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Dexter R. Voisin  
*Case Western Reserve University, drv22@case.edu*

Author(s) ORCID Identifier:

[Dexter R. Voisin](#)

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## Exposure to Verbal Parental Aggression and Sexual Activity among Low Income African American Youth

Dexter R. Voisin, Anna Hotton, and John Schneider

### Abstract

The study examined whether witnessing verbal parental aggression (VPA) was related to sexual activity among African American youth who were mostly low income, and whether psychological symptoms mediated this relationship. Five hundred and sixty-three African American high school adolescents (ages 13 to 19) completed self-administered questionnaires, which assessed demographics, psychological problems (e.g., depression, anxiety, aggression and posttraumatic stress disorder symptoms), witnessing VPA, and sexual activity. Participants who witnessed high versus no VPA were 2 times more likely to report sexual activity. This relationship was mediated by aggression for males and females, and posttraumatic stress disorder symptoms for females only. Youth service providers should be trained to understand the prevalence of co-occurring problems such as exposure to VPA, aggression, PTSD symptoms, and sexual activity, with the goal of more effectively supporting the healthy development of African American youth.

### Keywords

adolescents; psychological symptoms; sexual activity; African American

### Introduction

During 2004, African American youth comprised only 15% of the adolescent population in the United States (U.S.), yet they accounted for 61% of new human immunodeficiency virus (HIV) cases among all adolescents (Centers for Disease Control, 2008). The early onset (i.e., on or before age 13) of sexual intercourse has been identified as one of the factors attributing to such disparities (Centers for Disease Control, 2008). Early initiation of sexual intercourse lengthens the period of risk not only for sexually transmitted infections (STIs) but also for teenage pregnancy, which has well documented negative health, social, and economic consequences (Curran, 2007).

African American adolescents are more likely than their white and Latino/Hispanic counterparts to report earlier sexual intercourse (Centers for Disease Control and Prevention, 2010). Sex is a normative part of healthy youth development. However, youth who engage in sex at an early age may lack important prevention information and therefore may be at a higher risk for acquiring STIs, including HIV (Centers for Disease Control, 2008). This is especially the case in the U.S., where the majority of sex education delivered to young adults is primarily about abstinence and pregnancy prevention, with negligible information about STI's, and a dearth of information on HIV prevention (Department of Health and Human Services, 2008).

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Corresponding authors: D.R. Voisin, University of Chicago, School of Social Service Administration, 969 East 60<sup>th</sup> Street, Chicago IL, USA. d-voisin@uchicago.edu, A. Hotton, Howard Brown Health Center, Chicago IL, USA, J. Schneider, University of Chicago, Departments of Medicine and Health Studies, Chicago, IL, USA.

Without entering the sexual abstinence debate, a clearer understanding of the factors and pathways associated with sexual activity among this group represents a major public health priority. More recently, researchers are urging for a greater integration of individual and contextual factors when examining youth sexual activity (DiClemente et al., 2007; Voisin, Jenkins, & Takahashi, 2011). The identification of such factors could contribute to the development of programs to prevent or alter sexual risk behaviors.

Literature reviews have documented that witnessing interparental violence is associated with a number of adolescent deficits, such as psychological problems including anxiety, depression, aggression, and posttraumatic stress disorder (PTSD) symptoms (Holt, Buckley, & Whelan, 2008), and having risky sex (Voisin, 2003, 2005). Interparental violence is defined as verbal, physical, or sexual abuse inflicted by a current or former partner or spouse (Centers for Disease Control and Prevention, 2010). Although family and interparental violence are often used interchangeably (Margolin & Gordis, 2000), witnessing interparental violence is distinguished from family violence, which is a much broader construct that may incorporate child maltreatment, sibling abuse, or elder abuse (Corvo & deLara, 2010).

Notably, on the continuum of interparental violence, verbal aggression is highly problematic because it is often more widespread and repetitive than physical or sexual aggression (Schumer & Leonard, 2005), and can be a precursor for these more severe forms of violence (O'Leary, 1999). Additionally, even in the absence of other forms of interparental violence (e.g., physical and sexual) and after controlling for the effects of child maltreatment, gender, and age (Baldry, 2003), verbal aggression can still have major negative consequences on youth psychological outcomes (Evans, Davies, & DiLillo, 2008). However, researchers have not explored whether there is a *primary* relationship between interparental violence in the form of verbal aggression and youth sexual activity.

