, BDSM/Dominatrix, escorting, brothel, and prostitution. Electronic forms of erotic service (i.e., erotic pictures/sex tapes online/by phone or “sexting”, erotic nude modeling magazines/websites, and phone sex operator and/or webcam performance) were categorized as those without physical contact. Lastly, through consultation with Dr. Jill McCracken, the following services were also classified as those without physical contact: bars/clubs where employees wear sexy clothing, wet

t-shirt contest, Girls Gone Wild/Guys Gone Wild, burlesque performance. Erotic services were categorized in the same manner for consumption, with the exception of pornography, which instead was included under services without physical contact (i.e., online).

Given that the EAQ is a newly developed measure, pilot data were first collected in an effort to provide preliminary data on its use and to inform primary data analyses.

## **Data Analytic Strategy**

### **Preliminary Analyses**

Demographic characteristics for the pilot sample ( $n = 182$ ) are shown in Table 1. Provision of erotic services and sex exchange were assessed using the EAQ. Similar to prior studies on sex work among student populations (Betzer et al., 2015; Roberts et al., 2013; Roberts et al., 2010), approximately 9% of pilot participants ( $n = 16$ ) endorsed provision of at least one erotic service and/or sex exchange in their lifetime, with approximately 30% ( $n = 5$ ) of these participants reporting involvement in more than one service ( $range = 2 - 9$ ). Overall endorsement in the provision of individual erotic services was relatively low, and services with the highest endorsement included posting nude / erotic pictures or videos online, “sexting” ( $n = 9$ ), and bar / casino worker or beer tab attendant (offering alcohol beverages to customers) where dressing sexy is required ( $n = 3$ ). In addition, a total of 4 women participants endorsed having been given something (e.g., money, drugs, etc.) for providing sex. To examine the distribution of provision, number of provided erotic services (including sex exchange) was summed across all potential services (i.e., EAQ 2a-2o and 3) for each participant, resulting in scores ranging from 0 to 9 ( $M = .17$ ;  $SD = .80$ ;  $skewness = 8.47$ ;  $kurtosis = 86.21$ ) for the total sample. Gender differences were not explored given that the pilot sample was predominantly women ( $n = 154$ ; 84.6%).

In terms of consumption, approximately 35% ( $n = 64$ ) of participants self-reported consumption of at least one erotic service and/or sex exchange in their lifetime, a rate similar to that found in a prior study on college students in the United Kingdom (Roberts et al., 2013). Of these participants, approximately 58% ( $n = 37$ ) reported consumption of more than one service ( $range = 2 - 7$ ). Consumption of individual erotic services was higher than for provision, and services with the highest endorsement included bars or clubs where employees wear bikinis or other sexy clothing (e.g., Hooters) ( $n = 45$ ), pornography or adult film ( $n = 40$ ), erotic dancing club and/or nude peep show performance ( $n = 13$ ), and erotic nude modeling magazines and/or websites ( $n = 10$ ). A total of 2 men endorsed having given someone something (e.g., money, drugs, etc.) to obtain sex from them. Given that consumption exhibited higher endorsement than provision, the distribution for consumption was examined in two ways in the current study. First, number of consumed erotic services (including sex exchange) was summed across all potential services (i.e., EAQ 4a-4n and 5) for each participant, resulting in scores ranging from 0 to 7 ( $M = .75$ ;  $SD = 1.30$ ;  $skewness = 2.22$ ;  $kurtosis = 5.46$ ) in the total sample. Second, the mean frequency of consumption across all endorsed erotic services (i.e., sex exchange) was calculated, resulting in scores ranging from 1 to 6 ( $M = 2.65$ ;  $SD = 1.17$ ;  $skewness = .96$ ;  $kurtosis = .46$ ) in the total sample. Again, gender differences were not examined due to the small number of men included in the pilot sample ( $n = 28$ ; 15.4%).

### **Primary Data Analyses**

The final sample size of 820 participants was deemed appropriate based on a priori power analyses conducted for regression models with categorical (Long, 1997) and continuous (Cohen, 1988) outcome variables, along with oversampling to adequately account for low endorsement. In the primary data collection, data were first cleaned and scores were derived from all included

survey measures. Descriptive statistics (e.g., mean, standard deviation, variance) were calculated for each of these respective scores and their distributions were examined to check for outliers and determine whether skewness and kurtosis values were representative of non-normality. Outliers for age and substance use were excluded using the median absolute deviation approach based on the inter-quartile range (Leys, Ley, Klein, Bernard, & Licata, 2013). Whereas outliers and non-normality was not detected with SRP-III Factor 1 (*skewness* = .14; *kurtosis* = -.03) and Factor 2 (*skewness* = .33; *kurtosis* = -.12), the above method was applied to TCUDS-V overall substance use (*skewness* = 4.30; *kurtosis* = 44.17) which helped to correct for non-normality (*skewness* = 1.21; *kurtosis* = .93). Substance use and psychopathy variables were first mean centered before being entered in the models.

In terms of the EAQ, analyses focused on *lifetime* involvement in erotic services and/or sex exchange. As predicted based on the pilot data, overall prevalence of sex work provision was low, with 94 (11.5%) participants endorsing provision of at least one erotic service and/or sex exchange. As such, provision of sex work was first calculated by counting the number of erotic services and sex exchange endorsed (items 3 and 4). Examining provision as a count variable resulted in a highly positively skewed distribution ( $M = .21$ ;  $SD = .75$ ; *skewness* = 5.77; *kurtosis* = 42.94) and a square root transformation did not correct for non-normality ( $M = .15$ ;  $SD = .43$ ; *skewness* = 3.09; *kurtosis* = 9.77). Thus, provision was examined as a dichotomous variable.

Prevalence of sex work consumption was much higher, with 262 (32.0%) participants endorsing consumption of at least one erotic service and/or sex exchange and therefore, was examined as a count variable representing total number of consumed erotic services and/or sex exchange ( $M = .72$ ;  $SD = 1.37$ ; *skewness* = 2.88; *kurtosis* = 12.42).

Aim 1, and Hypothesis 1.1 specifically, was examined via frequency distributions for EAQ provision and consumption of erotic service and/or sex exchange, both for the total sample and men and women separately, and Hypothesis 1.2 was tested by comparing frequencies of erotic services typically not involving physical contact versus those typically involving physical contact and/or sex exchange. Hypothesis 1.3 on gender differences was tested by way of chi-square tests of independence for provision and independent samples t-tests for consumption. When groups exhibited unequal variances based on a significant Lavene's Test for Equality of Variances, t-test results based on equal variances not assumed are reported. Lastly, because hypothesis 1.3 focused on gender differences specifically, only participants who reported their gender identity as male or female ( $n = 802$ , 97.8%) were included in these analyses.

Aims 2 and 3 were examined by way of regression analyses. Logistic regression was employed for all analyses on sex work provision. Given that sex work consumption was examined using the count variable representing sum across erotic services (i.e., sex exchange), analyses were conducted using Poisson regressions. Poisson regressions in particular were run since the data did not demonstrate over- or under-dispersion (i.e., mean-variance equality).

To determine potential covariate(s), appropriate tests were first run between demographic and outcome variables. Analyses revealed significant relationships between sex work provision and sexual orientation,  $\chi^2(1, N = 802) = 13.54, p < .001$ , and sex work provision and current living situation (off-campus apartment/house vs. off-campus, at home:  $OR = .32, p = .002$ ) and financial status (dependent vs. independent:  $OR = 2.93, p = .001$ ). Thus, these three demographic variables were included as covariates in subsequent analyses testing sex work provision.

As for consumption, men ( $M = 1.07; SD = 1.67$ ) exhibited a higher mean sex work consumption sum than women ( $M = .44; SD = .99$ ),  $t(532.35) = 6.14, p < .001, d = .46$ ; and age

was related to sex work consumption,  $r(712) = .13, p < .001$ . Race (white vs. black:  $b = -.60, IRR = .55, p < .001$ ; white vs. other:  $b = -.33, IRR = .72, p = .005$ ), sexual orientation (heterosexual vs. other:  $b = -.41, IRR = .68, p < .001$ ), USF year (<1 vs. 4:  $b = .39, IRR = 1.47, p = .02$ ), living situation (off-campus apartment/house vs. residence hall:  $b = -.33, IRR = .72, p = .001$ ; off-campus apartment/house vs. home:  $b = -.46, IRR = .63, p < .001$ ), and employment status (employed vs. other:  $b = .54, IRR = 1.72, p = .01$ ) were also related to consumption, as well as relationship status,  $t(212.23) = 2.58, p = .01, d = .25$ . However, financial status was not,  $t(760.32) = 1.51, p = .13, d = .10$ . These variables were included as covariates in analyses testing consumption in Aims 2 and 3 (with the exception of gender in Aim 3).

Hypothesis 2.1 was tested using hierarchical logistic regression models in which sexual orientation, current living situation, and financial status were first entered as covariates; followed by TCUDS-V overall substance use in the second step; SRP-III Factor 1 and Factor 2 scores in the third step; and the interaction between Factor 1 x Factor 2 in the fourth step. Hypothesis 2.2 was examined via one hierarchical logistic regression in which the same covariates were entered in step one; substance use, SRP-III Factor 1, and SRP-III Factor 2 in step two; the two-way interactions between substance use x Factor 1, substance use x Factor 2, and Factor 1 x Factor 2 in step three; and the three-way interaction, substance use x Factor 1 x Factor 2, in step four. Hypotheses 2.3 and 2.4 were run in a similar fashion, but instead using Poisson regression models and including appropriate covariates for consumption (i.e., age, gender, race, sexual orientation, school year, living situation, employment status, relationship status).

Hypothesis 3.1 was tested via hierarchical logistic regression models with covariates and substance use entered first; gender, Factor 1, and Factor 2 entered second; the two-way interactions involving gender x Factor 1, gender x Factor 2, and Factor 1 x Factor 2 entered third;

and the three-way interaction involving gender x Factor 1 x Factor 2 entered fourth. Hypothesis 3.2 was tested in a similar manner, but instead via a Poisson regression model and including the appropriate covariate variables for consumption.

## RESULTS

### Descriptive Statistics

Descriptive statistics for primary study variables are shown in Table 2 (top panel). Across gender, mean number of lifetime sexual partners ranged from 0 (*none*) to 7 (*60+*) ( $M = 1.87$ ;  $SD = 1.54$ ). Participants who endorsed provision of any erotic service and/or sex exchange had significantly more lifetime sexual partners ( $M = 3.26$ ;  $SD = 1.81$ ) relative to those who did not endorse provision ( $M = 1.68$ ;  $SD = 1.41$ ),  $t(108.30) = 8.09$ ,  $p < .001$ ,  $d = .97$ . Moreover, sum of consumption across any erotic service and/or sex exchange was positively associated with number of lifetime partners,  $r(788) = .20$ ,  $p < .001$ .

As shown in Table 2 (bottom panel), zero-order correlations revealed that provision and consumption of erotic service and/or sex exchange were both positively correlated with overall substance use, along with SRP-III Factor 1 and Factor 2 scores. Participants who endorsed erotic service/sex exchange provision displayed significantly more substance use relative to those who denied provision,  $t(90.68) = 3.87$ ,  $p < .001$ ,  $d = .49$ . Similarly, when compared to those without erotic service provision, those with scored significantly higher on Factor 1,  $t(800) = 5.21$ ,  $p < .001$ ,  $d = .54$ , and Factor 2,  $t(800) = 8.27$ ,  $p < .001$ ,  $d = .88$ . Finally, participants who had consumed erotic services and/or sex exchange demonstrated significantly more substance use than those who had not,  $t(398.01) = 3.96$ ,  $p < .001$ ,  $d = .32$ , along with significantly higher scores on Factor 1,  $t(600.17) = 5.75$ ,  $p < .001$ ,  $d = .42$ , and Factor 2,  $t(581.76) = 5.56$ ,  $p < .001$ ,  $d = .41$ .



