ANTISOCIAL TRAITS AND RISKY SEXUAL BEHAVIOR IN INPATIENT ADOLESCENTS

_____

A Senior Honors Thesis

Presented to

the Faculty of the Department of Psychology

University of Houston

_____

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science

_____

By

Caroline Pearson

April 2021

ANTISOCIAL TRAITS AND RISKY SEXUAL BEHAVIOR IN INPATIENT ADOLESCENTS

_____

Caroline Pearson

APPROVED:

_____

Carla Sharp, Ph.D.

_____

Clayton Neighbors, Ph.D.

_____

Jen Vardeman, Ph.D.

The Honors College

_____

Antonio D. Tillis, Ph.D.

Dean, College of Liberal Arts and Social Sciences

ANTISOCIAL TRAITS AND RISKY SEXUAL BEHAVIOR IN INPATIENT ADOLESCENTS

_____

A Senior Honors Thesis

Presented to

the Faculty of the Department of Psychology

University of Houston

_____

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science

_____

By

Caroline Pearson

April 2021

Abstract

Introduction: Risky sexual behavior (RSB) during adolescence increases risk for sexually transmitted diseases, HIV/AIDs, and teenage pregnancy. Youth with externalizing disorders are more likely to engage in RSB, and antisocial traits in adolescence may be particularly relevant to RSB. It is still not clear which specific antisocial traits are most relevant to RSB and RSB attitudes, or how gender influences RSB and RSB attitudes in adolescence. The present study examined RSB and RSB attitudes, and their relationship with gender among inpatient adolescents with antisocial traits. **Methods:** 128 female and 52 male (N=180) inpatient adolescents ranging from 12 to 17 years of age (M = 5.28, SD = 1.41) completed self-report measures of antisocial features, RSB, and RSB attitudes. Pearson's correlations, followed up with multiple linear regressions, were used to examine relations between antisocial features, adolescent age, RSB and RSB attitudes. **Results:** Results indicated no gender differences in RSB; however, significant gender differences in RSB attitudes were found. All antisocial facets, with the exception of stimulus seeking, were not related to RSB. Most antisocial facets were found to be related to RSB attitudes, most significantly antisocial behavior. Age at admission was the variable most significantly related to RSB and RSB attitudes. **Conclusions:** Results suggest that for inpatient adolescents, antisocial features may not be related to engagement in RSB; however, the presence of riskier attitudes may affect future engagement in RSB among adolescent males with antisocial traits later in life and therefore present important preventative targets.

Keywords: risky sexual behavior; adolescents; antisocial traits; psychiatric inpatients; gender

TABLE OF CONTENTS

Antisocial Traits and Risky Sexual Behavior in Inpatient Adolescents

Introduction

RSB and Externalizing Disorders

Increases in risk-taking behaviors, including risky sexual behaviors (RSB), are often observed during adolescence. RSB include early engagement in sexual intercourse, infrequent use of condoms during sexual intercourse, a greater number of sexual partners, and alcohol or drug use prior to sexual intercourse (Basen-Engquist, 1992). Adolescent RSB remains a concern nationally, as RSB is associated with increased rates of sexually transmitted infection (STI), HIV/AIDS, and unplanned pregnancy (Center for Disease Control and Prevention [CDC], 2017c). Nationwide, 30.1% of high school students are sexually active, and among these students, only 56.9% had used a condom during their last sexual intercourse (Kann et al., 2016). Adolescents have the highest incidence of STI among all age groups, and account for half of the 20 million new STI that occur in the United States each year (Center for Disease Control and Prevention [CDC], 2018c). Engagement in some sexual behaviors are appropriate manifestations of adolescent development. Yet these behaviors- when expressed in ways that could possibly cause physical or psychological harm to oneself or others- may coincide with the beginning of a serious problem behavior trajectory. Because of the high rates of undesirable health outcomes, it remains important to examine factors related to adolescents' engagement in RSB to enhance prevention and intervention efforts.

Evidence indicates youth with psychiatric diagnoses are more likely to engage in RSB and are at higher risk for HIV and other STI (Anatale & Kelly, 2015). One group of psychiatric diagnoses, externalizing disorders in youth- conduct disorder (CD), oppositional defiant disorder (ODD), and attention- deficit-hyperactivity disorder (ADHD)- are particularly relevant to

adolescent RSB, as they are characterized by factors such as impulsivity, behavioral disinhibition and sensation seeking (Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Lavery, Siegel, Cousins, & Rubovits, 1993; Wilson, Samuelson, Staudenmeyer, & Widom, 2015). Sensation seeking and impulsive decision-making have been shown to operate synergistically with RSB behaviors such as number of sexual partners, unprotected sex, and alcohol/drug use before or during sex (Charnigo et al., 2013). Furthermore, a longitudinal study by Bardone, Moffit, Caspi, Dickson, and Silva (1996) found that, when compared with healthy, depressed, and anxious teens, adolescents with CD at age 15 years reported significantly higher rates of lifetime sexual partners, STIs, early pregnancy and early sex at follow up at age 21 years. These findings not only point to the strong relationship between externalizing disorders and RSB, but also explain some possible mechanisms behind the association. Adolescents with externalizing disorders tend to make rash decisions and, more importantly, violate rules; hence, they may respond oppositionally to admonishments from authority figures against having sex (Bardone, Moffit, Caspi, Dickson, & Silva, 1996).

ASPD traits and adolescents

Unsurprisingly, externalizing disorders in youth are also highly predictive of disorders involving impulse control difficulties in adulthood, such as antisocial personality disorder (ASPD; Sameka & Hicks, 2014). Evidence shows ASPD traits are associated with numerous sexual risk behaviors (Cicchetti, Beauchaine & McNulty, 2013; Lavan & Johnson, 2002; Luk et al., 2016). Youth with ASPD traits exhibit severe and stable patterns of conduct problems, such as aggressive or threatening behavior, as well as a variety of other high-risk and stimulation seeking behaviors, including risky sexual behavior (Chinchilla & Kosson, 2016; Frick, Ray, Thornton, & Kahn, 2014; Lavery, Siegel, Cousins, & Rubovits, 1993; Luk et al., 2016). The

DSM-5 (American Psychiatric Association, 2013) diagnostic criteria for Antisocial Personality Disorder includes "a pervasive pattern of disregard for and violation of the rights of others, since age 15 years, as indicated by three (or more) of the following":

1. Failure to conform to social norms concerning lawful behaviors, such as performing acts that are grounds for arrest.
2. Deceitfulness, repeated lying, use of aliases, or conning others for pleasure or personal profit.
3. Impulsivity or failure to plan.
4. Irritability and aggressiveness, often with physical fights or assaults.
5. Reckless disregard for the safety of self or others.
6. Consistent irresponsibility, failure to sustain consistent work behavior, or honor monetary obligations.
7. Lack of remorse, being indifferent to or rationalizing having hurt, mistreated, or stolen from another person.

According to the Epidemiological Catchment Area survey, between 2% and 4% of men and between 0.5% and 1% of women fulfilled DSM criteria for ASPD (Regier et al., 1994). Similar to boys and CD, men are over-diagnosed with ASPD, while the prevalence of the disorder is underestimated in women. The literature suggests this may be due to the DSM-5 criteria and how manifestations of the disorder are different in men and women, as well as boys and girls (Dolan & Völlm, 2009; Sher et al., 2015).