### Psychological Symptoms as a Potential Mediator

Several studies provide evidence for a robust relationship between witnessing VPA and a number of psychological problems, including anxiety, depression, aggression, and posttraumatic stress disorder (PTSD) symptoms (for reviews see Holt, Buckley, & Whelan, 2008). These findings are not surprising, given that witnessing VPA can threaten primary assumptions of the home as a place of safety (Margolin & Gordis, 2000).

Psychological symptoms have often been found to influence a number of youth deficits. For instance, results have shown that psychological problems (e.g., PTSD symptoms, anxiety, withdrawal, and aggression) mediate the relationship between community violence exposure and school success (Voisin, Neilands, & Hunnicutt, 2011). Similarly, other research has provided evidence that psychological symptoms such as those from PTSD, mediate the relationship between sexual trauma and substance abuse (Lang et al., 2003). Therefore, when exploring the potential relationship between witnessing VPA and sexual activity, it is highly plausible that psychological symptoms may also mediate this relationship.

### Conceptual Underpinnings

The hypothesized relationship between witnessing VPA and sexual activity can be supported by developmental perspectives. VPA within the home may predispose youth to higher levels of psychological stress (e.g., depression, anxiety, and PTSD symptoms (Holt, Buckley, & Whelan, 2008). Additionally, children who are exposed to ongoing parental discord may develop poor or insecure attachment to caregivers, which may also heighten their vulnerability for developing psychological problem symptoms (Margolin & Gordis, 2000). Alternately, parents who are exposed to verbal aggression may be so distracted by their own distress that they may be unable to help their youth cope and make sense of such aggression

when it occurs within the home, which may exacerbate psychological sequelae among youth. Researchers have long speculated that persons with uncontrolled psychological symptoms may use sex as a means of coping (Meade & Sikkema, 2005; Shrier, Harris, & Beardslee, 2002). Consequently, youth who experience psychological symptoms may initiate sex as a way to alleviate such distress.

### Contributions of this study

This study contributes to the extant literature in several important ways. First, no studies to date have focused on the interrelationships among witnessing VPA, psychological problems, and sexual activity, or applied this examination to African American adolescents who are at high risk for STIs and HIV acquisition (Centers for Disease Control and Prevention, 2010).

Second, prior studies of youth sexual activity have mostly focused on single risk factor without adequate consideration for the co-occurrence of multiple factors and how they may interrelate (DiClemente et al., 2007). Consequently, narrow conceptual approaches limit our ability to clarify the relative significance or interrelationships of various risk factors. For instance, it has already been well established that youth who witness high levels of IPV are vulnerable to experiencing psychological problems (Holt, Buckley, & Whelan, 2008) and that family stress is related to risky sex (Voisin, 2005). However, it remains unknown whether psychological symptoms influences the potential relationship between witnessing VPA and youth sexual activity.

Third, there is increasing recognition that pathways to risk can sometimes be gendered (Dembo, Belenko, Childs, Greenbaum, & Wareham, 2010, Voisin, Neilands, & Hunnicutt, 2011). Additionally, during adolescence males and females may feel heightened pressure to perform more gender-scripted behaviors (Dembo, Belenko, Childs, Greenbaum, & Wareham, 2010). More specifically, some research has shown that males often display more externalizing symptoms, and females greater internalizing symptoms, in relation to family and community stressors (Margolin & Gordis, 2000). However, these gendered trends are not always consistent. For instance, recent findings have reported that among African American adolescents, in response to community violence exposures, females reported higher levels of externalizing behaviors (e.g., anxiety and aggression) compared to males (Schiff & McKay, 2003). Additional research can help us to better understand what conditions some typical gendered responses may vary.

When examining the interrelationships among witnessing VPA, psychological symptoms, and sexual activity among youth, several variables such as age, gender, and socioeconomic status should be considered. At younger ages, youth may still be individuating from parents, and therefore may more likely perceive interparental violence as a personal threat to themselves (Edmond, Fitzgerald, & Kracke, 2005). Additionally, sexual activity increases with age (Cavazos-Rehg et al., 2009) and males tend to engage in sexual intercourse earlier and more often than females (Cohen et al., 2002). Furthermore, living in low resourced communities may contribute to interparental stress and psychological symptoms (Wauchope & Straus, 1990) and may contribute to ecological niches which may advance particular behavioral outcomes. Therefore, in this study, we examined three primary questions: 1) whether witnessing VPA was related to sexual activity; 2) if this relationship was mediated by psychological symptoms; 3) and whether relationships would be gendered, controlling for the potential effects of age and socioeconomic status.