**Table 2.** Descriptive Statistics for Primary Variables of Interest in Main Data Collection.

|                    | Total Sample |           |              | Men      |           |              | Women    |           |              |
|--------------------|--------------|-----------|--------------|----------|-----------|--------------|----------|-----------|--------------|
|                    | <i>M</i>     | <i>SD</i> | <i>Range</i> | <i>M</i> | <i>SD</i> | <i>Range</i> | <i>M</i> | <i>SD</i> | <i>Range</i> |
| <b>TCUDS-V</b>     |              |           |              |          |           |              |          |           |              |
| Substance use      | 2.51         | 2.48      | 0 – 10       | 2.50     | 2.54      | 0 – 10       | 2.54     | 2.45      | 0 – 10       |
| <b>SRP-III</b>     |              |           |              |          |           |              |          |           |              |
| Total              | 2.24         | .43       | 1.09 – 3.47  | 2.44     | .39       | 1.22 – 3.41  | 2.08     | .40       | 1.09 – 3.47  |
| Factor 1           | 2.40         | .50       | 1.16 – 4.00  | 2.65     | .45       | 1.34 – 4.00  | 2.21     | .46       | 1.16 – 3.72  |
| Factor 2           | 2.07         | .45       | 1.00 – 3.44  | 2.23     | .45       | 1.09 – 3.44  | 1.95     | .42       | 1.00 – 3.31  |
| <b>EAQ</b>         |              |           |              |          |           |              |          |           |              |
|                    |              | N         | %            |          |           | N            |          | %         |              |
| Provision (yes/no) |              | 94        | 11.5         |          |           | 44           |          | 12.3      |              |
|                    | <i>M</i>     | <i>SD</i> | <i>Range</i> | <i>M</i> | <i>SD</i> | <i>Range</i> | <i>M</i> | <i>SD</i> | <i>Range</i> |
| Consumption Sum    | .74          | 1.37      | 0 – 12       | 1.07     | 1.6       | 0 – 12       | .44      | .99       | 0 – 8        |
|                    |              |           |              |          | 7         |              |          |           |              |

*Zero-order Correlations among Primary Variables of Interest*

|                           | 1      | 2      | 3      | 4     | 5   |
|---------------------------|--------|--------|--------|-------|-----|
| 1.Substance Use           | ---    |        |        |       |     |
| 2.SRP-III Factor 1        | .14*** | ---    |        |       |     |
| 3.SRP-III Factor 2        | .34*** | .66*** | ---    |       |     |
| 4.Provision of Sex Work   | .15*** | .19*** | .28*** | ---   |     |
| 5.Consumption of Sex Work | .17*** | .19*** | .24*** | .15** | --- |

*Notes.* EAQ provision and consumption sums represent the sum across all erotic services and/or sex exchange. TCUDS-V substance use values are reported following outlier exclusion. Given low endorsement for EAQ provision, this variable was examined dichotomously (Yes:  $n = 94$ , 11.5%; No:  $n = 709$ , 86.5%). Point bi-serial correlations are shown for EAQ provision of sex work. \*\*\* $p \leq .001$ , \*\* $p \leq .01$ .

## **Aim 1: Student Erotic Service Involvement**

Hypothesis 1.1 was tested via frequency distributions for EAQ provision and consumption of erotic services and/or sex exchange across all participants and by gender. In alignment with our hypothesis, students endorsed lower rates of provision than consumption. That is, whereas 11.5% ( $n = 94$ ) of the total sample endorsed provision in at least one erotic service and/or sex exchange, 32.0% ( $n = 262$ ) endorsed consumption of these services, and provision rates were lower than consumption across all services, with the exception of personal escort and other (see Table 3). Provision and consumption were modestly related,  $r(786) = .15, p < .001$ , suggesting some minor endorsement overlap across these constructs. Finally, a similar pattern of results emerged in men (12.3% in provision vs. 42.3% in consumption) and women (11.0% in provision vs. 23.4% in consumption), such that provision was endorsed less frequently than consumption.

Hypothesis 1.2 was explored for provision and consumption by conceptually dividing erotic services into (1) those typically *not* involving physical contact or sex exchange, and (2) those typically involving physical contact and/or sex exchange (see Table 4 for services in each group). Despite a significant chi-square test for provision,  $\chi^2(1, N = 801) = 128.71, p < .001$ , our hypothesis did not appear to be supported, such that there were a similar number of students endorsing engagement in services without contact, services with contact, and both (see Table 4 – bottom panel). Thus, the significant chi-square test is likely due to a disproportionately large number of participants who had never engaged in provision. There was overlap across the two provision categories, with 26 out of 820 students (3.2%) providing services from both, and sum across services with and without contact were correlated,  $r(797) = .53, p < .001$ .

**Table 3.** Undergraduate Student Prevalence of Various Erotic Services.

|  | Provision    |              |              | Consumption  |              |              |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
|  | Total        | Men          | Women        | Total        | Men          | Women        |
|  | <i>n (%)</i> | <i>n (%)</i> | <i>n (%)</i> | <i>n (%)</i> | <i>n (%)</i> | <i>n (%)</i> |
| Bar/clubs where employees wear sexy clothing           | 25 (3.0)     | 14 (3.9)     | 11 (2.5)     | 131 (16.0)   | 79 (22.1)    | 50 (11.2)    |
| Erotic pictures/sex tapes online/by phone or “sexting” | 33 (4.0)     | 17 (4.8)     | 16 (3.6)     | ---          | ---          | ---          |
| Erotic nude modeling magazines or websites             | 7 (0.9)      | 4 (1.1)      | 3 (0.7)      | 88 (10.7)    | 65 (18.2)    | 21 (4.7)     |
| Wet t-shirt contest                                    | 5 (0.6)      | 1 (0.3)      | 4 (0.9)      | 10 (1.2)     | 7 (2.0)      | 3 (0.7)      |
| Girls Gone Wild / Guys Gone Wild                       | 2 (0.2)      | 1 (0.3)      | 1 (0.2)      | 11 (1.3)     | 5 (1.4)      | 6 (1.3)      |
| Burlesque performance                                  | 2 (0.2)      | 1 (0.3)      | 1 (0.2)      | 9 (1.1)      | 2 (0.6)      | 5 (1.1)      |
| Erotic dancing and/or nude peep show performance       | 12 (1.5)     | 8 (2.2)      | 4 (0.9)      | 62 (7.6)     | 41 (11.5)    | 21 (4.7)     |
| Sensual/erotic massage parlor                          | 7 (0.9)      | 4 (1.1)      | 3 (0.7)      | 8 (1.0)      | 7 (2.0)      | 1 (0.2)      |
| Phone sex operator and/or webcam performance           | 10 (1.2)     | 3 (0.8)      | 6 (1.4)      | 24 (2.9)     | 16 (4.5)     | 7 (1.6)      |
| Pornography or adult film performance                  | 12 (1.5)     | 10 (2.8)     | 2 (0.4)      | 194 (23.7)   | 115 (32.2)   | 72 (16.2)    |
| BDSM/Dominatrix (not in romantic relationship)         | 6 (0.7)      | 2 (0.6)      | 3 (0.7)      | 7 (0.9)      | 5 (1.4)      | 2 (0.4)      |
| Short- or long-term personal escort                    | 12 (1.5)     | 5 (1.4)      | 7 (1.6)      | 5 (0.6)      | 4 (1.1)      | 1 (0.2)      |
| Brothel  | 1 (0.1)      | 1 (0.3)      | 0 (0)        | 4 (0.5)      | 4 (1.1)      | 0 (0)        |
| Prostitute or street-based sex worker                  | 1 (0.1)      | 0 (0)        | 0 (0)        | 7 (0.9)      | 6 (1.7)      | 1 (0.2)      |
| Other  | 7 (0.9)      | 4 (1.1)      | 3 (0.7)      | 4 (0.6)      | 4 (1.1)      | 0 (0.0)      |
| Sex Exchange   | 25 (3.0)     | 10 (2.8)     | 14 (3.1)     | 12 (1.5)     | 12 (3.4)     | 0 (0.0)      |

*Notes.* Categories endorsed by participants who identified gender as something other male or female include: provision (i.e., phone sex operator, BDSM, prostitute/street-based work, sex exchange); consumption (i.e., bars/clubs, erotic nude modeling, burlesque performance, phone sex operator, pornography).

**Table 4.** Student Involvement in Erotic Services Without and With Physical Contact.

| <b>Hypothesis 1.2</b>                                     |  |           |   |  |           |
|---|--|-----------|---|--|-----------|
| <i>Provision</i>  |  |           | <i>Consumption</i>                                  |  |           |
| Services <i>without</i> physical contact                  | Services <i>with</i> physical contact        |           | Services <i>without</i> physical contact            | Services <i>with</i> physical contact        |           |
| 1. Bar/clubs (e.g., Hooters)                              | 1. Erotic dancing/nude peep show performance |           | 1. Bar/clubs (e.g., Hooters)                        | 1. Erotic dancing/nude peep show performance |           |
| 2. Erotic pictures/sex tapes online/by phone or “sexting” | 2. Erotic massage parlor                     |           | 2. Erotic nude modeling magazines/websites          | 2. Erotic massage parlor                     |           |
| 3. Erotic nude modeling magazines/websites                | 3. Pornography or adult film performance     |           | 3. Wet t-shirt contest                              | 3. BDSM/Dominatrix                           |           |
| 4. Wet t-shirt contest                                    | 4. BDSM/Dominatrix                           |           | 4. Girls Gone Wild/Guys Gone Wild                   | 4. Short- or long-term personal escort       |           |
| 5. Girls Gone Wild/Guys Gone Wild                         | 5. Short- or long-term personal escort       |           | 5. Burlesque performance                            | 5. Brothel                                   |           |
| 6. Burlesque performance                                  | 6. Brothel                                   |           | 6. Phone sex operator / webcam performance          | 6. Prostitute                                |           |
| 7. Phone sex operator / webcam performance                | 7. Prostitute                                |           | 7. Pornography or adult film performance            | 7. Sex Exchange                              |           |
|   | 8. Sex Exchange                              |           |   |  |           |
|   | <b>M</b>                                     | <b>SD</b> |   | <b>M</b>                                     | <b>SD</b> |
| Sum across services <i>without</i> physical contact       | .10  | .43       | Sum across services <i>without</i> physical contact | .59  | 1.04      |
| Sum across services <i>with</i> physical contact          | .09  | .40       | Sum across services <i>with</i> physical contact    | .13  | .52       |
|   | <b><i>n</i></b>                              | <b>%</b>  |   | <b><i>n</i></b>                              | <b>%</b>  |
| Services <i>without</i> contact                           | 60   | 7.3       | Services <i>without</i> contact                     | 251  | 30.6      |
| Services <i>with</i> contact                              | 57   | 7.0       | Services <i>with</i> contact                        | 74   | 9.0       |
| Services <i>without</i> contact <u>only</u>               | 34   | 4.1       | Services <i>without</i> contact <u>only</u>         | 188  | 22.9      |
| Services <i>with</i> contact <u>only</u>                  | 31   | 3.8       | Services <i>with</i> contact <u>only</u>            | 14   | 1.7       |
| Both  | 26   | 3.2       | Both  | 59   | 7.2       |

*Notes.* Although more ambiguous than other categories, erotic dancing and BDSM/Dominatrix may involve physical contact and/or sex exchange (Lindemann, 2013; Maticka-Tyndale et al., 1999). Categories in bottom panel do not equal total number of participants who endorsed provision and consumption due to participants who endorsed “other”, but failed to indicate specific activity. Sum of services with and without contact were related for provision,  $r(797) = .53, p < .001$ , and consumption,  $r(788) = .44, p < .001$ .

However, our hypothesis for consumption was supported, with significantly higher endorsement for having consumed services without physical contact than services with physical contact,  $\chi^2(1, N = 788) = 95.96, p < .001$  (Table 4). As with provision, there was some overlap in endorsement across the two consumption categories (59 out of 820; 7.5%), and consumption sums across both categories were related,  $r(788) = .44, p < .001$ .