Our study will utilize Morey's (2007) Personality Assessment Inventory-Adolescent (PAI-A) measure to conceptualize ASPD. According to the PAI-A, ASPD is conceptualized as being comprised of three traits (Morey, 2007). These traits are egocentricity, stimulus seeking, and

antisocial behavior. Egocentricity encapsulates narcissism, while stimulus seeking involves the tendency to seek thrill and the low boredom tolerance that are hallmarks of ASPD (Morey, 2007). Antisocial behavior is synonymous with the DSM-5 criteria for ASPD (5th ed.; DSM–5; American Psychiatric Association, 2013). Studies utilizing three or more facets to measure ASPD are helpful due to their comprehensive nature but tend to be limited. Among community samples, constructs conceptually similar to the three traits described by Morey (2007)-Grandiose-Manipulative (GM), Dysfunctional Impulsivity (DI), and Callous-Unemotional (CU)-were independently associated with adolescent sexual risk taking (McCauley, Shadur, Hoffman, MacPherson, & Lejuez, 2016; Rucevic, 2010), but when combined in a regression analysis, only impulsivity remained as a significant predictor (Dubas, Baams, Boornwaard, & Van Aken, 2017; Rucevic, 2010).

The DSM-5 dictates that ASPD cannot be diagnosed before age 18, so while an adolescent may display antisocial features prior to age 18, if diagnostic criteria are met, the appropriate diagnosis would be Conduct Disorder (5th ed.; DSM–5; American Psychiatric Association, 2013). This minimum age requirement was outlined in the DSM-5 in order to protect minors from the significant legal ramifications associated with diagnosing an individual with ASPD. However, as a result of these diagnostic criteria, most of the research concerning RSB in youth has not investigated their relationship with ASPD traits, as defined by the PAI, even though these traits can be present during adolescence. Previous literature on adolescent ASPD traits tends to limit itself to constructs under the theoretical umbrella of ASPD traits, such as: psychopathy, CD, conduct problems, CU traits, and externalizing behaviors (Anderson, Zheng, & McMahon, 2017; Bachanas et al., 2002; Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Booth & Zhang, 1997; Chinchilla & Kosson, 2016; Dubas, Baams, Boornwaard, & Van Aken, 2017; Lemelin,

Lussier, Sabourin, Brassard, & Naud, 2014; McCauley et al., 2016; Malow et al., 2007; Paul et al., 2000; Rucˇevic, 2010; Sarver, McCart, Sheidow, Letourneau, & Sarver, 2014; Thornton et al., 2019; Wilson, Samuelson, Staudenmeyer, & Widom, 2015; Wu, Witkiewitz, Mcmahon, Dodge, & Conduct Problems Prevention Research Group, 2010; Wymbs et al., 2013). It is important that we examine ASPD traits in relation to RSB, even if unable to grant a categorical diagnosis of ASPD until the adult years.

Association between RSB, RSB attitudes and ASPD traits

Literature on the relationship between ASPD and RSB in adult samples have shown the odds of engaging in RSB is elevated among those with antisocial traits. This association has been found in community (Fulton, Marcus, & Payne, 2010; Fulton, Marcus, & Zeigler-Hill, 2014; Hudek-Knezˇevic, Kardum, & Krapić, 2007; Jonason, Li, Webster, & Schmitt, 2009; LeBreton, Baysinger, Abbey, & Jacques-Tiura, 2013) and incarcerated (Scheidell et al., 2017) samples. Research on youth with ASPD traits and RSB reveal findings from adult samples do translate, suggesting adolescent antisocial traits are associated with higher likelihood of sexual risk behaviors and outcomes. Specifically, high levels of antisocial traits in adolescence was associated with increased odds of early sexual debut (Anderson, Zheng, & McMahon, 2017; Lemelin, Lussier, Sabourin, Brassard, & Naud, 2014; Paul, Fitzjohn, Herbison, & Dickson, 2000; Ramrakha, Caspi, Dickson, Moffitt, & Paul, 2000; Rucˇevic, 2010; Sarver, McCart, Sheidow, Letourneau, & Sarver, 2014; Wu, Witkiewitz, Mcmahon, Dodge, & Conduct Problems Prevention Research Group, 2010; Wymbs et al., 2013), number of sexual partners (Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Booth & Zhang, 1997; Chinchilla & Kosson, 2016; Luk et al., 2016; Scheidell et al., 2017; Stiffman, Dore, Cunningham, & Earls, 1995; Tubman, Windle, & Windle, 1996), unprotected sexual intercourse (Dubas, Baams, Boornwaard, & Van

Aken, 2017; Lavery, Siegel, Cousins, & Rubovits, 1993; McCauley et al., 2016; Thornton et al., 2019), and sexual intercourse under the influence of alcohol or drugs (Luk et al., 2016; Malow et al., 2007).

Additionally, RSB in adolescence is heavily influenced by attitudes surrounding sexual behavior. For example, attitudes about when to first engage in sexual intercourse, having multiple sexual partners, and whether to use a condom affect the instance of these actual behaviors (Basen-Engquist & Parcel, 1992; Carvajal et al., 1999; Meier, 2003). Research has demonstrated antisocial traits are associated with permissive sexual beliefs. Specifically, antisocial traits have been linked to endorsement of impersonal (LeBreton, Baysinger, Abbey, & Jacques-Tiura, 2013) and uncommitted (Dubas, Baams, Boornwaard, & Van Aken, 2017; Jonason, Li, Webster, & Schmitt, 2009; Kastner & Sellbom, 2012) attitudes about sex. One study, using a high risk, culturally diverse sample of offending adolescents found that those who were high on levels of antisocial traits reported less favorable safer sex and condom attitudes, and less favorable intentions to engage in safer sex behaviors (Malow et al., 2007). Furthermore, a study by Dubas, Baams, Boornward and Van Aken (2017) found that for adolescence with high levels of antisocial traits, sexual risk behaviors and permissive sexual attitudes increase to a greater extent over time than for adolescence with low levels of antisocial traits. These findings illustrate the interplay between sexual risk attitudes and behaviors for adolescents with antisocial traits.

Limitations of Previous Research

Research examining the relationship between RSB, attitudes about RSB, and ASPD traits has been conducted primarily in adult samples, and this literature base has a number of additional limitations. RSB attitude literature is often narrow in scope, typically focusing on knowledge of

and perception of level of risk of contracting HIV/AIDS, and ignoring RSB attitudes such as attitudes toward condom usage (Bachanas et al., 2002; Booth & Zhang, 1997). The study by Malow, Dévieux, Rosenberg, Nair, McMahon, Brown and Kalichman (2007) is the only study known to us that has measured condom attitudes in adolescents in the context of antisocial traits. Examining attitudes surrounding condom usage and other RSB attitudes in adolescence with antisocial traits could be useful in determining the extent to which these attitudes influence subsequent RSB behavior. In addition, the majority of studies have utilized forensic and community samples, and less research has focused on sexual behaviors among adolescents with ASPD traits in clinical settings. The research that has been conducted in inpatient settings tend to have samples that are primarily female (Bachanas et al., 2002; Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Wilson, Samuelson, Staudenmeyer, & Widom, 2015). To our knowledge, Luk, Worley, Winiger, Trim, Hopfer, Hewitt, Brown and Wall's (2016) study is the only study that includes high risk males and females in a clinical setting, specifically a substance abuse clinic. Adolescents in this study were quantitatively split into classes, with the "dual chronic class" being youth highest in antisocial behavior and alcohol or drug use increasing with age. The study found that adolescents in the dual chronic class reported significantly more sexual partners and more unprotected sex under the influence than all the other classes (Luk et al., 2016).

