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## Family Violence Exposure and Sexual Risk-Taking Among Latino Emerging Adults: The Role of Posttraumatic Stress Symptomology and Acculturative Stress

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### Abstract

This study proposes that posttraumatic stress symptomology and acculturative stress may further explain the relationship between family violence exposure and sexual risk-taking behaviors among Latino emerging adults ( $N=1,100$ ). A moderated mediation analysis indicated that lifetime rates of family violence exposure were positively associated with sexual risk-taking via posttraumatic stress symptomology, and this mediation significantly varied as a function of acculturative stress. Overall, the findings of the current study underscore a need for a better understanding of how family violence exposure puts Latino emerging adults at risk for aversive health outcomes and suggest the use of an ecological systemic framework that examines the interactions between family, individual, and cultural systems in relation to health risk-taking behaviors.

### Keywords

Child maltreatment; Trauma; Culture; Public health; Cultural processes

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*Latino* is used in the current study to indicate ethnic minority groups within the United States that share a heritage originating from a Spanish speaking country within Latin America.

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Family violence is a major public health concern in the United States (U.S.; White, Koss, & Kazdin, 2011), and research has suggested that Latinos are particularly at risk for experiencing family violence compared to their Caucasian counterparts (Caetano, Field, Ramisetty-Mikler, & McGrath, 2005). Family violence exposure (i.e., observing or being present when family violence occurs) has been linked to an increased vulnerability towards the development of a number of psychosocial pathologies, such as posttraumatic stress symptomology (PTSS), which is a group of symptoms associated with posttraumatic stress disorder, a trauma-related mental health disorder (American Psychiatric Association 2013). Additionally, family violence exposure, along with a range of individual, sociocultural, and economic factors (e.g., gender, socioeconomic status, and nativity status), are identified risk factors for participating in sexual risk-taking among Latinos (Cunningham, Stiffman, & Doré, 1994; Weiss & Tillman, 2009). High rates of sexual risk-taking among Latinos put them at risk for acquiring a host of sexually transmitted diseases (Centers for Disease Control and Prevention 2010; Dariotis, Sifakis, Pleck, Astone, & Sonenstein, 2011; Pflieger, Cook, Niccolai, & Connell, 2013). Rates of sexual risk-taking are notably high during the developmental period between adolescence and adulthood (Wildsmith, Schelar, Peterson, & Manlove, 2010), referred to as emerging adulthood (i.e., ages 18–25; Arnett, 2000).

As the largest and fastest growing ethnic-racial groups in the U.S., Latinos are projected to comprise nearly 30% of the U.S. population by 2050 (U. S. Census Bureau, 2012). This underscores the significance of understanding the sexual risk-taking behavior of emerging adults within this expanding population. With the current study, we aim to contribute to the understanding of the etiology of sexual risk-taking in emerging adult Latinos by examining a model where family violence exposure, PTSS, and acculturative stress are associated to sexual risk-taking.

## Contextual Factors of Sexual Risk-Taking

According to ecological systems theory (Bronfenbrenner, 1977), five interrelated systems interacting on multiple levels of the human ecology influence human development. Bronfenbrenner (1995) discussed these environmental systems as: *microsystem* (context nearest to an individual, such as family), *mesosystem* (interactions between microsystems), *exosystem* (connections between social systems and microsystems), *macrosystem* (the cultural context one lives in), and *chronosystems* (time and historical context). The interactions, or proximal processes, between these systems can be beneficial or detrimental to an individual's development, leading to competence or dysfunction (Bronfenbrenner, 1995). It follows that both environmental- and individual-level factors must be acknowledged to fully understand the influence of family violence exposure on sexual risk-taking for Latino emerging adults. The proposed model focuses on the familial, individual, and cultural systems.

## Family Violence and Sexual Risk-Taking

Research examining the link between family violence and sexual risk-taking specifically among Latinos is scarce. However, research among diverse samples of adolescents (Elliott, Avery, Fishman, & Hoshiko, 2002; Jones et al., 2010; Voisin, 2005), emerging adults

(Cunningham et al., 1994), and adults (Holmes, Foa, & Sammel, 2005; Klein, Elifson, & Sterk, 2007) has indicated that experiences of family violence increase the risk for later sexual risk-taking. Collectively, studies have indicated that experiences of childhood physical maltreatment, sexual maltreatment, emotional abuse, and exposure to family violence increase the risk for future involvement in sexual risk-taking. While research has demonstrated a consistent link between experiences with family violence and sexual risk-taking, the mechanism by which this occurs is less clear. The high risk of family violence exposure (Roberts, Gilman, Breslau, Breslau, & Koenen, 2011) and high rates of certain sexual risk-taking behaviors (CDC, 2010) among Latino populations suggests that the link between family violence exposure and sexual risk-taking may be particularly salient for these growing populations. Therefore, it is important for research to move our understanding forward on how this relationship operates within Latino populations.

### **Family Violence and PTSS**

Among Latinos specifically, the family system has been theorized to play a key role in psychological adjustment (Coll et al., 1996). In fact, the importance of family for Latino youth and emerging adults has been demonstrated empirically (Esparza & Sánchez, 2008; Germán, Gonzales, & Dumka, 2009). For Latinos, then, family violence may have more of an impact on psychological outcomes than for other ethnic groups.