Lastly, hypothesis 1.3 was investigated via chi-square tests of independence for provision and independent samples t-tests for consumption. Results partially supported our hypothesis. Men and women did not significantly differ with respect to *provision* of erotic service and/or sex exchange,  $\chi^2(1, N = 785) = .35, p = .56$ ; however, men ( $M = 1.07; SD = 1.67$ ) had engaged in significantly more consumption of services and/or sex exchange than women ( $M = .44; SD = .99$ ),  $t(532.35) = 6.14, p < .001, d = .46$ . In addition, men were more likely than women to have consumed both erotic services without physical contact,  $\chi^2(1, N = 770) = 9.36, p = .002$ , and those involving physical contact,  $\chi^2(1, N = 770) = 6.57, p = .01$ .

## **Aim 2: Substance Use, Psychopathic Traits, and Erotic Service Involvement**

### **Erotic Service Provision**

Hypothesis 2.1 sought to test the extent to which substance use and psychopathic traits relate to erotic service provision via hierarchical logistic regression. As shown in Table 5 (top panel), results yielded main effect for several of the covariates: sexual orientation, current living situation, and financial status. Substance use was positively related to provision of services ( $OR = 1.17, 95\% CI [1.07, 1.27], p < .001$ ), whereas contrary to our prediction, Factor 1 traits were not significantly related to provision of services ( $OR = 1.02, 95\% CI [.52, 1.97], p = .96$ ). However, in alignment with our prediction, Factor 2 traits were positively related to provision, above and beyond substance use ( $OR = 6.02, 95\% CI [2.76, 13.10], p < .001$ ). Specifically, after adjusting for substance use, the odds of engaging in provision increased by a factor of 6.02 for each unit increase in Factor 2 scores. Factor 1 and Factor 2 did not interact in predicting provision. When these analyses were conducted separately for provision of services typically involving physical contact versus not, the analyses revealed that both substance use (*without contact*:  $OR = 1.20, 95\% CI [1.06, 1.37], p = .005$ ; *with contact*:  $OR = 1.15, 95\% CI [1.01, 1.31]$ ,

$p = .04$ ) and Factor 2 traits (*without contact*:  $OR = 3.91$ , 95%  $CI [1.14, 13.41]$ ,  $p = .03$ ; *with contact*:  $OR = 3.95$ , 95%  $CI [1.20, 12.96]$ ,  $p = .02$ ) were related to provision of erotic services without and with physical contact.

**Table 5.** Hierarchical Logistic Regressions Testing Aim 2 Hypotheses for Provision of Erotic Services.

| <b>Hypothesis 2.1</b> |                                     |          |              |           |               |          |                 |
|-----------------------|-------------------------------------|----------|--------------|-----------|---------------|----------|-----------------|
| <i>Step</i>           | <i>Variable</i>                     | <i>B</i> | <i>SE(B)</i> | <i>OR</i> | <i>95% CI</i> | $\chi^2$ | <i>-2 Log L</i> |
| 1                     | Heterosexual vs. Other              | -.98***  | .27          | .38       | [.22, .64]    | 33.26*** | 462.05          |
|                       | Apart/House vs. Res Hall            | -.44     | .30          | .64       | [.36, 1.15]   |          |                 |
|                       | Apart/House vs. Home                | -1.16**  | .43          | .32       | [.14, .72]    |          |                 |
|                       | Apart/House vs. Other               | .57      | .82          | 1.77      | [.35, 8.81]   |          |                 |
|                       | Complete Dep vs. Part Dep           | .16      | .27          | 1.18      | [.69, 2.01]   |          |                 |
|                       | Complete Dep vs. Complete Indep     | .97**    | .36          | 2.62      | [1.29, 5.34]  |          |                 |
| 2                     | TCUDS-V Substance Use               | .16***   | .04          | 1.17      | [1.07, 1.27]  | 11.63*** | 450.43          |
| 3                     | SRP-III Factor 1                    | .02      | .34          | 1.02      | [.52, 1.97]   | 35.39*** | 415.04          |
|                       | SRP-III Factor 2                    | 1.80***  | .40          | 6.02      | [2.76, 13.10] |          |                 |
| 4                     | Factor 1 x Factor 2                 | .87      | .52          | 2.38      | [.86, 6.58]   | 2.60     | 412.44          |
| <b>Hypothesis 2.2</b> |                                     |          |              |           |               |          |                 |
| <i>Step</i>           | <i>Variable</i>                     | <i>B</i> | <i>SE(B)</i> | <i>OR</i> | <i>95% CI</i> | $\chi^2$ | <i>-2 Log L</i> |
| 1                     | Heterosexual vs. Other              | -.98***  | .27          | .38       | [.22, .64]    | 33.26*** | 462.05          |
|                       | Apart/House vs. Res Hall            | -.44     | .30          | .64       | [.36, 1.15]   |          |                 |
|                       | Apart/House vs. Home                | -1.16**  | .43          | .32       | [.14, .72]    |          |                 |
|                       | Apart/House vs. Other               | .57      | .82          | 1.77      | [.35, 8.81]   |          |                 |
|                       | Complete Dep vs. Part Dep           | .16      | .27          | 1.18      | [.69, 2.01]   |          |                 |
|                       | Complete Dep vs. Completely Indep   | .97**    | .36          | 2.62      | [1.29, 5.34]  |          |                 |
| 2                     | TCUDS-V Substance Use               | .07      | .05          | 1.07      | [.98, 1.18]   | 47.01*** | 415.04          |
|                       | SRP-III Factor 1                    | .02      | .34          | 1.02      | [.52, 1.97]   |          |                 |
|                       | SRP-III Factor 2                    | 1.80***  | .40          | 6.02      | [2.76, 13.10] |          |                 |
| 3                     | Substance Use x Factor 1            | -.09     | .13          | .92       | [.72, 1.17]   | 4.47     | 410.57          |
|                       | Substance Use x Factor 2            | -.06     | .13          | .94       | [.72, 1.22]   |          |                 |
|                       | Factor 1 x Factor 2                 | .94      | .53          | 2.55      | [.90, 7.23]   |          |                 |
| 4                     | Substance Use x Factor 1 x Factor 2 | .24      | .23          | 1.27      | [.82, 1.99]   | 1.20     | 409.37          |

*Notes.* One dummy variable devised to code for sexual orientation, three dummy variables were devised to code for current living situation (off-campus apartment/house vs. on-campus residence hall, off-campus apartment/house vs. off-campus at home, off-campus apartment/house vs. other), and two dummy variables were devised to code for financial situation (completely financially dependent on others vs. partially dependent on others, completely dependent on others vs. completely independent). \*\*\* $p \leq .001$ , \*\* $p \leq .01$ , \* $p \leq .05$ .

Hypothesis 2.2 aimed to explore whether substance use moderated the relationship between Factor 2 traits and erotic service provision. Results from the logistic regression model are presented in Table 5 (bottom panel). Similar covariate (i.e., sexual orientation, current living

situation, financial status) and Factor 2 main effects emerged as in the above model testing Hypothesis 2.1.

In the model that included the interactions, substance use was not significantly related to provision of services ( $OR = 1.59$ ,  $95\% CI [ .92, 2.72]$ ,  $p = .09$ ), nor did it moderate the association between Factor 1 and provision ( $OR = .92$ ,  $95\% CI [ .72, 1.17]$ ,  $p = .48$ ) and Factor 2 and provision ( $OR = .94$ ,  $95\% CI [ .72, 1.22]$ ,  $p = .64$ ). Results suggest that relationships between psychopathy factors and provision do not depend on level of substance use. Results were the same when analyses were conducted separately for contact and no-contact provision.

### **Erotic Service Consumption**

Hypothesis 2.3 was tested to examine the manner in which substance use and psychopathic traits relate to erotic service consumption (see Table 6 – top panel). There were main effects for age, gender, and sexual orientation. As with provision, substance use was positively associated with consumption of services. In alignment with our hypothesis, Factor 1 ( $b = .41$ ,  $IRR = 1.51$ ,  $95\% CI [ .13, .69]$ ,  $p = .004$ ) and Factor 2 ( $b = .37$ ,  $IRR = 1.45$ ,  $95\% CI [ .04, .69]$ ,  $p = .03$ ) were both positively related to erotic service consumption; however, a significant Factor 1 x Factor 2 interaction emerged ( $b = -.74$ ,  $IRR = .48$ ,  $95\% CI [ -1.22, -.26]$ ,  $p = .003$ ).

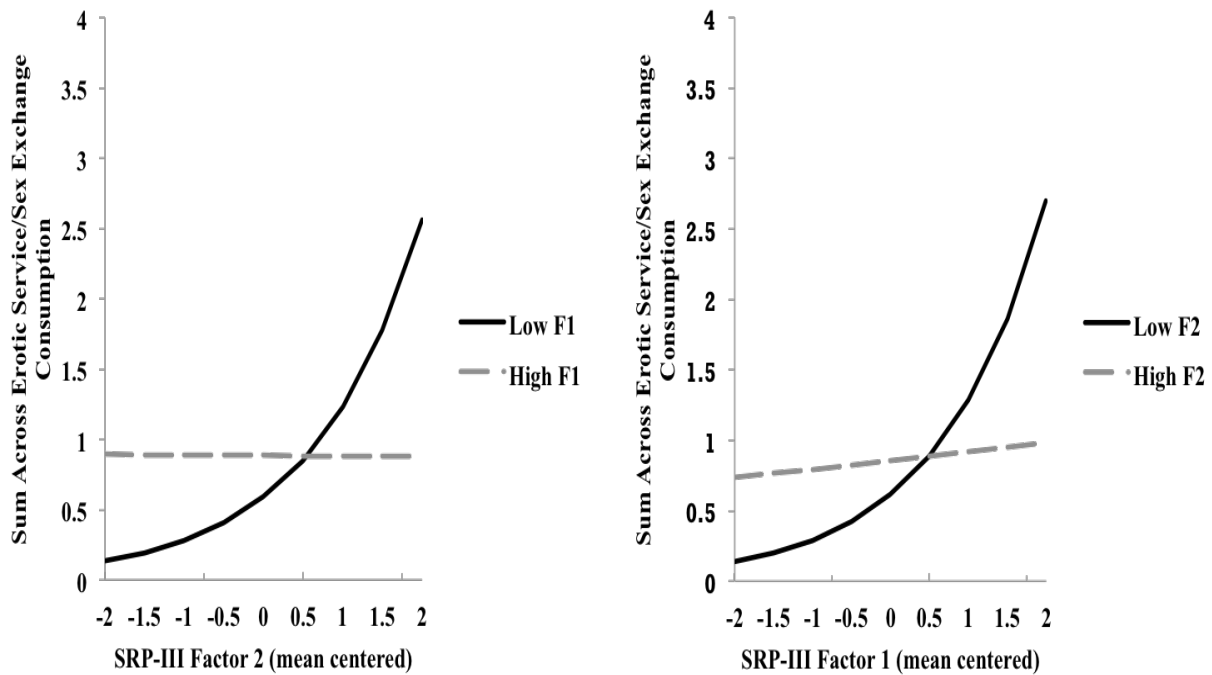
Breaking down the interaction using the simple slopes test (Aiken, West, & Reno, 1991) revealed that Factor 2 traits were significantly positively related to consumption among participants low ( $b = .75$ ,  $IRR = 2.12$ ,  $95\% CI [ .29, 1.21]$ ,  $p = .002$ ), but not high in Factor 1 ( $b = -.01$ ,  $IRR = .99$ ,  $95\% CI [ -.35, .33]$ ,  $p = .97$ ) (see Figure 1). Moreover, Factor 1 traits were significantly positively related to consumption among participants low ( $b = .75$ ,  $IRR = 2.12$ ,  $95\% CI [ .37, 1.13]$ ,  $p < .001$ ), but not high in Factor 2 ( $b = .07$ ,  $IRR = 1.07$ ,  $95\% CI [ -.26, .40]$ ,  $p = .68$ ). Specifically, Factor 2 represented risk for consumption only when Factor 1 was low.