Another limitation of existing literature is that studies examining the role of gender in RSB, RSB attitudes, and ASPD traits are limited (Hudek-Knežević, Kardum, & Krapić, 2007). The impact of some ASPD traits on RSB may be moderated by gender, however, this topic is understudied in adolescent samples. Evidence from adult samples reveal the antisocial trait most significantly related to RSB is impulsivity (Charnigo et al., 2013; Fulton, Marcus, & Payne, 2010; Jardin, Sharp, Garey, & Zvolensky, 2017; Kastner & Sellbom, 2012; Rucčevic, 2010), with

a stronger association between overall RSB and impulsivity in women (Hudek-Knezˇevic, Kardum, & Krapić, 2007). A study by Rucˇevic (2010) found the antisocial trait of thrill-seeking impulsivity had a stronger influence on the mean levels of RSB for girls compared to boys (Rucˇevic, 2010). It would be valuable to test the differences between male and female adolescents on specific RSB's and antisocial traits in a clinical sample to see if these results translate.

Lastly, the quality of measures of ASPD vary between studies. Examining the relationship between ASPD traits and RSB in an adolescent sample using the well validated PAI-A has never been done before. Popular measures of antisocial traits tend to have a narrow focus, primarily on psychopathy, such as the Youth Psychopathic Traits Inventory (YPI; Andershed, Kerr, Stattin, & Levander, 2002), Psychopathic Personality Inventory (PPI; Lilienfeld, 1990), etc. or on behavioral indicators, such as the Child Behavior Checklist (CBCL; Achenbach, 1991) or the Rutter Child Scales (Rutter et al., 1970). Hence, the PAI-A may be more advantageous for measuring antisocial traits due to its comprehensive nature which captures all the important facets of ASPD, not just a select facet. Utilizing the PAI-A would benefit prevention and intervention efforts by allowing us to examine whether one facet is more influential than another on influencing RSB.

The Present Study

STIs, HIV, and pregnancy yield high economic, social, and public health costs among teens in the U.S. (Owusu-Edusei et al., 2013)- and this may be especially true for antisocial adolescents who, evidence shows, have high rates of negative sexual health outcomes. Given this, examining the specificity of each antisocial component in predicting RSB, in addition to understudied factors such as gender and how attitudes might underlie RSB, is important. Against

this background, the present study aimed to add to the limited studies examining RSB and RSB attitudes among inpatient adolescents with antisocial traits by a) examining whether adolescents high in certain antisocial traits differ in specific RSBs and RSB attitudes, and b) examining gender differences in antisocial traits, RSB, and RSB attitudes. Based on previous investigations of RSB among adolescents, we will examine the following components of RSB: age at sexual debut, number of sexual partners in the past 3 months, number of instances of sexual intercourse without a condom in the past 3 months, and number of instances of alcohol or drug use before sexual intercourse in the past 3 months. We will also examine attitudes and beliefs about sexual intercourse. Because infrequent condom use is common in adolescents with antisocial traits, which may lead to STIs, we will utilize a condom attitude scale to examine in depth what underlies this risk behavior. The current study will be the first to use a condom attitudes scale and measure condom attitudes of adolescents with antisocial traits in a clinical sample. The hypothesizes are as follows:

Hypothesis 1. Boys, overall, will report higher scores on all ASPD traits, RSB, and RSB attitudes than girls.

Hypothesis 2. Antisocial features, RSB, and RSB attitudes will be significantly related such that high antisocial traits will be related to higher levels of RSB and more risky attitudes.

Hypothesis 3. Stimulus seeking will be the antisocial trait most significantly correlated with RSB and RSB attitudes in our sample, with an even stronger effect for female adolescents (Rucˇevic, 2010).

Method

Participants

This study included a sample of adolescents recruited from an inpatient psychiatric unit for adolescents with severe emotional and behavioral disorders. This unit was within a larger private psychiatric hospital in a large metropolitan area in the Southwestern United States. Measures were completed within 2 weeks of adolescents' admission and were administered by graduate students and research assistants. Participants were hospitalized for a mean of 38.33 days (*SD* = 13.06). Patients were excluded from the study if they had a diagnosis of schizophrenia, other psychotic disorder, autism spectrum disorder, or an IQ below 70. Parents provided informed consent and adolescents provided informed assent. Patients were not compensated for participating in the study.

Of 238 consecutive admissions, 58 adolescents were excluded because they declined consent or assent, were discharged before assessments could be completed, or did not meet the inclusion criteria. Therefore, the final sample consisted of 128 female and 52 male (*N*=180) adolescents' ranging from 12 to 17 years of age (*M* = 5.28, *SD* = 1.41). Participants' ethnicities were reported as follows: 73.9% White or Caucasian, 6.7% multiracial or other, 3.3% Asian, 2.2% Black or African American, and 0.6% American Indian or Alaskan Native. Based on the Diagnostic Interview Schedule for Children – Computerized Version (NIMH DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), 69.4% of participants were diagnosed with a depressive disorder, 8.9% with bipolar disorder, 10.6% with an eating disorder, 36.7% with an externalizing disorder, and 63.3% with an anxiety disorder.

Measures

Risky Sexual Behavior (RSB). The Safer Choices Survey (SCS; Basen-Engquist et al., 1999) is a 120-item self-report questionnaire that was developed to evaluate a high school based intervention intended to prevent HIV, STD's and unplanned pregnancies. Items assess risky

sexual behavior (RSB), knowledge and perceptions about STDs and condoms, attitudes and perceived norms about sexual behavior, sexual self-efficacy, exposure to school HIV/STD prevention information, and discussions with parents about sex. Four RSB items from the SCS were utilized in the current study because they are similar to constructs frequently used in existing literature. These items included age at sexual debut, number of sexual partners in the past 3 months, number of instances of sexual intercourse without a condom in the past 3 months, and number of instances of alcohol or drug use before sexual intercourse in the past 3 months.

Sexual Risk Beliefs. Attitudes about sexual risk behaviors were measured using the Sexual Risk Behaviors Beliefs and Self Efficacy Scales (SRBBS; Basen-Engquist et al., 1999). The SRBBS were developed from the Safer Choices Survey to assess psychosocial factors related to engagement in RSB. We utilized two continuous SRBBS scale measuring, (a) attitudes about condom use and (b) attitudes about sexual intercourse. The latter scale was divided by items to measure both attitudes about abstinence and attitudes about multiple sexual partners in the same month. The scale assessing attitudes about condom use contains three items endorsing condom usage. An example item is “I believe condoms should always be used if a person my age has sex” (reverse coded). 2 items from the attitudes about sexual intercourse scale, including “I believe people my age should wait until they are older before they have sex” and “I believe it's OK for people my age to have sex with a steady boyfriend/girlfriend” (reverse coded) were used to measure attitudes about abstinence. Attitudes about multiple sexual partners was measured by a single item from the attitudes about sexual intercourse scale, “I believe it’s OK for people my age to have sex with several different people in the same month.” Scales were scored such that higher scores reflected favorable condom usage, supporting abstinence, and less promiscuous attitudes. In the present sample, the SRBBS showed excellent internal consistency, with

Cronbach's α value of .93 for the attitudes about condom use scale and .88 for the attitudes about sexual intercourse scale.