## METHOD

### Participants and Setting

In April 2006, 20 trained research assistants (master's and doctoral-level students) recruited prospective participants from a representative high school in a large Midwestern city. The overwhelming majority of students attending this school (80%) were African American. Research assistants distributed parental permission forms to approximately 673 students who identified themselves as African American (ages 13 to 19) in 25 homeroom classes. Students were eligible for study participation if they self identified as African American, were between the ages of 13 and 19 years, were attending regular high school classes (i.e., non-special education classes), returned signed parental consent forms, and provided assent prior to completing the survey.

The study achieved an 83% participation rate (N=563) based on the number of students who met eligibility criteria. Data collection occurred within a two-week period. The questionnaire was written for a fifth-grade reading level. Participants were paid \$10.00 for completing the survey, which was administered in a small school auditorium and took no more than 40 minutes to fill out. No students reported any adverse reactions in relation to answering study questions. Institutional Review Board approval was obtained from the University of Chicago, and Chicago Public School regional office.

### Measures

*Covariates assessed were age, gender, and socioeconomic status (i.e., do you qualify for free school lunch?).*

*Witnessing VPA* was assessed by the Revised Conflict Tactics Scale (CTS) (Straus, 1979). Two items asked participants the number of times they witnessed their mother argue with a partner, or heard her yelling or screaming with her partner. Items were measured on a 7-point scale (0= never to 6= six or more times) and summed to create the VPA measure (range 0–12). The correlation between the two items was .92. The witnessing VPA scale was multimodal, with a preponderance of respondents (53.5%) reporting no VPA (0; n = 102; 18.5%) or the maximum amount of aggression (12; n = 193; 35%). Therefore, witnessing VPA was categorized into three dummy variables denoting witnessing no (VPA score = 0), moderate (VPA score ranged from 1 to 11), and high (VPA score = 12) levels of verbal aggression. This classification is consistent with the treatment of scales in prior investigations (Fullilove, Fullilove, Bowser, & Gross, 1990; Voisin, 2003, 2005).

*Psychological distress* symptoms within the last 6 months were assessed using four subscales to measure current PTSD symptoms, internalizing symptoms such as anxiety and withdrawal, and externalizing symptoms such as aggression. PTSD symptoms were assessed using the University of California at Los Angeles's PTSD Reaction Index--Adolescent Version (Saltzman, Pynoos, Steinberg, & Layne, 2001). The self-report index measures the frequency of PTSD symptoms on a 5-point scale ranging from 0 (*none of the time*) to 4 (*most of the time*). For example, one of the questions reads, "I watch out for danger or things that I am afraid of." This measure was scored on a continuous scale. The alpha coefficient was .82.

*Internalizing symptoms* (e.g., anxiety/withdrawal) and externalizing symptoms (e.g., aggression) were measured using the Youth Self Report (YSR) survey. The 113-item measure is the self-administered version of the widely used Child Behavior Checklist (Achenbach, 1991). Respondents indicated how current a particular behavior has been for them by responding on a 3-point scale ranging from 0 (*not true*) to 2 (*very true*). Internalizing symptoms are measured in two ways: 13 items summed for anxiety and

depression and 7 items summed for withdrawal and depression. Seventeen items are summed for externalizing aggressive symptoms. Each dimension is scored on a continuous scale. The items “I cry a lot,” “I would rather be alone than with others,” and “I get in many fights” are examples of anxiety, withdrawal, and aggression questions, respectively. The alpha coefficient for anxiety was .78. The alpha coefficient for withdrawal was .66 and the alpha coefficient for externalizing symptoms was .80.

*Sexual activity* was assessed by one item: 1) Have you ever had sex? This was defined in the survey as ever having had *voluntary* penetrative vaginal sex with a person of the opposite sex.

## Data Analysis

Analyses were conducted in SAS version 9.2. Initial analyses described the characteristics of the sample via one-way frequency tables and measures of central tendency. Following initial analyses, we computed correlations among all major study variables. We compared witnessing VPA, psychological symptoms, and sexual activity by gender using t-tests for continuous variables and chi-square tests for proportions. All models controlled for age and gender because of their association with sexual activity. We did not control for socioeconomic status because it was not associated with gender, any of the psychosocial problems, or witnessing VPA.