**Table 6.** Poisson Regressions Testing Aim 2 Hypotheses for Consumption of Erotic Services.

| <b>Hypothesis 2.3</b>               |          |           |            |               |          |
|-------------------------------------|----------|-----------|------------|---------------|----------|
| <i>Variable</i>                     | <i>b</i> | <i>SE</i> | <i>IRR</i> | <i>95% CI</i> | $\chi^2$ |
| Age                                 | .17      | .03       | 1.19       | [.10, .24]    | 22.87*** |
| Gender                              | .67      | .12       | 1.95       | [.44, .90]    | 32.16*** |
| Caucasian vs. African American      | -.36     | .19       | .70        | [-.73, .01]   | 3.64     |
| Caucasian vs. Other                 | -.17     | .13       | .84        | [-.44, .09]   | 1.61     |
| Heterosexual vs. Other              | -.54     | .12       | .58        | [-.78, -.31]  | 20.27*** |
| Single vs. Living with Another      | .11      | .13       | 1.12       | [-.14, .37]   | .73      |
| Less than One vs. One Year          | -.15     | .14       | .86        | [-.43, .13]   | 1.05     |
| Less than One vs. Two Years         | -.26     | .16       | .77        | [-.57, .06]   | 2.51     |
| Less than One vs. Three Years       | -.30     | .17       | .74        | [-.62, .03]   | 3.22     |
| Less than One vs. Four Years        | -.31     | .25       | .73        | [-.80, .18]   | 1.51     |
| Apart/House vs. Res Hall            | .03      | .14       | 1.03       | [-.25, .31]   | .04      |
| Apart/House vs. Home                | -.24     | .15       | .79        | [-.53, .05]   | 2.72     |
| Apart/House vs. Other               | .31      | .33       | 1.36       | [-.34, .96]   | .87      |
| Employed vs. Unemployed             | .02      | .11       | 1.02       | [-.20, .24]   | .03      |
| Employed vs. Other                  | .29      | .29       | 1.34       | [-.27, .85]   | 1.05     |
| TCUDS-V Substance Use               | .07      | .02       | 1.08       | [.04, .11]    | 15.16*** |
| SRP-III Factor 1                    | .41      | .14       | 1.51       | [.13, .69]    | 8.21**   |
| SRP-III Factor 2                    | .37      | .17       | 1.45       | [.05, .69]    | 4.86*    |
| Factor 1 x Factor 2                 | -.74     | .25       | .48        | [-1.22, -.26] | 9.00**   |
| <b>Hypothesis 2.4</b>               |          |           |            |               |          |
| <i>Variable</i>                     | <i>b</i> | <i>SE</i> | <i>IRR</i> | <i>95% CI</i> | $\chi^2$ |
| Age                                 | .18      | .04       | 1.20       | [.11, .25]    | 24.55*** |
| Gender                              | .68      | .12       | 1.97       | [.45, .91]    | 32.89*** |
| Caucasian vs. African American      | -.38     | .19       | .68        | [-.74, -.01]  | 4.09*    |
| Caucasian vs. Other                 | -.15     | .14       | .86        | [-.42, .11]   | 1.27     |
| Heterosexual vs. Other              | -.57     | .12       | .56        | [-.81, -.33]  | 21.69*** |
| Single vs. Living with Another      | .10      | .13       | 1.11       | [-.15, .36]   | .63      |
| Less than One vs. One Year          | -.14     | .14       | .87        | [-.43, .14]   | .98      |
| Less than One vs. Two Years         | -.25     | .16       | .78        | [-.57, .07]   | 2.38     |
| Less than One vs. Three Years       | -.31     | .17       | .73        | [-.64, .01]   | 3.52     |
| Less than One vs. Four Years        | -.35     | .25       | .70        | [-.84, .14]   | 1.92     |
| Apart/House vs. Res Hall            | .07      | .14       | 1.07       | [-.21, .35]   | .22      |
| Apart/House vs. Home                | -.22     | .15       | .80        | [-.51, .07]   | 2.18     |
| Apart/House vs. Other               | .17      | .34       | 1.19       | [-.49, .82]   | .24      |
| Employed vs. Unemployed             | .04      | .11       | 1.04       | [-.18, .26]   | .11      |
| Employed vs. Other                  | .32      | .28       | 1.38       | [-.24, .88]   | 1.28     |
| TCUDS-V Substance Use               | .69      | .53       | 1.99       | [.35, 1.73]   | 1.68     |
| SRP-III Factor 1                    | .20      | .22       | 1.22       | [.22, .62]    | .84      |
| SRP-III Factor 2                    | .89      | .25       | 2.44       | [.40, 1.38]   | 12.72*   |
| Substance Use x Factor 1            | -.11     | .20       | .90        | [-.50, .28]   | .29      |
| Substance Use x Factor 2            | -.35     | .25       | .70        | [-.83, .13]   | 1.99     |
| Factor 1 x Factor 2                 | -.89     | .36       | .41        | [-1.60, -.19] | 6.21*    |
| Substance Use x Factor 1 x Factor 2 | .08      | .09       | 1.08       | [-.10, .25]   | .76      |

*Notes.* Four variables were devised for year in school; three for living situation; two for race and employment status; one for sexual orientation and relationship status. \*\*\* $p \leq .001$ , \*\* $p \leq .01$ , \* $p \leq .05$ .

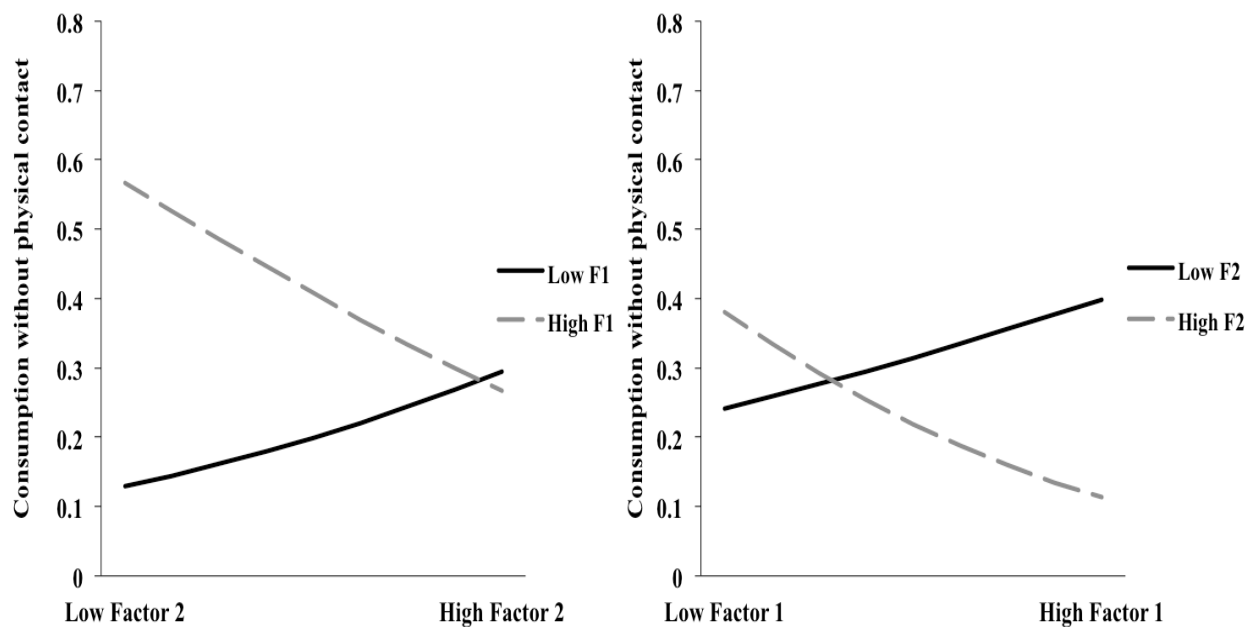




**Figure 1.** Consumption of erotic services and/or sex exchange plotted as a function of Factor 1 and Factor 2 psychopathic traits. Factor 1 x Factor 2 interaction for consumption plotted by Factor 1 (left) and Factor 2 (right).

When these analyses were conducted separately for consumption of contact and no-contact services, results showed that Factor 1 traits ( $OR = 1.88$ ,  $95\% CI [1.15, 3.09]$ ,  $p = .01$ ) were associated only with no-contact consumption. Similarly, the significant Factor 1 x Factor 2 ( $OR = .20$ ,  $95\% CI [.08, .53]$ ,  $p = .001$ ) interaction emerged for no-contact consumption of services (see Figure 2). Neither Factor 1 ( $p = .90$ ) nor Factor 2 ( $p = .56$ ) traits were significantly related to consumption of contact services.

Hypothesis 2.4 was tested to investigate whether substance use acted as a moderator in the association between Factor 2 and erotic service consumption. Results from the regression are presented in Table 6 (bottom panel). As in the above model, covariates (age, gender, race, and sexual orientation) were positively related to consumption, but substance use was not.



**Figure 2.** Consumption of erotic services without physical contact plotted as a function of Factor 1 and Factor 2 psychopathic traits. Factor 1 x Factor 2 interaction for services without physical contact plotted by Factor 1 (left) and Factor 2 (right).

However, substance use did not moderate the associations between Factor 1 ( $b = -.11$ ,  $IRR = .90$ ,  $95\% CI [-.50, .28]$ ,  $p = .59$ ) or Factor 2 ( $b = -.35$ ,  $IRR = .70$ ,  $95\% CI [-.83, .13]$ ,  $p = .16$ ) and consumption of services. In contrast, when conducting analyses separately for contact and no-contact erotic service consumption, results yielded a significant Factor 2 x substance use interaction for consumption of services without contact ( $OR = .75$ ,  $95\% CI [.60, .95]$ ,  $p = .02$ ); however, this interaction was not significant for services with contact ( $p = .10$ ). Simple slopes analyses revealed that Factor 2 traits were significantly positively related to consumption of services without contact among students with low levels of substance use ( $B = .63$ ,  $OR = 1.88$ ,  $p = .04$ ), whereas these traits were negatively (and non-significantly) related among those with high levels of substance use ( $B = -.52$ ,  $OR = .59$ ;  $p = .12$ ).

### Aim 3: Gender Differences

Hypothesis 3.1 sought to test gender differences in relations between psychopathic traits and provision of erotic services.<sup>2</sup> As presented in Table 7 (top panel), similar covariate main effects (i.e., sexual orientation, current living situation, financial status) shown in the above regression models emerged, and both substance use ( $OR = 1.15$ , 95%  $CI [1.06, 1.26]$ ,  $p = .002$ ) and Factor 2 traits ( $OR = 5.91$ , 95%  $CI [2.69, 12.95]$ ,  $p < .001$ ) were again positively related to provision of services. The main effect of gender failed to reach significance ( $OR = .83$ , 95%  $CI [.47, 1.45]$ ,  $p = .50$ ), and inconsistent with our hypothesis, gender did not moderate the relationships between Factor 1 ( $OR = 1.10$ , 95%  $CI [.28, 4.37]$ ,  $p = .89$ ) and Factor 2 ( $OR = .63$ , 95%  $CI [.12, 3.27]$ ,  $p = .58$ ) and provision of services. These results did not change when analyses were conducted separately for contact and no-contact provision ( $p = .19 - .91$ ).

Hypothesis 3.2 aimed to explore whether men and women demonstrated differential relations between psychopathic traits and consumption of erotic services (refer to Table 7 – bottom panel). Age, sexual orientation, substance use, and Factor 1 were again significantly associated with consumption. Gender was positively related to consumption ( $b = .64$ ,  $IRR = 1.90$ , 95%  $CI [.40, .89]$ ,  $p < .001$ ), such that men were roughly 90% more likely to engage in consumption relative to women. However, contrary to our hypothesis, gender failed to moderate the relations between Factor 1 ( $b = -.41$ ,  $IRR = .66$ , 95%  $CI [-1.01, .19]$ ,  $p = .18$ ) and Factor 2 ( $b = .11$ ,  $IRR = 1.12$ , 95%  $CI [-.55, .77]$ ,  $p = .74$ ) and consumption of erotic services. These results did not change when analyses were conducted separately for service provision involving physical contact and no physical contact ( $p = .16 - .86$ ).