Antisocial Traits. The Antisocial Features (ANT) Scale of the Personality Assessment Inventory for Adolescents (PAI-A; Morey, 2007) is part of a 264-item self-report measure of personality functioning adapted from the adult version of the PAI (Morey, 1991). Items are rated on a 4-point Likert scale ranging from 1 "*false*" to 4 "*very true*". The ANT scale (18 items) is composed of subscales assessing three elements of antisocial personality: ANT-Egocentricity (ANT-E), ANT-Stimulus Seeking (ANT-S), and ANT-Antisocial Behaviors (ANT-A). The ANT scale showed good internal consistency (α=.87) and utility for identifying adolescents with Conduct Disorder who are at risk for manifesting antisocial personality features during adulthood (Morey, 2007). In the current study, the internal consistency of ANT subscales were as follows: ANT-E (α=.69), ANT-S (α=.71), and ANT-A (α=.78).

Data Analytic Strategy

To test for differences in PAI-A-ANT scores, RSB attitudes, and RSB between male and female adolescents, independent sample t-tests were conducted. Pearson's correlations were used to examine relations between antisocial features, adolescent age, RSB and RSB attitudes. Significant bivariate relations between antisocial features and RSB and RSB attitudes were followed up on using multiple linear regression, while controlling for gender and age as appropriate.

Results

Gender differences on PAI-A-ANT and RSB scales

Independent samples t-tests were conducted for PAI-A-ANT scale scores, RSB attitudes, and alcohol or drug use before sex between male (n= 47) and female (n=123) inpatient

adolescents to determine whether any systematic differences existed in scores. Results showed significant gender differences on the PAI-A Antisocial Behaviors scale (t= 3.62, df= 168, p= <.001), and the PAI-A-ANT Egocentricity (t= 2.38, df= 168, p= .02), and PAI-A-ANT Stimulus Seeking (t= 2.06, df= 168, p= .04) subscales, with males having significantly higher scores on ANT-A (M = 56.09, SD = 10.88), ANT-E (M = 53.40, SD = 10.14), and ANT-S (M = 55.38, SD = 11.68) than females (M = 49.88, SD = 9.64; M = 49.63, SD = 8.87; M = 51.11, SD = 12.23). No significant differences were found in alcohol or drug use before sex (t= -.44, df= 46, p= .66) or condom attitudes (t= -1.35, df= 174, p= .18). However, significant differences were found for abstinence attitudes (t= -2.54, df= 174, p= .01), with females (M = 3.35, SD = 2.05) having more favorable attitudes about using condoms than males (M = 2.51, SD = 1.85). Significant gender differences were also found in attitudes about multiple sexual partners in the same month (t= 2.3, df= 173, p= .02), with males (M =.90, SD = .94) endorsing this item significantly more than females (M = .56, SD = .88).

Correlational relations between PAI-A-ANT and RSB

Results of correlation analyses are displayed in Table 1. Pearson correlations were used to test bivariate associations between antisocial features, as measured by the PAI-A-ANT, and RSB and attitudes about RSB. Antisocial behaviors and egocentricity features were not significantly related to any RSB. However, Stimulus Seeking was significantly positively related to RSB alcohol and/or drug use before sex in the past 3 months (r = .34). All PAI-A-ANT scales were significantly, negatively related to abstinence attitudes and significantly, positively related to attitudes about multiple sexual partners. The antisocial behaviors feature was significantly, negatively associated with attitudes about condoms (r = -.17), such that higher scores on this scale were associated with unfavorable attitudes about condom use. Age at admission was

significantly positively related to antisocial behaviors and stimulus seeking, age at sexual debut, and attitudes about multiple partners, and negatively related to alcohol/drug use before sex and attitudes about abstinence.

Regression results for PAI-A-ANT scales predicting RSB variables

Associations between variables were explored further by conducting four linear regression models to examine relations between antisocial features (independent variable) and 4 dependent variables (attitudes about abstinence, attitudes about condoms, attitudes about multiple partners, and RSB alcohol/drug use before sex) that were significantly correlated with antisocial features on bivariate tests, with age in years at admission and gender included as covariates in relevant models.

Attitudes about abstinence as dependent variable. A linear regression model was tested to examine the unique association of antisocial features with attitudes about abstinence. Because gender and age in years at admission were significantly related to attitudes about abstinence, they were included as covariates in this model. The overall model was found to be significant ($F(5,160)= 18.02$, $p<.001$), but only the antisocial behaviors feature ($\beta = -.22$, $t = -2.28$, $p < .03$) was significantly negatively related to attitudes about abstinence.

Attitudes about condom use as dependent variable. A second linear regression model was tested to examine the relationship of antisocial features with attitudes about condom use. The overall model was non-significant ($F(3,162) = 1.74$, $p < .16$).

Attitudes about multiple partners as dependent variable. A third linear regression model was tested to examine the association of antisocial features with attitudes about multiple sexual partners in the same month. Because gender and age in years at admission were significantly related to attitudes about multiple partners in bivariate correlational analyses, they

were included as covariates in this model. The overall model was significant ($F(5,159) = 7.06$, $p < .01$) but only age in years at admission ($\beta = .18$, $t = 2.42$, $p < .02$) was significantly positively related to attitudes about multiple partners.

Alcohol or drug use before sex as dependent variable. A fourth linear regression model was tested to examine the association of antisocial features, with RSB alcohol or drug use before sex in last 3 months. Because age in years at admission was significantly related to alcohol or drug use before sex in bivariate correlational analyses, it was included as a covariate in this model. The overall model was non-significant ($F(4,40) = 2.15$, $p < .09$).

Discussion

Engaging in RSB's can be costly in terms of physical, emotional, and financial health and high levels of RSB have been observed in many psychiatric disorders, especially those characterized by externalizing psychopathology. Risky behaviors, such as RSB, are especially relevant to adolescence as developmental studies suggest these behaviors peak during adolescence. However, few studies have examined how RSB's are related to relevant psychosocial correlates including specific types of psychopathology, such as antisocial personality, gender, and attitudes about RSB. Improving our understanding of the relationship between RSB and these correlates in adolescent samples remains important. This is due to the fact that, although ASPD cannot be diagnosed before age 18, antisocial traits first become apparent in adolescence. An improved understanding about the relation between specific antisocial traits, RSB attitudes, and adolescent gender may contribute to early intervention treatment and prevention efforts targeting traits known to be related to specific behavioral or attitudinal correlates.

Against this backdrop, the current paper had two aims. The first was to determine if significant differences exist between certain antisocial features and specific RSBs and RSB attitudes. The second was to determine how gender differences effect the relationship between antisocial traits, RSB, and RSB attitudes. Given past research on RSB in adults and adolescents with antisocial traits, we hypothesized higher scores on all facets of antisocial personality for boys than for girls, and higher reports of RSB and RSB attitudes for boys than girls. We hypothesized that all antisocial features would be related to RSB and RSB attitudes. We also hypothesized that the antisocial feature of stimulus seeking would be the most significantly correlated with RSB and RSB attitudes and would demonstrate a stronger effect for female adolescents.