We tested whether the association between witnessing VPA and sexual activity was mediated by psychological symptoms in a multiple pathway model, as outlined by MacKinnon and colleagues (MacKinnon, Fairchild, & Fritz, 2007). A series of regression models (linear regression for continuous outcomes and logistic regression for dichotomous outcomes) were developed to examine associations between witnessing VPA, psychosocial symptoms, and sexual activity. Bias corrected bootstrap confidence intervals using 5000 replicates were calculated around the point estimates for the total and individual indirect effects. We conducted this analysis on the full sample and stratified the analysis by gender to assess whether different results emerged for males and females.

## RESULTS

Our analytic sample was comprised of youth who identified as African American, between the ages of 13 to 19 and heterosexual. Our survey did assess whether participants identified as heterosexual, homosexual, bisexual or both. However, fewer than five percent of the sample checked a category other than heterosexual. The final analytic sample consisted of 563 urban youth (219 males and 344 females). Mean age was 16.1 (SD=1.2). The majority of males (61%) and females (59%) reported receiving free school lunch. Therefore this study sample was mostly comprised of youth from low income families. However, there were no significant associations between receiving free school lunch and witnessing VPA, gender, or psychological symptoms. Overall findings indicated that more males than females had reported sexual activity (74% vs. 58%,  $p < 0.01$ ). In terms of psychological symptoms, compared to males, females reported higher levels of anxiety/depression ( $M 3.33$  vs.  $2.46$ ;  $p < .01$ ), withdrawal/depression ( $M 4.81$  vs.  $2.57$ ;  $p < 0.01$ ), aggression ( $M 7.81$  vs.  $6.13$ ;  $p < 0.01$ ), and PTSD ( $M 8.23$  vs.  $6.28$ ;  $p < .01$ ). There were no significant differences between females ( $M 6.66$ ) and males ( $M 6.56$ ) in exposure to VPA.

### Association between Witnessing VPA and Psychosocial Symptoms

Witnessing VPA was associated with a number of psychological problem symptoms. Compared to participants who reported no exposure to VPA, moderate exposure to witnessing VPA was associated with increased levels of anxiety/depression ( $\beta 0.98$ ; 95% CI



0.15–1.82) and aggression ( $\beta$  1.61; 95% CI 0.51–2.72). High levels of exposure to VPA were associated with increased levels of PTSD symptoms ( $\beta$  2.22; 95% CI 0.52–3.92), withdrawal/depression ( $\beta$  0.71; 95% CI 0.04–1.39), anxiety/depression ( $\beta$  1.58; 95% CI 0.71–2.24), and aggression ( $\beta$  3.64; 95% CI 2.49–4.78) (Table 1).

### Exposure to VPA and Sexual Activity

Controlling for age and gender, compared to participants who reported no VPA, participants who reported the highest levels of VPA had almost twice the odds of having reported sexual activity [adjusted odds ratio (AOR) 1.94; 95% CI 1.09–3.26] (Table 1). The association between moderate exposure to VPA and sexual activity was not statistically significant (AOR 1.24; 95% CI 0.72–2.14).

### The Influence Psychological Symptoms on Witnessing VPA and Sexual Activity

A formal test of the indirect effects indicated that the association between witnessing VPA and sexual activity was mediated by aggression, as indicated by the statistically significant indirect effect (effect estimate 0.20; 95% CI 0.07–0.39 for moderate such exposures; and 0.45; 95% CI 0.26–0.74 for high exposure to verbal aggression between parent figures; Table 2). Similar findings were also observed when we stratified the analysis by gender. The association between witnessing VPA and sexual activity was mediated by aggression for both males and females, with PTSD being a significant factor only for females.

## DISCUSSION

Few studies have examined the relationship between witnessing VPA and sexual activity, and none have explored whether that relationship is mediated by psychological symptoms. A principal strength of this study is its focus on a high risk, under-researched, largely low income population, and the integration of individual and contextual risk factors related to sexual activity. Generally, prior research has indicated that males display stress in more externalizing and females internalizing ways (Margolin & Gordis, 2000). In this study, females reported higher levels of both internalizing and externalizing symptoms than did males. However, these findings corroborates other studies which have shown that such trends are not always consistent, especially when participants are primarily African American (Foster, Kuperminc, & Price, 2004; Schiff & McKay, 2003). It is plausible that African American adolescent males may have underreported psychological symptoms because psychological distress is not consistent with prescribed notions of African American boys being “tough,” where such bravado may be necessary for survival in inner-city neighborhoods. This may especially be the case in low income communities which such social scripts may be encouraged and warranted. Alternately, it could be that in response to stressors, female counterparts may report less gender normative responses and more externalizing behaviors because it brings more attention to their distress and signals a cry for help. Although our explanations are plausible, additional research would be needed to clarify these findings and test our assumptions.