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<sup>2</sup> Aim 3 analyses were also run combining pilot and preliminary datasets and results remained the same, suggesting that failure to detect gender differences in the main study is not attributable to low power.

**Table 7.** Regressions Testing Aim 3 Hypotheses for Provision and Consumption of Erotic Services.

| <b>Hypothesis 3.1: Provision of Erotic Services</b>   |                                 |          |              |            |               |          |                 |
|---|---------------------------------|----------|--------------|------------|---------------|----------|-----------------|
| <i>Step</i>   | <i>Variable</i>                 | <i>B</i> | <i>SE(B)</i> | <i>OR</i>  | <i>95% CI</i> | $\chi^2$ | <i>-2 Log L</i> |
| 1   | Heterosexual vs. Other          | -.96***  | .28          | .38        | [.22, .66]    | 43.70*** | 443.96          |
|   | Apart/House vs. Res Hall        | -.33     | .30          | .72        | [.40, 1.30]   |          |                 |
|   | Apart/House vs. Home            | -1.05*   | .43          | .35        | [.15, .81]    |          |                 |
|   | Apart/House vs. Other           | .41      | .83          | 1.50       | [.30, 7.56]   |          |                 |
|   | Complete Dep vs. Part Dep       | .07      | .28          | 1.07       | [.62, 1.84]   |          |                 |
|   | Complete Dep vs. Complete Indep | .95**    | .37          | 2.58       | [1.26, 5.30]  |          |                 |
|   | TCUDS-V Substance Use           | .14**    | .05          | 1.15       | [1.06, 1.26]  |          |                 |
| 2   | Gender                          | -.19     | .29          | .83        | [.47, 1.45]   | 33.59*** | 410.37          |
|   | SRP-III Factor 1                | .05      | .35          | 1.05       | [.53, 2.09]   |          |                 |
|   | SRP-III Factor 2                | 1.78***  | .40          | 5.91       | [2.69, 12.95] |          |                 |
| 3   | Gender x Factor 1               | .10      | .70          | 1.10       | [.28, 4.37]   | 2.85     | 407.52          |
|   | Gender x Factor 2               | -.46     | .84          | .63        | [.12, 3.27]   |          |                 |
|   | Factor 1 x Factor 2             | 1.00     | .60          | 2.73       | [.84, 8.80]   |          |                 |
| 4   | Gender x Factor 1 x Factor 2    | -.77     | 1.23         | .46        | [.04, 5.15]   | .40      | 407.11          |
| <b>Hypothesis 3.2: Consumption of Erotic Services</b> |                                 |          |              |            |               |          |                 |
|   | <i>Variable</i>                 | <i>b</i> | <i>SE</i>    | <i>IRR</i> | <i>95% CI</i> | $\chi^2$ |                 |
|   | Age                             | .17      | .04          | 1.19       | [.10, .24]    | 22.10*** |                 |
|   | Caucasian vs. African American  | -.37     | .19          | .69        | [-.74, -.003] | 3.90*    |                 |
|   | Caucasian vs. Other             | -.17     | .14          | .84        | [-.43, .09]   | 1.59     |                 |
|   | Heterosexual vs. Other          | -.53     | .12          | .59        | [-.77, -.29]  | 18.47*** |                 |
|   | Single vs. Living with Another  | .12      | .13          | 1.13       | [-.14, .37]   | .79      |                 |
|   | Less than One vs. One Year      | -.14     | .14          | .87        | [-.43, .14]   | .99      |                 |
|   | Less than One vs. Two Years     | -.25     | .16          | .78        | [-.57, .07]   | 2.38     |                 |
|   | Less than One vs. Three Years   | -.28     | .17          | .76        | [-.61, .05]   | 2.81     |                 |
|   | Less than One vs. Four Years    | -.28     | .25          | .76        | [-.78, .21]   | 1.28     |                 |
|   | Apart/House vs. Res Hall        | .02      | .14          | 1.02       | [-.25, .30]   | .03      |                 |
|   | Apart/House vs. Home            | -.24     | .15          | .79        | [-.53, .05]   | 2.57     |                 |
|   | Apart/House vs. Other           | .33      | .33          | 1.39       | [-.32, .98]   | .99      |                 |
|   | Employed vs. Unemployed         | .03      | .11          | 1.03       | [-.19, .26]   | .09      |                 |
|   | Employed vs. Other              | .32      | .29          | 1.38       | [-.25, .88]   | 1.21     |                 |
|   | TCUDS-V Substance Use           | .08      | .02          | 1.08       | [.04, .11]    | 15.10*** |                 |
|   | Gender                          | .64      | .13          | 1.90       | [.40, .89]    | 26.10*** |                 |
|   | SRP-III Factor 1                | .66      | .25          | 1.93       | [.17, 1.15]   | 7.05**   |                 |
|   | SRP-III Factor 2                | .23      | .28          | 1.26       | [-.32, .78]   | .66      |                 |
|   | Gender x Factor 1               | -.41     | .30          | .66        | [-1.01, .19]  | 1.80     |                 |
|   | Gender x Factor 2               | .11      | .34          | 1.12       | [-.55, .77]   | .11      |                 |
|   | Factor 1 x Factor 2             | -.98     | .50          | .38        | [-1.96, .002] | 3.83*    |                 |
|   | Gender x Factor 1 x Factor 2    | .46      | .60          | 1.58       | [-.70, 1.63]  | .60      |                 |

*Notes.* All reported values for Hypothesis 3.1 are those from step four in the regression. \*\*\* $p \leq .001$ , \*\* $p \leq .01$ , \* $p \leq .05$ .

## DISCUSSION

Results in the present study suggest that men and women college students in the southeastern United States endorse engagement across both provision and consumption of erotic services and/or sex exchange, with higher prevalence rates for consumption relative to provision. Interpersonal-affective (Factor 1) and impulsive-antisocial (Factor 2) psychopathic traits yielded differential relationships with provision and consumption of erotic services among students. Specifically, as predicted, Factor 2 traits were positively related to provision of services and Factor 1 traits were positively related to consumption. Factor 2 traits were also related to consumption of services, but only among students who were low in Factor 1 traits. Whereas substance use was independently related to provision and consumption of erotic services, relationships between psychopathic traits and provision and consumption did not appear to depend on frequency of substance use. Lastly, although gender demonstrated a main effect for consumption, with men endorsing higher rates of consumption relative to women, gender did not moderate relationships between psychopathic traits and provision or consumption of erotic services.

### **Aim 1: Student Erotic Service Involvement**

The current work was the first to assess prevalence and type of erotic service involvement endorsed by men and women college students in the United States. Consistent with previous international reports among college students (Döring et al., 2015; Roberts et al., 2013; Roberts et al., 2010), these findings provide evidence that national college students are participating to

some extent in the sex industry. In alignment with our prediction, students endorsed higher rates of consumption relative to provision of erotic services and/or sex exchange, with 32.0% and 11.5% of students endorsing consumption and provision, respectively.

This pattern may reflect more social acceptance of consumption of erotic services and/or sex exchange, whereas students may be less likely to endorse provision as a result of societal stigma associated with this behavior (e.g., Bradley, 2007; Griffith, Mitchell, Hart, Adams, & Gu, 2013). Relative to rates reported in prior European studies, this study found higher rates of provision (~1.4 - 7%; Betzer et al., 2015; Pedersen & Hegna, 2003; Roberts et al., 2013; Svedin & Priebe, 2007) and lower rates of consumption (~52%; Roberts et al., 2013) and, while this may reflect differential rates across countries, methodological differences may also be accounting for distinct rates. For instance, consumption in the current study was restricted to only services in which *payment* was given, unlike in Roberts et al. (2013); thus, it is possible that prevalence may have been higher had we also included consumption of free services (e.g., online pornography). In terms of provision, considering that this study assessed provision across a broader range of erotic services relative to prior studies, including services typically not involving physical contact (e.g., working in bar where dressing sexy is required), it is not surprising that our rates were higher than those previously reported.

Results for the two categories of provision were surprising, such that students in the total sample (and in men and women separately) endorsed similar rates of *provision* in services not involving contact ( $n = 34$ ; 4.1%) and those involving contact ( $n = 31$ ; 3.8%), and we expected to see higher prevalence in the former ( $n = 26$ ; 3.2% endorsed both). However, taking into account the structure of the EAQ measure and manner in which provision in these services was assessed (i.e., all services grouped together in one section), it is possible that students under-reported their

involvement in services without physical contact. That is, they may have failed to endorse those services since they were listed in the same section as erotic dancing, escorting, and street-level work, services that they may have been reluctant to identify as similar to what they were engaging in (e.g., wet t-shirt contest).

In terms of consumption, students endorsed higher rates of *consumption* in services without physical contact (22.9%) compared to those with physical contact (1.7%). Specifically, the most commonly consumed services comprised several that tend to be more easily accessible (e.g., available online) and included pornography ( $n = 194$ ; 23.7%), bars/clubs where employees wear sexy clothing ( $n = 131$ ; 16.0%), erotic nude modeling magazines/websites ( $n = 88$ ; 10.7%), and phone sex operator and/or webcam performance ( $n = 24$ ; 2.9%). Therefore, whereas research on consumption of sex work has traditionally focused primarily on services involving physical contact (i.e., prostitution), this work suggests that consumption of services without physical contact (and pornography specifically) are more common, at least among students. Therefore, these findings may lend some support for a more recent view, as noted by Jeffreys (2009), “The pornography industry is the launching pad of the contemporary normalization of the sex industry” (p. 62).

Of interest, there was also endorsement overlap in services with and without physical contact across provision ( $r = .53$ ) and consumption ( $r = .44$ ), such that 22.5% ( $n = 59$ ) and 27.7% ( $n = 26$ ) of students who endorsed consumption and provision, respectively, endorsed engagement in both types of services. While speculative, it is possible that engagement in services without physical contact acts as a precursor to engagement in services with physical contact. For example, an individual may expand to provision in services with physical contact in an effort to earn more money or following heightened comfort within erotic contexts. It is also

possible that through consumption of services without contact, commercial sexual exploitation of women may become more normalized which in turn, may contribute to consumption of services with physical contact (Jeffreys, 2009).

In terms of gender differences in provision, we had predicted that women would show higher rates of provision relative to men; however, this gender difference was not found. Nonetheless, our results were in accordance with a few prior European reports in students finding similar prevalence rates across gender (Betzer et al., 2015; Pedersen & Hegna, 2003; Roberts et al., 2013; Svedin & Priebe, 2007). In contrast, our hypothesis for consumption was supported. In particular, men demonstrated higher rates of consumption relative to women. The former was both expected and in accordance with prior work, showing that the majority of sex work consumers are men (e.g., Coy, Wakeling, & Garner, 2011; Jeffreys, 2009; Roberts et al., 2013; Ward et al., 2005), although this had never been directly examined in students. Reasons for this may be at least partially explained by gendered norms promoting sexual promiscuity more so in men (Monto, 2004), along with the commercial sexualization of women (APA, 2007; Attwood, 2014). That is, research has shown that sexualized entertainment most often targets men, with a focus on the objectification of women and their bodies (e.g., lingerie advertisements) (e.g., Amy-Chinn, 2006; Hatton & Trautner, 2011). Along these lines, it may be that men are indeed more likely to consume erotic services; however, it may also be the case that women (at least in this study) are less likely to endorse consumption, such that it tends to be less acceptable for women to do so.