Our first hypothesis found mixed support. Consistent with our hypothesis, significant mean differences emerged between the genders on antisocial features, with male adolescents scoring significantly higher on all antisocial facets than female adolescents. This is congruent with prevalence estimates that males are more likely to be diagnosed with antisocial or conduct disorders (5th ed.; DSM–5; American Psychiatric Association, 2013). Significant differences between males and females were also found for most RSB attitude scales, with females endorsing more favorable condom usage attitudes than males, and males endorsing attitudes of greater permissiveness than females. The associations of male adolescents with riskier attitudes about sex, independent of antisocial features, may be understood in the light of socialization practices for different genders. Whereas RSB for boys is considered somewhat normative, girls tend to be stigmatized and are often blamed for sexual encounters that may result in STI's or pregnancy (Cuffee, Hallfors, & Waller, 2007). It is likely girls internalize subtle messages from society which, in turn, shape their inclination toward impression management and reporting more

safe-sex attitudes than boys. Petersen and Hyde (2011) explain, in accordance with cognitive social learning theory, how men and women internalize societies sexual double standard- the idea that "casual sex and multiple sexual partners are acceptable for men, but not for women"- and regulate their attitudes in accordance with it. Thus, cognitive social learning theory would predict measurable gender differences in sexual attitudes such that men are more likely than women to hold more sexually permissive attitudes toward RSB behaviors (Petersen & Hyde, 2011).

However, inconsistent with our first hypothesis, independent samples t-tests found no significant gender differences on RSB scales, suggesting that males and females do not actually report engaging in RSB's to differing degrees. Teenage boys did not engage in sexual intercourse earlier, with more partners, with infrequent condom usage, or with alcohol and/or drugs more than girls. This finding is inconsistent with previous studies which have found that boys become sexually active earlier and engage in sexual relations with more partners than girls (Miller, Sabo, Farrell, Barnes, & Melnick, 1998; Santelli, Lindberg, Abma, McNeely, & Resnick, 2000). This is also inconsistent with a more recent study Brooks Holliday, Ewing, Storholm, Parast, and D'Amico (2017) which found that while boys with antisocial traits engage in alcohol and other drug use before/during sex more than girls, the association between antisocial traits and having four or more lifetime partners, having two or more partners in the last 3 months, and engaging in "condomless" sex was stronger among girls. With that said, however, our null finding may reveal more about our clinical sample than neurotypical adolescents, as psychopathology tends to wash out the normative differences between boys and girls (Basen-Engquist & Parcel, 1992; Carvajal et al., 1999; Glass & Wright, 1992; Meier, 2003; Miller, Christensen, & Olson, 1987).

Mixed support was also found regarding our second hypothesis. Bivariate correlations revealed that only one antisocial feature (stimulus seeking) was significantly related to RSB. This finding contrasts with the consensus of previous studies that youth antisocial behavior predicts early sexual debut, multiple sexual partners, infrequent condom usage, and alcohol or drug use before sex (Anderson, Zheng, & McMahon, 2017; Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Paul, Fitzjohn, Herbison, & Dickson, 2000; Tubman, Windle, & Windle, 1996). Moreover, although no previous study on antisocial traits and RSB has utilized the PAI-A-ANT (Morey, 2007) scale with three antisocial facets, other studies that have utilized a multi-faceted measure of antisocial traits find similar results. For example, a study by Dubas, Baams, Doornwaard, and van Aken (2017) measured antisocial traits with three constructs theoretically similar to the PAI-A-ANT facets- callous-unemotional (CU), grandiose manipulative (GM), and dysfunctional impulsivity (DI) - and found that adolescents with the highest levels of all three facets reported higher initial levels of sexual risk behaviors and greater increases in sexual risk behavior over time, compared to adolescents high on only one or two facets. However, our finding that the egocentricity facet (similar to constructs such as narcissism and interpersonal manipulation) is not related to RSB is supported by previous studies which found that egocentrism and grandiose manipulation are not predictive of any risky behaviors, such as RSB (Lavery, Siegel, Cousins, & Rubovits, 1993; Rucˇevic, 2010). This may be because the egocentricity facet may not be tapping into the same construct as it is in the adult samples (a manipulative, superficial, and egocentric personality style), and therefore is not related to risky sexual behavior in expected ways for adolescents (Rucˇevic, 2010). Our finding that the stimulus seeking facet was related to RSB alcohol or drug use before sex is supported by previous studies which found the impulsive or sensation seeking feature of psychopathy- analogous to stimulus

seeking- to be the only significant predictor of RSB (Charnigo et al., 2013; Fulton, Marcus, & Payne, 2010; Jardin, Sharp, Garey, & Zvolensky, 2017; Kastner & Sellbom, 2012; Rucˇevic, 2010). This finding is important because it supports the hypothesis that sexual risk-taking is partially explained by disinhibited behaviors which emerge from boredom susceptibility and dispositional impulsivity (Lemelin, Lussier, Sabourin, Brassard, & Naud, 2014; Paul, Fitzjohn, Herbison, & Dickson, 2000).

Regarding RSB attitudes, the second hypothesis was supported: most antisocial features were found to be significantly, negatively related to abstinence attitudes and significantly, positively related to attitudes about multiple sexual partners. In linear regression models with condom attitudes as the dependent variable, we found the antisocial behavior facet was significantly negatively associated with condom usage attitudes. The relationship of antisocial traits with risker sexual attitudes may be understood in light of the personality and behavioral components of ASPD. Previous studies have linked measures of callous-unemotional personality, narcissism, and impulsivity- scales similar to the PAI-A-ANT scales- to endorsement of promiscuous sexual attitudes and preferences for short term and impersonal sexual relationships (Dubas, Baams, Boornwaard, & Van Aken, 2017; Jonason, Li, Webster, & Schmitt, 2009; LeBreton, Baysinger, Abbey, & Jacques-Tiurad, 2013). The inherent traits of ASPD could thus affect adolescent's inclination to endorse risky sexual behaviors. Whether RSB attitudes are specific to adolescents with antisocial traits or products of neurotypical adolescent development is a question that should continue to be examined in future research. Age was significantly positively related to the antisocial behaviors feature, stimulus seeking feature, age at sexual debut, and attitudes about multiple partners, and negatively related to RSB alcohol/drug use before sex and attitudes about abstinence. This finding suggests a possible relationship

between age in years at admission to clinic and antisocial traits, and that the inpatient sample may have accounted for more of the RSB and RSB attitudes than the antisocial features themselves.

Regarding our third hypothesis, as previously mentioned, correlation and regression analyses suggest that stimulus seeking was the only antisocial feature related to RSB. This supports previous the consensus from adult research that the antisocial trait most significantly related to RSB is impulsivity (Charnigo et al., 2013; Fulton, Marcus, & Payne, 2010; Jardin, Sharp, Garey, & Zvolensky, 2017; Kastner & Sellbom, 2012; Rucˇevic, 2010). Since impulsivity is a common factor in externalizing disorders, and adolescence with externalizing disorders tend to engage in risky behaviors, it is not surprising that this facet a prominent factor in the relationship between antisocial traits and RSB. Contrary to our hypothesis, however, the association between stimulus seeking and RSB was not stronger for female adolescence. This contradicts Rucˇevic's (2010) finding that the effect of stimulus seeking (impulsivity) was stronger for girls than boys. Antisocial behaviors was significantly related to all RSB attitudes, not stimulus seeking as hypothesized. This suggests that while impulsivity may drive adolescence to actively engage in RSB, permissive thoughts and beliefs surrounding sexual behavior may be an aspect of ASPD. This is congruent with prior research which has outlined that those with ASPD traits tend to hold permissive, impersonal, and less favorable safe sex attitudes (Dubas, Baams, Boornwaard, & Van Aken, 2017; Jonason, Li, Webster, & Schmitt, 2009; LeBreton, Baysinger, Abbey, & Jacques-Tiurad, 2013).