Major findings indicated that witnessing VPA was associated with sexual activity and that this relationship was mediated by aggression for both males and females. There are several plausible explanations to support these findings. Adolescents who witness verbal aggression between parental figures and display aggression may try to distract themselves from these difficult emotions with sex. Additionally, studies have shown that aggressive youth are more impulsive and that impulsivity is associated with sexual activity (DiClemente et al., 2007). In contrast, youth who experience internalizing symptoms such as depression and withdrawal may have less positive self-images, which may hinder sexual possibilities. For instance, depressed youth may be less sociable, and may engage in more isolating behaviors

that could limit their exposure to or interaction with potential sex partners. In addition, depression has been shown to suppress sexual desire (Phillips & Slaughter, 2000). It is also possible that depression might infer a greater risk for negative or risky sexual relationships, which were not assessed in this study, and future studies should examine.

Findings also indicated that the relationship between witnessing VPA and sexual activity was mediated by PTSD symptoms only for females. There are some likely explanations for this finding, although future research is needed to clarify this finding. In this study, as well as others (see Foster, Kuperminc, & Price, 2004; Schiff & McKay, 2003), PTSD symptoms were higher among females than males. Of the three PTSD symptom classes (i.e., re-experiencing trauma, hyper arousal, and avoidance) two (i.e., re-experiencing trauma, and hyper arousal) are externalizing in nature (Ozer, Best, Lipsey, Weiss, & Daniel, 2008), and have been commonly linked to impulsivity, which is related to sexual activity (DiClemente et al., 2007).

There were several limitations in our study. We posited that witnessing VPA would be related to increased psychological symptoms and sexual activity, which was supported by the findings. However, many of these relationships may also be bidirectional. For instance, sexual activity may be associated with increased psychological symptoms and with verbal aggression between parents. Therefore, given the cross-sectional nature of this study, we are unable to tease out directionality. However, though cross sectional studies are often criticized for their inability to tease out temporal ordering, they do establish important preliminarily relationships; a contribution which this study offers, which can then form the basis for more costly longitudinal studies. Our findings are also limited by the use of self-reported data, non-probability sampling, and the fact that although our data was drawn from a representative high school, it nonetheless limits the generalizability of these findings to larger groups of African American youth. Additionally, our sample only included youth who identified as heterosexual given that too few participants identified otherwise. In addition our sample was primarily comprised of youth from low income communities. Although we controlled for the potential confounding effects of socioeconomic status, the effects of living in under resourced communities cannot be overstated. We assessed sexual activity but not age of first sexual activity, which would be an important characteristic of future studies. Our measure of exposure to VPA included a limited range of experiences, yet yielded significant outcomes. Future studies would need to explore and control for the effects of a wider range of violence exposures (e.g., child maltreatment and parental physical aggression). Prior findings, however, have shown that after controlling for child maltreatment and major demographics, witnessing VPA was associated with significant youth deficits (Baldry, 2003). Notwithstanding these limitations, our findings have important implications for service delivery to African American youth.

Our findings suggest that witnessing VPA is a reliable proxy for adolescent psychological problems and sexual activity among African American youth. Although all adolescents should be recipients of comprehensive sexual health education, these study findings suggest that adolescents who report witnessing VPA and who display aggressive symptoms may be special targets for such interventions on the part of clinicians and service providers. Findings also suggest that youth service agencies should be trained to understand the co-occurring nature of witnessing VPA, presenting aggression, and sexual activity, so they can more effectively support the development of adolescents who experience all three factors. Providing adolescents who are exposed to witnessing VPA with strategies for constructively channeling aggressive symptoms may reduce longer-term problems related to sexual activity, especially if such activity were to occur at earlier ages.



Additionally, in the U.S., African American youth are three times more likely than white peers to live in poverty (U.S. Department of Commerce, 2010). Residing in low resourced communities can lead to greater risk for family stress and interparental violence and its associated psychological sequelae. Therefore, locating mental and public health services within school settings and other systems of care heavily utilized by African American youth; such as churches which have historically played a pivotal role for this population, are warranted.