## **Aim 2: Substance Use, Psychopathic Traits, and Erotic Service Involvement**

This study was the first to explore the extent to which substance use and psychopathic traits show unique and/or interactive relations with provision and consumption of erotic services



among college students. Results for Factor 1 traits (i.e., interpersonal-affective) and provision of sexual services were not according to our hypothesis, as Factor 1 did not exhibit the predicted inverse relationship with provision of erotic services of any kind. In contrast to the current findings, Edwards & Verona (2016) found a negative association between Factor 1 traits and sex exchange among substance-using women, who were most likely involved in *provision of sex exchange*. It may be that this finding in substance-using women simply does not extend to college students; however, it is also possible that this prior finding is specific to *sex exchange* and therefore, may not have been present in this work given that provision was examined across various types of erotic services, many of which did not involve sex exchange per se.

Factor 2 findings, however, were consistent with previous findings in women offenders (Edwards & Verona, 2016), in that elevated levels of Factor 2 psychopathic traits were related to provision of erotic services, across services with and without contact. This suggests that impulsive-antisocial traits (e.g., impulsivity, irresponsibility, sensation-seeking) may be valuable in identifying students more likely to provide various erotic services. For instance, students prone to impulsivity and/or irresponsibility may be more apt to experience financial strain due to difficulties maintaining stable employment and thus, may find themselves dependent on others for financial assistance. As such, they may be motivated to provide erotic services at least in part for financial support (e.g., educational expenses). In fact, students in this study who were completely financially dependent on others were indeed more likely to have provided services ( $OR = 2.62, p < .01$ ). Moreover, many erotic services are arguably characterized as adventuresome and thrilling and thus, students high in proneness to boredom (i.e., Factor 2) may be particularly drawn to the exciting nature of these services (e.g., erotic dancing, BDSM/Dominatrix, escorting) and may be more willing than others to put themselves in

potentially risky sexual situations to earn money. Overall, the relationship between Factor 2 and provision of erotic services was in alignment with our hypothesis, suggesting that this prior finding in offenders extends to college students. Further, it supports the notion that provision of sex work may generally reflect another manifestation of impulsive and antisocial traits.

Importantly, substance use did not appear to moderate the relationship between Factor 1 or Factor 2 and provision. In alignment with findings from Edwards & Verona (2016), Factor 2 (but not Factor 1) traits were associated with provision above and beyond substance use and thus, appear to contribute unique variance to provision of services among students. Considering this, results seem to further point to *unique* features of Factor 2 (opposed to shared vulnerabilities with substance use) as those that may be particularly important in understanding provision of sex work (Edwards & Verona, 2016). Pulling from the externalizing spectrum model proposed by Krueger et al. (2007), whereas irresponsibility and problematic impulsivity were found to be meaningful measures of externalizing, they did not adequately capture variance associated with substance use. Accordingly, and in further support of our above arguments, these particular traits (i.e., irresponsibility, problematic impulsivity) may be more exclusive to Factor 2 (versus substance use) and contribute to the provision of sex work.

In alignment with Edwards & Verona (2016), an interesting interaction between Factor 1 and Factor 2 emerged for consumption. Specifically, Factor 1 traits were related to consumption of erotic services, particularly those typically not involving physical contact, but only among students who were also low in Factor 2 traits. Moreover, Factor 2 traits were also related to consumption of services not involving contact, but only among students who were low in Factor 1 traits. Taken together, these results suggest that Factor 1 and Factor 2 traits may each independently promote the use of sexual services, but only among students low in traits

comprising the other psychopathy dimension. For instance, a combination of high Factor 1 and low Factor 2 may contribute to students carefully seeking out ways to satisfy sexual needs without emotional connection, including consumption of services that tend to be impersonal and lack emotional attachment. In fact, this notion is in alignment with findings from Xantidis and McCabe (2000), in which male consumers were found to exhibit elevated levels of interpersonal discomfort within dating and sexual contexts. Thus, because these students may have difficulties forming relationships due to diminished emotional attachment, they may intentionally choose to consume erotic services, particularly those without physical contact (e.g., online services) in an effort to fulfill a sexual desire. On the other hand, the sensation-seeking and impulsive tendencies associated with high Factor 2 may contribute to individuals seeking out erotic services in order to fulfill a sexual desire, especially if they do not have the social charm and emotional ease (i.e., Factor 1 traits) to obtain sexual partners without paying for sex. Furthermore, Factor 2 traits of impulsivity and lack of premeditation may be associated with seeking out services that are relatively easy to access and provide immediate gratification (e.g., *without* contact, e.g., online pornography, nude modeling websites). In sum, although elevated levels of Factor 1 and Factor 2 traits each in isolation relate to increased engagement in consumption, they do not appear to increase further consumption, and may decrease it, among individuals also high in Factor 2 and Factor 1 traits, respectively. Thus, Factor 1 and Factor 2 do not seem to produce an additive effect on consumption, and persons high on both factors do not seem to have an elevated tendency to seek paid sexual services, as one would expect. Instead, elevated traits within each psychopathy dimension, in the absence of the elevated traits in the other, may increase reliance on these services for sexual gratification.

Finally, post-hoc analyses revealed an interaction between substance use and Factor 2 psychopathic traits (albeit a small effect), suggesting that substance use modulated the relationship between impulsive-antisocial psychopathic traits and no-contact consumption. Specifically, Factor 2 traits played less of a role in the consumption of erotic services without contact among students with more frequent substance use than those with less frequent use. Results suggest that more frequent substance use alone may be a salient motivator for distinct types of consumption among college students. For instance, such that research has independently linked substance use to an increase in sexual desire (e.g., elevated sex drive, increased likelihood of casual sex; Cooper, 2002; Rawson, Washton, Domier, & Reiber, 2002), it is possible that regardless of Factor 2 trait level, substance use may heighten students' desire for sex and in turn, increase the likelihood of consumption engagement in order to satisfy sexual needs. Equally plausible, given that no-contact erotic services often occur in environments where substances (and alcohol in particular) are readily accessible (e.g., bars/clubs, etc.), students may be more apt to engage in substance use when also consuming these services. That is, despite their Factor 2 level, students may display more frequent use simply due to there being a heightened presence of substances in these erotic contexts. On the other hand, findings suggest that Factor 2 traits are more apparent among students with less frequent substance use, such that impulsive-antisocial psychopathic traits may promote no-contact consumption among these students, in particular. Regarding the externalizing spectrum, it has been suggested that while some traits (e.g., excitement-seeking) may adequately measure both substance use and Factor 2, other traits (e.g., problematic impulsivity, irresponsibility) may be more exclusive to Factor 2 (versus substance use) (Krueger et al., 2007). Considering this, traits such as impulsivity and irresponsibility may be particularly important in understanding consumption behavior among students low in

substance use. For example, it may be that students with less frequent use are less likely to consume erotic services for reasons of excitement and thrill, and more likely to do so out of impulse in an effort to seek immediate gratification. Moreover, these students may be particularly attracted to erotic services *without* contact considering that many of these services are easily available online or by phone (e.g., pornography, phone sex and/or webcam performance) and therefore, allow for instant sexual gratification with minimal effort.

### **Aim 3: Gender Differences**

Although there were gender differences in consumption of erotic services, in that men were more likely than women to have consumed services, gender did not moderate the relationship between psychopathic traits and either provision or consumption of services. These results were in contrast to our predictions. It may be that relations between psychopathic traits and engagement in erotic services in college students are not dependent on gender and instead, may be more attributable to the role of the individual within erotic contexts (provider vs. consumer). Specifically, our results indicate that men and women do not necessarily take on gender-conforming roles within these contexts, at least with respect to provision. That is, both men and women appeared to engage in similar rates of provision and, contrary to predictions, similar rates were endorsed across gender. Along these lines, this finding is particularly pertinent in a college sample given their frequent use of technology, as traditional gender roles (e.g., mostly women providers) may become more blurred when expanding beyond traditional services (e.g., prostitution) to a heterogeneous online world of sex work. Considering this, our findings suggest that provision of erotic services may represent one manifestation of Factor 2 traits across gender and not only in women, whereas consumption of erotic services may represent one manifestation of Factor 1 traits across gender.

## **Limitations, Strengths, and Future Directions**

Findings in the current study should be considered in light of a few limitations. First, the online survey was comprised solely of self-report measures that were susceptible to social desirability (Arnold & Feldman, 1981; Podsakoff & Organ, 1986). In particular, the survey was comprised of measures assessing sensitive information and thus, it is possible that students may have under-reported in their responses, considering that some of the assessed behaviors may be viewed as socially unacceptable (e.g., erotic services, illegal drug use). Despite this, current prevalence rates for erotic services were higher than those found in several prior international studies (Betzer et al., 2015; Roberts et al., 2013). Nonetheless, it is possible that some relations among erotic service involvement, psychopathic traits, and substance use may not have been detected given the focus on low base-rate behaviors. In addition, this study is limited in its ability to make claims about erotic service involvement taking place in college, as the EAQ assesses lifetime prevalence of these behaviors. With that being said, the majority of students reported being in their early twenties ( $M = 19.95$ ), making it more likely that behaviors occurred at some point in college (especially since many services are illegal < 18 years). Finally, this study focused on individual-level features (e.g., pathological personality traits) in relation to erotic service involvement and did not investigate these in conjunction with system-level factors (e.g., poverty, criminalization, gender roles), which likely also play an important role (e.g., Hankel, Heil, Dewey, & Martinez, 2016; McCracken, 2013). Therefore, it would be beneficial for future work to examine the extent to which individual-level and system-level features show unique and interactive relations with respect to engagement in erotic services.

In spite of these limitations, there are also a number of strengths. The present work was the first to assess prevalence and type of erotic service involvement among college students

living in the southeast United States. In doing so, this study included a large and diverse sample of undergraduate men and women representative of the USF undergraduate student body, which allowed for an examination of erotic service pervasiveness among a more socially-advantaged group (since most research has focused on substance-using/offender populations). However, considering that this is the first national study examining these behaviors in a college sample, it is important that findings are replicated in other national college samples in order to further understand student prevalence across varying geographic locations. Lastly, this was the first investigation on the extent to which individual-level features (i.e., psychopathic traits) contribute to erotic service involvement among college students, both independently and in conjunction with substance use and in doing so, may aid in identifying students who are at increased likelihood for providing and consuming erotic services.

This study provides initial support for college student involvement in various erotic services in the United States. Specifically, men and women endorsed engagement in provision at about equal rates, and men were more likely to have consumed services. Factor 2 traits (i.e., impulsive-antisocial) were particularly important for provision of erotic services across gender, suggesting that students may manifest impulsive/reckless features through provision within erotic contexts. On the other hand, Factor 1 (i.e., interpersonal-affective) and Factor 2 traits were both related to consumption of services across gender, but only in the absence of elevated traits within the other psychopathy dimension, suggesting that Factor 1 and Factor 2 not appear to produce an additive effect on consumption. Therefore, this study suggested that, contrary to prior work (e.g., Edwards & Verona, 2016), men and women may not exhibit differences in the manifestation of psychopathic traits within intimate contexts, at least with respect to sex work. However, considering that few studies have examined gender differences in psychopathy

correlates of sex work, further work in this domain would be beneficial. Specifically, future studies should not only attempt to replicate current findings in student samples, but should also expand to investigate psychopathy correlates of varying sex work behaviors (opposed to just prostitution and/or sex exchange) among more externalizing-prone samples (e.g., substance-using, offenders). In conclusion, findings in this work suggest that college students are involved in the sex industry to a certain degree, and point to potential individual-level personality vulnerabilities that may help to identify students who are more likely to become involved in potentially risky behavior within erotic contexts.