In summary, our results suggest that, among inpatient adolescent age 12 to 17 years old, (a) although significant gender differences in RSB attitudes exist, no significant gender differences exist in engagement in actual RSB, (b) antisocial personality, apart from stimulus

seeking, is not significantly related to RSB, (c) antisocial behavior is significantly related to RSB attitudes, and (d) age is the variable most significantly related to RSB and RSB attitudes.

Limitations and Future Directions

The present results should be considered in the context of the study's limitations. One limitation is that the PAI-A is a broadband personality assessment for adolescents that assess antisocial traits in a different way (with three facets) than other more popular, specific measures that focus more on personality or behavioral aspects of ASPD. The use of a more narrow measure may have given us higher correlations with RSB and RSB attitudes. With that said, future studies should consider applying both broad and specific measures when assessing antisocial traits to see if results are equivalent. A second limitation of the current study is the reduced sample size for the items asked only of participants who endorsed having sex. A larger sample would have provided more power to detect effects on the RSB items. A third limitation is the sample was primarily Caucasian. It is possible that the study's results may not generalize to more diverse samples, since antisocial traits materialize in alternative ways for different groups. Finally, the study is limited in that there was no assessment of the adolescent's sexual orientation during data collection. Given that the SCS asked about sexual intercourse without condom usage, this survey may have not been a valid assessment of RSB and RSB attitudes for adolescence with non-heterosexual orientations. Future studies should utilize RSB measures that are sensitive for use in populations with all sexual orientations.

The present study found that among impatient adolescents, gender did not affect engagement in RSB but did affect endorsement of RSB attitudes. Additionally, while stimulus seeking was the only facet of antisocial personality related to RSB, most facets were found to be related to RSB attitudes- Antisocial Behavior most significantly. The presence of riskier attitudes

may affect future engagement in RSB among adolescent males with antisocial traits and may be why elevations in RSB have been noted among adults and adolescence with antisocial traits. Results therefore point to the need to evaluate perceived attitudes and beliefs related to engagement in sexual behavior among adolescences with antisocial traits to prevent future high-risk behavior.

Table 1.

Bivariate correlations between antisocial traits, risky sexual behavior (RSB), and attitudes about RSB

		1	2	3	4	5	6	7	8	9	10
1	Age in years at admission	--									
2	PAI-A Antisocial Behaviors	.26**	--								
3	PAI-A Egocentricity	.08	.54**	--							
4	PAI-A Stimulus Seeking	.28**	.72**	.55**	--						
5	Age at sexual debut	.64**	-.11	-.17	-.00	--					
6	Number of partners in past 3 months	-.12	.21	.25	.20	-.24	--				
7	Sex without condom usage in past 3 months	.12	.18	-.01	-.05	.02	.05	--			
8	Alcohol or drug use before sex in past 3 months	-.32*	.16	.03	.30*	-.22	.42**	.09	--		
9	Attitudes about condoms	.07	-.17*	-.11	-.10	.20	-.15	-.39**	-.08	--	
10	Attitudes about abstinence	-.48**	-.46**	-.31**	-.43**	-.03	-.05	-.02	.02	.11	--
11	Attitudes about multiple partners in same month	.30**	.35**	.29**	.34**	.17	.18	-.16	.19	-.08	-.66**

Note. *Correlation is significant at the 0.05 level. **Correlation is significant at the 0.01 level. Antisocial Traits = Personality Assessment Inventory-Adolescent (PAI-A-ANT), higher scores indicate higher traits. All other variables from the Safer Choices Survey and SRBBS scales. Items assessing RSB were answered only by adolescents who had endorsed having their sexual debut, or who endorsed having sex in the last 3 months, which had reduced *n*. Age at sexual debut, number of partners in past 3 months, sex without condom usage in past 3 months, alcohol or drug use before sex in past 3 months: *n*=48

References

Achenbach, T.M., 1991. Manual for the Child Behavior Checklist/4-18 and 1991 Profile. University of Vermont Department of Psychiatry, Burlington, VT.

Anatale, K., & Kelly, S. (2015). Factors influencing adolescent girls' sexual behavior: A secondary analysis of the 2011 Youth Risk Behavior Survey. *Issues in Mental Health Nursing*, 36, 217-221. http://dx.doi.org/10.3109/01612840.2014.963902

Andershed, H., Kerr, M., Stattin, H., & Levander, S. (2002). Psychopathic traits in non-referred youths: A new assessment tool. In E. Blauuw, & L. Sheridan (Eds.), *Psychopaths: Current International Perspectives* (pp. 131–158). The Hague: Elsevier.

Anderson, S., Zheng, Y., & McMahon, R. (2017). Predicting risky sexual behavior: The unique and interactive roles of childhood conduct disorder symptoms and callous-unemotional traits. (Report). *Journal of Abnormal Child Psychology*, *45*(6), 1147–1156. https://doi.org/10.1007/s10802-016-0221-1

Bachanas, P., Morris, M., Lewis-Gess, J., Sarett-Cuasay, E., Flores, A., Sirl, K., & Sawyer, M. (2002). Psychological adjustment, substance use, HIV knowledge, and risky sexual behavior in at-risk minority females: Developmental differences during adolescence. *Journal of Pediatric Psychology*, *27*(4), 373–384. https://doi.org/10.1093/jpepsy/27.4.373

Bardone, A., Moffitt, T., Caspi, A., Dickson, N., & Silva, P. (1996). Adult mental health and social outcomes of adolescent girls with depression and conduct disorder. *Development and Psychopathology*, *8*(4), 811–829. https://doi.org/10.1017/S0954579400007446

Basen-Engquist, K. (1992). Psychosocial predictors of "safer sex" behav- iors in young adults. *AIDS Education and Prevention, 4,* 120–134. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/1642957

Basen-Engquist, K., & Parcel, G. (1992). Attitudes, norms, and self-efficacy: A model of adolescents' HIV-related sexual risk behavior. *Health Education & Behavior*, *19*(2), 263–277. https://doi.org/10.1177/109019819201900209

Booth, R., & Zhang, Y. (1997). Conduct disorder and HIV risk behaviors among runaway and homeless adolescents. *Drug and Alcohol Dependence*, *48*(2), 69–76. https://doi.org/10.1016/S0376-8716(97)00113-0

Brooks Holliday, S., Ewing, B., Storholm, E., Parast, L., & D'Amico, E. (2017). Gender differences in the association between conduct disorder and risky sexual behavior. *Journal of Adolescence*, *56,* 75–83. https://doi.org/10.1016/j.adolescence.2017.01.008

Caputo, A., Frick, P., & Brodsky, S. (1999). Family Violence and Juvenile Sex Offending: The Potential Mediating Role of Psychopathic Traits and Negative Attitudes Toward Women. *Criminal Justice and Behavior*, 26(3), 338–356. https://doi.org/10.1177/0093854899026003004

Carvajal, S., Parcel, G., Basen-Engquist, K., Banspach, S., Coyle, K., Kirby, D., & Chan, W. (1999). Psychosocial predictors of delay of first sexual intercourse by adolescents. *Health Psychology*, *18*(5), 443–452. https://doi.org/10.1037/0278-6133.18.5.443