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**Table 1**

Direct Effects of Witnessing Verbal Interparental Aggression and Sexual Activity Among African American Youth (N =563)

Dependent variable	Independent variable	Effect Estimate <sup>¶</sup> (OR or OLS regression coefficient)	95% CI
PTSD Symptoms (continuous)	VIPA – moderate	1.11	–0.54, 2.75
	VIPA – high	2.22	0.52, 3.92*
	Age	0.10	–0.48, 0.67
	Male gender	–2.04	–3.26, –0.81**
Withdrawal/Depression (continuous)	VIPA – moderate	0.04	–0.61, 0.70
	VIPA – high	0.71	0.04, 1.39*
	Age	0.03	–0.20, 0.26
	Male gender	–0.73	–1.22, –0.25**
Anxiety/Depression (continuous)	VIPA – moderate	0.98	0.15, 1.82*
	VIPA – high	1.58	0.71,
	Age	0.06	2.44**
	Male gender	–2.15	–0.24, 0.35
			–2.77, –1.52**
Aggression (continuous)	VIPA – moderate	1.61	0.51,
	VIPA – high	3.64	2.72**
	Age	0.14	2.49,
	Male gender	–1.69	4.78**
			–0.24, 0.53
			–2.51, –0.86**
Sexual Activity (dichotomous: yes vs. no)	VIPA – moderate	1.24	0.72, 2.14
	VIPA – high	1.94	1.09, 3.46*
	Age	1.95	1.59,
	Male gender	1.75	2.40**
			1.14,
			2.68**
Sexual Activity (dichotomous: yes vs. no)	Direct effects of VIPA and covariates	1.09	0.61, 1.93
	VIPA – moderate	1.45	0.78, 2.70
	VIPA – high	2.03	1.64,
	Age	1.85	2.52**
	Male gender		1.17,

Dependent variable	Independent variable	Effect Estimate <sup>¶</sup> (OR or OLS regression coefficient)	95% CI
	Direct effects of potential mediators	1.03 0.95	2.94 <sup>**</sup>
	PTSD symptoms	0.91	0.99, 1.07
	Withdrawal/Depression	1.14	0.85, 1.05
	Anxiety/Depression		0.84, 0.99 <sup>*</sup>
	Aggression		1.07, 1.21 <sup>**</sup>

<sup>¶</sup> Direct effect estimates are OLS regression coefficients for continuous outcomes and odds ratios from logistic regression for dichotomous outcomes.

<sup>\*\*</sup> p<0.01;

<sup>\*</sup> p<0.05;

<sup>†</sup> p<0.10

Psychological Symptoms Mediating Witnessing Verbal Interparental Aggression (VIPA) and Sexual Among African American Youth (N =563)

Table 2

Dependent variable (DV)	Psychological symptoms (Psy)	Independent Variable (IV)	Effect of IV on Psy <sup>1</sup>	Effect of Psy on DV <sup>2,3</sup>	Indirect effect of IV on DV Point Estimate (95% CI)
Sexual Activity	PTSD Symptoms	Moderate VIPA	0.96	0.02	0.02 (-0.01, 0.15)
	Withdrawal/Depression		0.04	-0.06	-0.003 (-0.08, 0.05)
	Anxiety/Depression	0.93*	-0.08 <sup>†</sup>	-0.08 (-0.25, 0.001)	
	Aggression	1.56**	0.13**	0.20 (0.07, 0.39)*	
	Total				0.14 (-0.02, 0.34)
Sexual Activity	PTSD Symptoms	High VIPA	2.06*	0.02	0.05 (-0.03, 0.23)
	Withdrawal/Depression		0.71*	-0.06	-0.05 (-0.08, 0.02)
	Anxiety/Depression		1.53**	-0.08 <sup>†</sup>	-0.12 (-0.34, 0.01)
	Aggression		3.58**	0.13**	0.45 (0.26, 0.74)*
	Total				

\*\* p<0.01;

\* p<0.05;

<sup>†</sup> p<0.10

<sup>1</sup> Effect of independent variable on psychological symptoms controlling for age and gender

<sup>2</sup> Effect of psychological symptoms on dependent variable

<sup>3</sup> Controlling for the 2 dummy variables for VIPA, age, and gender