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**APPENDIX A:**  
**DEMOGRAPHIC INFORMATION**

1. What is your current age (in years)? \_\_\_\_\_
2. What is your gender identity?
  - a. Female
  - b. Male
  - c. Transgender Female
  - d. Transgender Male
  - e. Genderqueer / Non-Binary
  - f. Other \_\_\_\_\_
3. What is your ethnicity?
  - a. Hispanic or Latino/a
  - b. Non-Hispanic or Non-Latino/a
4. How would you describe your race? (*Select all that apply*)
  - a. American Indian or Alaskan Native
  - b. Asian
  - c. Black or African American
  - d. Native Hawaiian or Pacific Islander
  - e. White
  - f. Other (please specify) \_\_\_\_\_
5. What is your sexual orientation?
  - a. Heterosexual
  - b. Homosexual
  - c. Bisexual
  - d. Asexual
  - e. Unsure
  - f. Other (please specify) \_\_\_\_\_
  - g. Prefer not to answer
6. What best describes your current role at USF?
  - a. Undergraduate student
  - b. Graduate student
  - c. Other

7. Which of the following best describes your current academic level?
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. First year transfer student
  
8. What is your current living situation?
  - a. Off-campus apartment/house
  - b. Off-campus fraternity or sorority house
  - c. Off-campus, at home with family
  - d. On-campus residence hall
  - e. On-campus fraternity or sorority house
  - f. Other (please specify) \_\_\_\_\_
  
9. What is your current employment situation?
  - a. Student, full-time
  - b. Work study
  - c. Employed, part-time
  - d. Employed, full-time
  - e. Retired
  - f. Other (please specify) \_\_\_\_\_
  
10. What is your marital status?
  - a. Single
  - b. Living with romantic partner
  - c. Married or domestic partnership
  - d. Divorced
  - e. Separated
  - f. Widowed
  
11. Which of below options most accurately reflects your current income source?
  - a. Completely independent
  - b. Completely dependent on assistance from family and/or friends
  - c. Completely dependent on financial assistance
  - d. Partially dependent on assistance from family and/or friends
  - e. Partially dependent on financial assistance
  - f. Other (please specify) \_\_\_\_\_
  
12. How well do you speak English?
  - a. Very well
  - b. Well
  - c. Average
  - d. Poorly
  - e. Very poorly



**APPENDIX B:**

**TEXAS CHRISTIAN UNIVERSITY DRUG SCREEN - V**

1. How often did you use each type of drug during the last 12 months?

|  | <i>Never<br/>(0)</i> | <i>Only a few times<br/>(1)</i> | <i>1-3 times<br/>per month<br/>(2)</i> | <i>1-5 times<br/>per week<br/>(3)</i> | <i>Daily<br/>(4)</i> |
|--|----------------------|---------------------------------|--|---------------------------------------|----------------------|
| a. Alcohol   |                      |                                 |  |                                       |                      |
| b. Cannaboids – Marijuana (weed)                       |                      |                                 |  |                                       |                      |
| c. Cannaboids – Hashish (hash)                         |                      |                                 |  |                                       |                      |
| d. Synthetic Marijuana (K2/Spice)                      |                      |                                 |  |                                       |                      |
| e. Opioids – Heroin (smack)                            |                      |                                 |  |                                       |                      |
| f. Opioids – Opium (tar)                               |                      |                                 |  |                                       |                      |
| g. Stimulants – Powder Cocaine (coke)                  |                      |                                 |  |                                       |                      |
| h. Stimulants – Crack Cocaine (rock)                   |                      |                                 |  |                                       |                      |
| i. Stimulants – Amphetamines (speed)                   |                      |                                 |  |                                       |                      |
| j. Stimulants – Methamphetamine (meth)                 |                      |                                 |  |                                       |                      |
| k. Bath Salts (Synthetic Cathinones)                   |                      |                                 |  |                                       |                      |
| l. Club Drugs – MDMA/GHB/Rohypnol<br>(Ecstasy)         |                      |                                 |  |                                       |                      |
| m. Dissociative Drugs – Ketamine/PCP<br>(Special K)    |                      |                                 |  |                                       |                      |
| n. Hallucinogens – LSD/Mushrooms (acid)                |                      |                                 |  |                                       |                      |
| o. Inhalants – Solvents (paint thinner)                |                      |                                 |  |                                       |                      |
| p. Prescription Medications – Depressants              |                      |                                 |  |                                       |                      |
| q. Prescription Medications – Stimulants               |                      |                                 |  |                                       |                      |
| r. Prescription Medications – Opioid Pain<br>Relievers |                      |                                 |  |                                       |                      |
| s. Other (specify) _____                               |                      |                                 |  |                                       |                      |

2. Which drug caused the most serious problem during the last 12 months? [CHOOSE ONE]

- |   |   |
|---|---|
| <input type="checkbox"/> None                               | <input type="checkbox"/> Stimulants – Methamphetamine (meth)              |
| <input type="checkbox"/> Alcohol                            | <input type="checkbox"/> Bath Salts (Synthetic Cathinones)                |
| <input type="checkbox"/> Cannaboids – Marijuana (weed)      | <input type="checkbox"/> Club Drugs – MDMA/GHB/Rohypnol (Ecstasy)         |
| <input type="checkbox"/> Cannaboids – Hashish (hash)        | <input type="checkbox"/> Dissociative Drugs – Ketamine/PCP (Special K)    |
| <input type="checkbox"/> Synthetic Marijuana (K2/Spice)     | <input type="checkbox"/> Hallucinogens – LSD/Mushrooms (acid)             |
| <input type="checkbox"/> Opioids – Heroin (smack)           | <input type="checkbox"/> Inhalants – Solvents (paint thinner)             |
| <input type="checkbox"/> Opioids – Opium (tar)              | <input type="checkbox"/> Prescription Medications – Depressants           |
| <input type="checkbox"/> Stimulants – Powder Cocaine (coke) | <input type="checkbox"/> Prescription Medications – Stimulants            |
| <input type="checkbox"/> Stimulants – Crack Cocaine (rock)  | <input type="checkbox"/> Prescription Medications – Opioid Pain Relievers |
| <input type="checkbox"/> Stimulants – Amphetamines (speed)  |   |

During the last 12 months -

|   | No | Yes |
|---|----|-----|
| 3. Did you use larger amounts of drugs or use them for a longer time than you planned or intended?                      | 0  | 1   |
| 4. Did you try to control or cut down on your drug use but were unable to do it?  | 0  | 1   |
| 5. Did you spend a lot of time getting drugs, using them, or recovering from their use?                                 | 0  | 1   |
| 6. Did you have a strong desire or urge to use drugs?   | 0  | 1   |
| 7. Did you get so high or sick from using drugs that it kept you from working, going to school, or caring for children? | 0  | 1   |
| 8. Did you continue using drugs even when it led to social or interpersonal problems?                                   | 0  | 1   |
| 9. Did you spend less time at work, school, or with friends because of your drug use?                                   | 0  | 1   |
| 10. Did you use drugs that put you or others in physical danger?  | 0  | 1   |
| 11. Did you continue using drugs even when it causing you physical or psychological problems?                           | 0  | 1   |
| 12a. Did you need to increase the amount of a drug you were taking so you could get the same effects as before?         | 0  | 1   |
| 12b. Did using the same amount of a drug lead to it having less of an   | 0  | 1   |

effect as it did before?

13a. Did you get sick or have withdrawal symptoms when you quit or missed taking a drug? 0 1

13b. Did you ever keep taking a drug to relieve or avoid getting sick or having withdrawal symptoms? 0 1

14. How many times before now have you ever been in a drug treatment program?  
[Do not include AA/NA/CA meetings]

- Never
- 1 time
- 2 times
- 3 times
- 4 or more times

15. How serious do you think your drug problems are?

- Not at all
- Slightly
- Moderately
- Considerably
- Extremely

16. During the last 12 months, how often did you inject drugs with a needle?

- Never
- Only a few times
- 1-3 times/month
- 1-5 times/week
- Daily

17. How important it is for you to get drug treatment now?

- Not at all
- Slightly
- Moderately
- Considerably
- Extremely

## APPENDIX C:

### SELF-REPORT PSYCHOPATHY-III (SRP-III)

Please rate the degree to which you agree with the following statements about you. You can be honest because your name will be detached from the answers as soon as they are submitted.

| 1                    | 2        | 3       | 4     | 5                 |
|----------------------|----------|---------|-------|-------------------|
| Disagree<br>Strongly | Disagree | Neutral | Agree | Agree<br>Strongly |

1. I'm a rebellious person.
2. I'm more tough-minded than other people.
3. I think I could "beat" a lie detector.
4. I have taken illegal drugs (e.g., marijuana, ecstasy).
5. I have never been involved in delinquent gang activity.
6. I have never stolen a truck, car or motorcycle.
7. Most people are wimps.
8. I purposely flatter people to get them on my side.
9. I've often done something dangerous just for the thrill of it.
10. I have tricked someone into giving me money.
11. It tortures me to see an injured animal.
12. I have assaulted a law enforcement official or social worker.
13. I have pretended to be someone else in order to get something.
14. I always plan out my weekly activities.
15. I like to see fist-fights.
16. I'm not tricky or sly.
17. I'd be good at a dangerous job because I make fast decisions.
18. I have never tried to force someone to have sex.
19. My friends would say that I am a warm person.
20. I would get a kick out of 'scamming' someone.

21. I have never attacked someone with the idea of injuring them.
22. I never miss appointments.
23. I avoid horror movies.
24. I trust other people to be honest.
25. I hate high speed driving.
26. I feel so sorry when I see a homeless person.
27. It's fun to see how far you can push people before they get upset.
28. I enjoy doing wild things.
29. I have broken into a building or vehicle in order to steal something or vandalize.
30. I don't bother to keep in touch with my family any more.
31. I find it difficult to manipulate people.
32. I rarely follow the rules.
33. I never cry at movies.
34. I have never been arrested.
35. You should take advantage of other people before they do it to you.
36. I don't enjoy gambling for real money.
37. People sometimes say that I'm cold-hearted.
38. People can usually tell if I am lying.
39. I like to have sex with people I barely know.
40. I love violent sports and movies.
41. Sometimes you have to pretend you like people to get something out of them.
42. I am an impulsive person.
43. I have taken hard drugs (e.g., heroin, cocaine).
44. I'm a soft-hearted person.
45. I can talk people into anything.
46. I never shoplifted from a store.
47. I don't enjoy taking risks.
48. People are too sensitive when I tell them the truth about themselves.
49. I was convicted of a serious crime.
50. Most people tell lies everyday.
51. I keep getting in trouble for the same things over and over.

52. Every now and then I carry a weapon (knife or gun) for protection.
53. People cry way too much at funerals.
54. You can get what you want by telling people what they want to hear.
55. I easily get bored.
56. I never feel guilty over hurting others.
57. I have threatened people into giving me money, clothes, or makeup.
58. A lot of people are “suckers” and can easily be fooled.
59. I admit that I often “mouth off” without thinking.
60. I sometimes dump friends that I don’t need any more.
61. I would never step on others to get what I want.
62. I have close friends who served time in prison.
63. I purposely tried to hit someone with the vehicle I was driving.
64. I have violated my parole from prison.

## APPENDIX D:

### EROTIC ACTIVITY QUESTIONNAIRE (EAQ)

*These questions refer to how often you have had sexually related activities and the number of people with whom you have had sex.*

1. In your **lifetime**, with how many different people have you had sex with (including vaginal, anal, and/or oral sex)?

|                 |                  |
|-----------------|------------------|
| 0 = None        | 4 = 11-20 people |
| 1 = 1 person    | 5 = 21-40 people |
| 2 = 2-5 people  | 6 = 41-60 people |
| 3 = 6-10 people | 7 = 61+ people   |

*\*Question 1a will only populate if question #1 is endorsed\**

- 1a. Of these partners you have had sex with in your **lifetime**, how many were **in the last year**?

|                 |                  |
|-----------------|------------------|
| 0 = None        | 4 = 11-20 people |
| 1 = 1 person    | 5 = 21-40 people |
| 2 = 2-5 people  | 6 = 41-60 people |
| 3 = 6-10 people | 7 = 61+ people   |

### PROVIDER

*In this section, you will be asked if you have been given something (e.g., money, drugs, etc.) for erotic activity. This is only if you have been given something (e.g., money, drugs, gifts, etc.) for providing these services.*

2. In your **lifetime**, have **you ever been given** something (e.g., money / salary, drugs and/or alcohol, food, shelter, gifts, job opportunity / promotion, etc.) for providing these services (not including those in the context of a romantic relationship)? Only say yes if you received something for doing the activity.