Centers for Disease Control and Prevention (CDC). (2017c). *Sexual risk behaviors: HIV, STD, and teen pregnancy prevention*. Retrieved from http://www.cdc.gov/healthyyouth/sexualbehaviors

Centers for Disease Control and Prevention (CDC). (2018c). *Sexually transmitted diseases: Adolescents and young adults*. Retrieved from https://www.cdc.gov/std/life-stages-populations/adolescents-youngadults.htm

Charnigo, R., Noar, S., Garnett, C., Crosby, R., Palmgreen, P., & Zimmerman, R. (2013). Sensation seeking and impulsivity: Combined associations with risky sexual behavior in a large sample of young adults. *The Journal of Sex Research*, *50*(5), 480–488. https://doi.org/10.1080/00224499.2011.652264

Chinchilla, M., & Kosson, D. (2016). Psychopathic traits moderate relationships between parental warmth and adolescent antisocial and other high-risk behaviors. *Criminal Justice and Behavior*, *43*(6), 722–738. https://doi.org/10.1177/0093854815617216

Cicchetti, D., Beauchaine, T., & McNulty, T. (2013). Comorbidities and continuities as ontogenic processes: Toward a developmental spectrum model of externalizing psychopathology. *Development and Psychopathology*, 25(4pt2), 1505–1528. https://doi.org/10.1017/s0954579413000746

Cuffee, J., Hallfors, D., & Waller, M. (2007). Racial and gender differences in adolescent sexual attitudes and longitudinal associations with coital debut. *Journal of Adolescent Health*, *41*(1), 19–26. https://doi.org/10.1016/j.jadohealth.2007.02.012

Diagnostic and statistical manual of mental disorders : DSM-5. (Fifth edition.). (2013). Washington, D.C: American Psychiatric Association.

Dolan, M., & Völlm, B. (2009). Antisocial personality disorder and psychopathy in women: A literature review on the reliability and validity of assessment instruments. *International Journal of Law and Psychiatry*, 32(1), 2–9. https://doi.org/10.1016/j.ijlp.2008.11.002

Dubas, J., Baams, L., Doornwaard, S., & van Aken, M. (2017). Dark personality traits and impulsivity among adolescents : Differential links to problem behaviors and family relations. *Journal of Abnormal Psychology*, 126(7), 877–889. https://doi.org/10.1037/abn0000290

Frick, P., Ray, J., Thornton, L., & Kahn, R. (2014). Can callous-unemotional traits enhance the understanding, diagnosis, and treatment of serious conduct problems in children and adolescents? A comprehensive review. *Psychological Bulletin*, *140*(1), 1–57. https://doi.org/10.1037/a0033076

Fulton, J., Marcus, D., & Payne, K. (2010). Psychopathic personality traits and risky sexual behavior in college students. *Personality and Individual Differences*, *49*(1), 29–33. https://doi.org/10.1016/j.paid.2010.02.035

Fulton, J., Marcus, D., & Zeigler-Hill, V. (2014). Psychopathic personality traits, risky sexual behavior, and psychological adjustment among college-age women. *Journal Of Social And Clinical Psychology*, *33*(2), 143–168. https://doi.org/10.1521/jscp.2014.33.2.143

Glass, S., & Wright, T. (1992). Justifications for extramarital relationships: The association between attitudes, behaviors, and gender. *The Journal of Sex Research*, *29*(3), 361–387. https://doi.org/10.1080/00224499209551654

Hudek-Knežević, J., Kardum, I., & Krapić, N. (2007). HIV-transmission knowledge, five-factor personality traits and psychopathy as determinants of risky sexual behaviors. *Review of Psychology*, *14*(2), 139–152. Retrieved from https://psycnet.apa.org/record/2008-11589-005

Jardin, C., Sharp, C., Garey, L., & Zvolensky, M. (2017). The role of impulsivity in the relation between negative affect and risky sexual behaviors. *Journal of Sex & Marital Therapy*, *43*(3), 250–263. https://doi.org/10.1080/0092623X.2016.1141821

Jonason, P., Li, N., Webster, G., & Schmitt, D. (2009). The dark triad: Facilitating a short-term mating strategy in men. *European Journal of Personality*, *23*(1), 5–18. https://doi.org/10.1002/per.698

Kann, L., Mcmanus, T., Harris, W., Shanklin, S., Flint, K., Hawkins, J., … Zaza, S. (2016). Youth risk behavior surveillance - United States, 2015. *Morbidity and Mortality Weekly Report. Surveillance Summaries (Washington, D.C. : 2002)*, *65*(6), 1–174. https://doi.org/10.15585/mmwr.ss6506a1

Kastner, R., & Sellbom, M. (2012). Hypersexuality in college students: The role of psychopathy. *Personality and Individual Differences*, *53*(5), 644–649. https://doi.org/10.1016/j.paid.2012.05.005

Kessler, R., Berglund, P., Demler, O., Jin, R., Merikangas, K., & Walters, E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, *62*(6), 593–602. https://doi.org/10.1001/archpsyc.62.6.593

King, S., Iacono, W., & Mcgue, M. (2004). Childhood externalizing and internalizing psychopathology in the prediction of early substance use. *Addiction*, *99*(12), 1548–1559. https://doi.org/10.1111/j.1360-0443.2004.00893.x

Lavan, J., & Johnson, J. (2002). The association between axis I and II psychiatric symptoms and high-risk sexual behavior during adolescence. *Journal of Personality Disorders, 16*(1), 73-94. http://doi.org/10.1521/pedi.16.1.73.22559

Lavery, B., Siegel, A., Cousins, J., & Rubovits, D. (1993). Adolescent risk-taking: An analysis of problem behaviors in problem children. *Journal Of Experimental Child Psychology*, *55*(2), 277–294. https://doi.org/10.1006/jecp.1993.1016

Lebreton, J., Baysinger, M., Abbey, A., & Jacques-Tiura, A. (2013). The relative importance of psychopathy-related traits in predicting impersonal sex and hostile masculinity. *Personality and Individual Differences*, *55*(7), 817–822. https://doi.org/10.1016/j.paid.2013.07.009

Lemelin, C., Lussier, Y., Sabourin, S., Brassard, A., & Naud, C. (2014). Risky sexual behaviours: the role of substance use, psychopathic traits, and attachment insecurity among adolescents and young adults in Quebec. (Report). *The Canadian Journal of Human Sexuality*, *23*(3), 189–199. https://doi.org/10.3138/cjhs.2625

Lilienfeld, S. O. (1990). *Development and preliminary validation of a self-report measure of psychopathic personality*. Unpublished doctoral dissertation, University of Minnesota, Minneapolis, MN.

Luk, J., Worley, M., Winiger, E., Trim, R., Hopfer, C., Hewitt, J., Brown, S., Wall, T. (2016). Risky driving and sexual behaviors as developmental outcomes of co-occurring substance use and antisocial behavior. *Drug and Alcohol Dependence*, *169*, 19–25. https://doi.org/10.1016/j.drugalcdep.2016.10.006

Malow, R., Dévieux, J., Rosenberg, R., Nair, M., McMahon, R., Brown, E., & Kalichman, S. (2007). Antisocial psychopathy and HIV risk among alcohol and other drug (AOD) abusing adolescent offenders. *American Journal of Infectious Diseases*, *3*(4), 230–239. https://doi.org/10.3844/ajidsp.2007.230.239

McCauley, K., Shadur, J., Hoffman, E., Macpherson, L., Lejuez, C., Zvolensky, M., & Leventhal, A. (2016). Adolescent callous-unemotional traits and parental knowledge as predictors of unprotected sex among youth. *Behavior Modification*, *40*(1-2), 70–96. https://doi.org/10.1177/0145445515615355

Meier, A. (2003). Adolescents' Transition to first intercourse, religiosity, and attitudes about sex. *Social Forces*, *81*(3), 1031–1052. https://doi.org/10.1353/sof.2003.0039

Miller, B., Christensen, R., & Olson, T. (1987). Adolescent self-esteem in relation to sexual attitudes and behavior. *Youth & Society*, *19*(1), 93–111. https://doi.org/10.1177/0044118X87019001005

Miller, K., Sabo, D., Farrell, M., Barnes, G., & Melnick, M. (1998). Athletic participation and sexual behavior in adolescents: The different worlds of boys and girls. *Journal Of Health And Social Behavior*, *39*(2), 108–123. Retrieved from www.jstor.org/stable/2676394

Morey, L. C. (2007). *Personality Assessment Inventory: Professional manual* (2nd ed.). Odessa, FL: Psychological Assessment Resources

Netland, J., & Miner, M. (2012). Psychopathy traits and parental dysfunction in sexual offending and general delinquent adolescent males. *Journal of Sexual Aggression: Children and Young People with Harmful Sexual Behaviour*, *18*(1), 4–22. https://doi.org/10.1080/13552600.2011.632696

Owusu-Edusei, W., Chesson, L., Gift, B., Tao, K., Mahajan, K., Ocfemia, K., & Kent, K. (2013). The estimated direct medical cost of selected sexually transmitted infections in the United States, 2008. *Sexually Transmitted Diseases*, *40*(3), 197–201. https://doi.org/10.1097/OLQ.0b013e318285c6d2

Paul, C., Fitzjohn, J., Herbison, P., & Dickson, N. (2000). The determinants of sexual intercourse before age 16. *Journal of Adolescent Health*, *27*(2), 136–147. https://doi.org/10.1016/S1054-139X(99)00095-6

Petersen, J. L. & Hyde, J. S. (2011) Gender differences in sexual attitudes and behaviors: A review of meta-analytic results and large datasets. *The Journal of Sex Research*, 48:2-3, 149-165, doi:10.1080/00224499.2011.551851

Ramos Olazagasti, M., Klein, R., Mannuzza, S., Belsky, E., Hutchison, J., Lashua-Shriftman, E., & Xavier Castellanos, F. (2013). Does childhood attention-deficit/hyperactivity disorder predict Risk-Taking and medical illnesses in adulthood? *Journal of the American Academy of Child & Adolescent Psychiatry*, *52*(2), 153–162.e4. https://doi.org/10.1016/j.jaac.2012.11.012

Ramrakha, S., Caspi, A., Dickson, N., Moffitt, T., & Paul, C. (2000). Psychiatric disorders and risky sexual behaviour in young adulthood: cross sectional study in birth cohort. *British Medical Journal*, *321*(7256), 263–266. https://doi-org.ezproxy.lib.uh.edu/10.1136/bmj.321.7256.263

Regier, D. A., Myers, J. K., Kramer, M., Robins, L. N., Blazer, D. G., Hough, R. L., ... & Locke, B. Z. (1984). The NIMH Epidemiologic Catchment Area program: historical context, major objectives, and study population characteristics. *Archives of general psychiatry*, 41(10), 934-941.

Ručević, S. (2010). Psychopathic personality traits and delinquent and risky sexual behaviors in Croatian sample of non-referred boys and girls. *Law and Human Behavior*, *34*(5), 379–391. https://doi.org/10.1007/s10979-009-9196-6

Rutter M., Tizard J., & Whitmore K. (1970). Education, Health and Behaviour. London: Longman

Samek, D., & Hicks, B. (2014). *Externalizing disorders and environmental risk: mechanisms of gene-environment interplay and strategies for intervention.(Report)*. *11*(5), 537–547. https://doi.org/10.2217/cpr.14.47

Santelli, J., Lindberg, L., Abma, J., McNeely, C., & Resnick, M. (2000). Adolescent sexual behavior: Estimates and trends from four nationally representative surveys. *Family Planning Perspectives*, *32*(4), 156-194. https://doi.org/10.2307/2648232

Sarver, D., Mccart, M., Sheidow, A., Letourneau, E., & Sarver, D. (2014). ADHD and risky sexual behavior in adolescents: conduct problems and substance use as mediators of risk. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *55*(12), 1345–1353. https://doi.org/10.1111/jcpp.12249

Scheidell, J., Lejuez, C., Golin, C., Adimora, A., Wohl, D., Keen, L., Hammond, M., Judon-Monk, S., & Khan, M. (2017). Patterns of mood and personality factors and associations with STI/HIV-related drug and sex risk among African American male inmates. *Substance Use & Misuse*, *52*(7), 929–938. https://doi.org/10.1080/10826084.2016.1267221

Sher, L., Siever, L., Goodman, M., McNamara, M., Hazlett, E., Koenigsberg, H., & New, A. (2015). Gender differences in the clinical characteristics and psychiatric comorbidity in patients with antisocial personality disorder. *Psychiatry Research*, 229(3), 685–689. https://doi.org/10.1016/j.psychres.2015.08.022

Stiffman, A., Dore, P., Cunningham, R., & Earls, F. (1995). Person and environment in HIV risk behavior change between adolescence and young adulthood. *Health Education & Behavior*, *22*(2), 211–226. https://doi.org/10.1177/109019819502200209

Thornton, L., Frick, P., Ray, J., Wall Myers, T., Steinberg, L., & Cauffman, E. (2019). Risky sex, drugs, sensation seeking, and callous unemotional traits in justice-involved male adolescents. *Journal of Clinical Child and Adolescent Psychology : the Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53*, *48*(1), 68–79. https://doi.org/10.1080/15374416.2017.1399398

Tubman, J., Windle, M., & Windle, R. (1996). Cumulative sexual intercourse patterns among middle adolescents: Problem behavior precursors and concurrent health risk behaviors. *Journal of Adolescent Health*, *18*(3), 182–191. https://doi.org/10.1016/1054-139X(95)00128-F

Wilson, H., Samuelson, S., Staudenmeyer, A., & Widom, C. (2015). Trajectories of psychopathology and risky behaviors associated with childhood abuse and neglect in low-income urban African American girls. *Child Abuse & Neglect*, *45*, 108–121. https://doi.org/10.1016/j.chiabu.2015.02.009

Wu, J., Witkiewitz, K., Mcmahon, R., Dodge, K., & Conduct Problems Prevention Research Group. (2010). A parallel process growth mixture model of conduct problems and substance use with risky sexual behavior. *Drug and Alcohol Dependence*, *111*(3), 207–214. https://doi.org/10.1016/j.drugalcdep.2010.04.013

Wymbs, B., Mccarty, C., Baer, J., King, K., Stoep, A., & Mccauley, E. (2013). Callous-unemotional traits and conduct disorder symptoms as prospective risk factors for adolescent sexual activity. *Journal of Clinical Child & Adolescent Psychology*, *42*(5), 693–699. https://doi.org/10.1080/15374416.2013.796858