0 = No  
1 = Yes

- a. Bar / casino worker or beer tab attendant (offering alcohol beverages to customers) where dressing sexy is required (e.g., Hooters)

- b. Posting nude / erotic pictures or sex tapes online or by phone (e.g., Facebook, Snapchat, Tinder) or “sexting” (not including in the context of a romantic relationship)
- c. Erotic nude modeling (e.g., playboy, playgirl, hustler, vixen websites)
- d. Wet t-shirt contest
- e. Girls Gone Wild / Guys Gone Wild
- f. Burlesque performer
- g. Erotic dancer (i.e., stripping, pole / lap / table / topless dancing) and/or nude peep show performer
- h. Sensual / erotic massage provider (i.e., massage parlor or happy endings)
- i. Phone sex operator and/or webcam performer
- j. Pornography or adult film performer (e.g., online, DVD)
- k. BDSM / Dominatrix (not including in the context of a romantic relationship)
- l. Short-term or long-term personal escort (i.e., sugar baby)
- m. Brothel worker
- n. Street-based sex worker or prostitute
- o. Other, please specify: \_\_\_\_\_

*\*Questions 2a – 2e will only populate below each activity that is endorsed\**

2a. What have you been given for your involvement in [insert endorsed item 2 here]? Please check all that apply.

- Money / Salary
- Drugs and/or alcohol
- Food
- Shelter
- Job opportunity/promotion
- Gifts
- Other, please specify: \_\_\_\_\_

2b. Has this happened at any point **in the last year**?

- 0 = No
- 1 = Yes

2c. For how long did you get or have you been given something (e.g., money, drugs, etc.) for [insert endorsed item 2 here]? If this has happened on and off **across your lifetime**, please select the total amount of time you have done this activity.

- |                             |                     |
|-----------------------------|---------------------|
| 1 = Less than 1 month total | 4 = 1-2 years total |
| 2 = 1-6 months total        | 5 = 2-5 years total |
| 3 = 6 months – 1 year total | 6 = 6+ years total  |



2d. How often did you get or have you been given something (e.g., money, drugs, etc.) for [insert endorsed item 2 here]? Please answer based on the **longest** period of time in which you have done this in your lifetime.

- |                            |                              |
|----------------------------|------------------------------|
| 1 = One time only          | 5 = Once a week              |
| 2 = Less than once a month | 6 = 2-3 times per week       |
| 3 = Once a month           | 7 = More than 4 times a week |
| 4 = 2-3 times per month    |                              |

2e. How much money did or do you make by [insert endorsed item 2 here]? Please select the box of the **percentage** of your income that you have made or do make per year, on average, by this activity.

|                           |                                  |                                |                                |
|---------------------------|----------------------------------|--------------------------------|--------------------------------|
| 1 = Not much<br>(0 – 25%) | 2 = Less than half<br>(25 – 50%) | 3 = Half or more<br>(50 – 75%) | 4 = Most or all<br>(75 – 100%) |
|                           |                                  |                                |                                |

*In this section, you will be asked if you have been given something (e.g., money, drugs, etc.) in exchange for sex. This is only if you have been given something (e.g., money, drugs, gifts, etc.) for providing these services.*

3. In your **lifetime**, have **you ever been given** something (e.g., money, drugs, etc.) for giving sex (including vaginal, anal, and/or oral sex)? Only say yes if you have received something for giving sex (not including in the context of a romantic relationship).

- 0 = No  
1 = Yes

*\*Questions 3a – 3e will only populate if #3 is endorsed\**

3a. What have you been given in exchange for giving sex (including vaginal, anal, and/or oral sex)? Please check all that apply.

- Money / Salary
- Drugs and/or alcohol
- Food
- Shelter
- Job opportunity/promotion
- Gifts
- Other, please specify: \_\_\_\_\_

3b. Did this occur at any point in the last year?

- 0 = No  
1 = Yes

3c. For how long did you get or have been given something (e.g., money, drugs, etc.) in exchange for giving sex (including vaginal, anal, and/or oral sex)? If this has happened on and off **across your lifetime**, please select the total amount of time you have done this activity to get something.

- |                             |                     |
|-----------------------------|---------------------|
| 1 = Less than 1 month total | 4 = 1-2 years total |
| 2 = 1-6 months total        | 5 = 2-5 years total |
| 3 = 6 months – 1 year total | 6 = 6+ years total  |

3d. How often did you get or have been given something (e.g., money, drugs, etc.) in exchange for giving sex (including vaginal, anal, and/or oral sex)? Please answer based on the **longest** period in which you have done this in your lifetime.

- |                            |                              |
|----------------------------|------------------------------|
| 1 = One time only          | 5 = Once a week              |
| 2 = Less than once a month | 6 = 2-3 times per week       |
| 3 = Once a month           | 7 = More than 4 times a week |
| 4 = 2-3 times per month    |                              |

3e. How much money did or do you make by doing this activity? Please select the box of the **percentage** of your income that you have made or do make per year, on average, by this activity.

| Not much<br>(0 – 25%) | Less than half<br>(25 – 50%) | Half or more<br>(50 – 75%) | Most or all<br>(75 – 100%) |
|-----------------------|------------------------------|----------------------------|----------------------------|
|                       |                              |                            |                            |

**CONSUMER**

*In this section, you will be asked if you have provided something (e.g., money, drugs, etc.) to obtain erotic services. This is only if you have provided something (e.g., money, drugs, gifts, etc.) to someone for these services (not if you provided the services).*

4. In your **lifetime**, have **you ever utilized** these services (not including those in the context of a romantic relationship)?

- 0 = No
- 1 = Yes

- a. Bars or clubs where employees wear bikinis or other sexy clothing (e.g., Hooters)
- b. Erotic nude modeling magazines and/or websites (e.g., playboy, playgirl, hustler, vixen websites)
- c. Wet t-shirt contest
- d. Girls Gone Wild / Guys Gone Wild
- e. Burlesque performance
- f. Erotic dancing club (i.e., stripping, pole / lap / table / topless dancing) and/or nude peep show performance
- g. Massage parlor / sensual or erotic massage (i.e., happy endings)

- h. Phone sex and/or webcam performance
- i. Pornography or adult film (e.g., online, DVD)
- j. BDSM / Dominatrix (not including in the context of a romantic relationship)
- k. Personal escort (i.e., sugar baby)
- l. Brothel
- m. Street-based sex worker or prostitute
- n. Other, please specify: \_\_\_\_\_

*\*Questions 4a – 4b will only populate below each activity that is endorsed\**

4a. **In the last year**, have you utilized the following service(s) by giving some kind of payment (e.g., money, drugs, gifts, etc.): [insert endorsed item 4 here]?

0 = No  
1 = Yes

4b. **In your lifetime**, how many times have you utilized the following service(s) by giving some kind of payment (e.g., money, drugs, gifts, etc.): [insert endorsed item 4 here]?

|                   |                    |
|-------------------|--------------------|
| 1 = 1 time        | 5 = 51 – 75 times  |
| 2 = 2 – 10 times  | 6 = 76 – 100 times |
| 3 = 11 – 25 times | 7 = 101+ times     |
| 4 = 26 – 50 times |                    |

***In this section, you will be asked if you have given anyone something (e.g., money, drugs, etc.) to obtain sex from them.***

5. In your **lifetime**, have **you ever given** anyone something (e.g., money, drugs, etc.) to obtain sex from them (including vaginal, anal, and/or oral sex). For this question, you are the one who has given something (e.g., money, drugs, gifts, etc.) to get sex from someone (not including those in the context of a romantic relationship)?

0 = No  
1 = Yes

*\*Questions 5a – 5c will only populate if question #5 is endorsed\**

5a. Has this occurred at any point **in the last year**?

0 = No  
1 = Yes

5b. What have you given in order to obtain sex (including vaginal, anal, and/or oral sex)? Please check all that apply.

\_\_\_ Money

- \_\_\_ Drugs and/or alcohol
- \_\_\_ Food
- \_\_\_ Shelter
- \_\_\_ Job opportunity / promotion
- \_\_\_ Gifts
- \_\_\_ Other, please specify: \_\_\_\_\_

5c. **In your lifetime**, how many times have you given anyone something (e.g., money, drugs, etc.) to obtain sex from them (including vaginal, anal, and/or oral sex)?

- |                   |                    |
|-------------------|--------------------|
| 1 = 1 time        | 5 = 51 – 75 times  |
| 2 = 2 – 10 times  | 6 = 76 – 100 times |
| 3 = 11 – 25 times | 7 = 101+ times     |
| 4 = 26 – 50 times |                    |

## APPENDIX E:

### DOCUMENTATION OF INSTITUTIONAL REVIEW BOARD APPROVAL



RESEARCH INTEGRITY AND COMPLIANCE  
Institutional Review Boards, FWA No. 00001669  
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799  
(813) 974-5638 • FAX (813) 974-7091

12/18/2015

~~Edelyn~~ Verona, Ph.D.  
Psychology  
4202 E. Fowler Avenue  
Tampa, FL 33620

RE: **Full Board Approval for Initial Review**  
IRB#: Pro00023675  
Title: Sexual Behavior on Campus: Risk Factors and Group Influences

**Study Approval Period: 12/11/2015 to 12/11/2016**

Dear Dr. Verona:

On 12/11/2015, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents contained within, including those outlined below.

**Approved Item(s):**

**Protocol Document(s):**

~~SBoC~~ [Protocol 12172015](#)

**Consent/Assent Document(s)\*:**

[Informed Consent Aim 2 pilot.pdf](#)

[Informed Consent Aim 2 primary.pdf](#)

[Informed Consent Aim 1 anonymous pilot](#) \*\*granted a waiver

[Informed Consent Aim 1 non-anonymous pilot](#) \*\*granted a waiver

[Informed Consent Aim 1 non-anonymous primary collection](#) \*\*granted a waiver

[Informed Consent Aim 1 SONA pilot](#) \*\* granted a waiver

\*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent document(s) are only valid during the approval period indicated at the top of the form(s). \*\* Waivers are not stamped.

Please note that study enrollment and data collection cannot begin until you have formally applied for the Certificate of Confidentiality (CoC). Once you have obtained the CoC please submit an amendment to the IRB.

Your study qualifies for a waiver of the requirements for the documentation of informed consent as outlined in the federal regulations at 45CFR46.117(c) which states that an IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects if it ~~finds~~ either: (1) That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern; or (2) That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have ~~any~~ questions regarding this matter, please call 813-974-5638.

Sincerely,

A handwritten signature in black ink that reads "John A. Schinka, Ph.D." The signature is written in a cursive style.

~~John Schinka~~, Ph.D., Chairperson  
USF Institutional Review Board



RESEARCH INTEGRITY AND COMPLIANCE  
Institutional Review Boards, FWA No. 00001669  
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799  
(813) 974-5638 • FAX (813) 974-7091

11/14/2016

~~Edelyn~~ Verona, Ph.D.  
Psychology  
4202 E. Fowler Avenue  
Tampa, FL 33620

RE: **Full Board Approval for Continuing Review**  
IRB#: CR1\_Pro00023675  
Title: Sexual Behavior on Campus: Risk Factors and Group Influences

**Study Approval Period: 12/11/2016 to 12/11/2017**

Dear Dr. Verona:

On 11/14/2016, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents contained within, including those outlined below.

**Approved Item(s):**

**Protocol Document(s):**

[SBoC Protocol v3.0 09.13.2016 \(clean\)](#)

**Consent/Assent Document(s)\*:**

[Aim 2 Pilot clean.pdf](#)

[Aim 2 Primary clean.pdf](#)

\*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab on the main study's workspace. Please note, the consent/assent document(s) are only valid during the approval period indicated at the top of the form(s).

The waiver of documentation of informed consent has been renewed.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with USF HRPP policies and procedures and as approved by the USF IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

A handwritten signature in black ink that reads "John A. Schinka, Ph.D." The signature is written in a cursive style with a large, prominent 'J' and 'S'.

John Schinka, Ph.D., Chairperson  
USF Institutional Review Board