A wide range of evidence exists linking experiences of family violence to a number of aversive psychosocial outcomes, including PTSS. Childhood experiences of physical abuse (Silverman, Reinherz, & Giaconia, 1996), sexual abuse (Marmion & Lundberg-Love, 2008), and exposure to interparental violence (Diamond & Muller, 2004) have all been linked to the development of PTSS in emerging adults. Consistent with such evidence, studies have supported these associations among Latino emerging adults (e.g., Clemmons, DiLillo, Martinez, DeGue, & Jeffcot, 2003). In a study of Mexican American emerging adult females, the findings of Davies, DiLillo, and Martinez (2004) indicated that retrospective accounts of interparental violence exposure were significantly related to lower self-esteem, higher depressive symptoms, and more PTSS. While existing evidence has supported the long-term effects of experiencing family violence on the development of PTSS, the ways in which these symptoms contribute to sexual risk-taking for emerging adults, including Latinos, have yet to be examined.

### **PTSS as a Mediator of the Relationship Between Family Violence and Sexual Risk-Taking**

Existing evidence suggests that emerging adults with certain psychiatric disorders are more likely to participate in sexual risk-taking than their counterparts with no diagnoses. In a study of emerging adults, the findings of Tubman, Gil, Wagner, and Artigues (2003) indicated that sexual risk-taking was significantly associated with increased incidence of affective, conduct, antisocial personality, and substance abuse disorders, but not trauma-related disorders. This finding was inconsistent with parallel studies (Ramrakha, Caspi, Dickson, Moffitt, & Paul, 2000), including those with adults (Holmes, et al., 2005), that support a link between trauma-related disorders and sexual risk-taking. Furthermore,

Tubman et al. 's between-cluster comparisons indicated significant ethnic or cultural divergence in emerging adults' expressions of sexual risk-taking. More specifically, compared to other ethnic groups, Latinos reported the lowest levels of protected sex, which co-occurred with drug use during and after sex.

These findings draw attention to the need for understanding the expression of sexual behavior within specific ethnic minority groups and offer evidence suggesting that PTSS may contribute to our understanding of the link between family violence and sexual risk-taking. Given the evidence suggesting that Latinos are more likely than their Caucasian counterparts to be exposed to family violence (Roberts et al., 2011), that family violence has been linked to PTSS in emerging adulthood (Clemmons et al., 2003; Davies et al., 2004), and that mental health diagnoses have been linked to greater sexual risk-taking in emerging adulthood (Tubman et al., 2003), it follows that PTSS may mediate the link between family violence exposure and sexual risk-taking. Thus, the current study aimed to examine the indirect effect from family violence exposure to sexual-risk taking behaviors through PTSS.

### **Role of Acculturative Stress on PTSS and Sexual Risk-Taking**

Acculturative stress may be broadly defined as an individual's stress response to a perceived opposition towards a lack of acculturation (i.e., host-culture acquisition) or enculturation (i.e., heritage-culture retention; Rodriguez, Myers, Mira, Flores, & Garcia-Hernandez, 2002), and is common among Latino immigrants and later generations (Portes & Rumbaut, 2001). Research has indicated that acculturative stress is influenced by a number of factors, including family functioning (Miranda & Matheny, 2000). Family functioning in the form of support can buffer the effect of acculturative stress on adverse psychological outcomes among Latino emerging adults (Crockett et al., 2007). However, acculturative stress may develop when children of immigrants confront the opposing norms and values of their parents and host-culture (Gil, Wagner, & Vega, 2000; Miranda et al. 2006). Higher levels of acculturative stress have been found to increase vulnerability towards a number of psychosocial pathologies among Latino emerging adults, including anxiety and psychological distress (Crockett et al., 2007; Rodriguez, Myers, Morris, & Cardoza, 2000; Wang, Schwartz, & Zamboanga, 2010). Considering that PTSS includes anxious and negative mood symptoms, it is plausible that higher levels of acculturative stress may contribute to maladjusted behavior associated with PTSS. Despite such evidence, research has yet to examine how PTSS and acculturative stress relate to sexual risk-taking behaviors.

### **The Current Study**

The current study aimed to increase understanding of the effects of family violence amongst Latinos. Research on family violence exposure within ethnic and cultural minority groups is lacking and has failed to consider ethnically-related factors, such as acculturative stress, when examining the impact of family violence exposure on emerging adults. Such cultural factors may moderate the impact of violence for ethnic minorities (Malley-Morrison & Hines, 2007). In this study, we tested a simple mediation model that proposed an indirect effect from lifetime family violence exposure to sexual risk-taking through PTSS among Latino emerging adults. Subsequently, we used a moderated mediation model to test an

interaction effect between PTSS and acculturative stress influencing sexual risk-taking behaviors (see Fig. 1). Because physical maltreatment, gender, nativity status, and income have been shown to be related to the variables under investigation (Silverman et al., 1996; Weiss & Tillman, 2009), each was controlled for in the following analyses. Guided by an ecological framework and existing research, we examined 3 hypotheses: (a) higher frequency of reported family violence exposure will relate to greater sexual risk-taking behaviors; (b) PTSS will mediate the relationship between lifetime reports of family violence exposure and sexual risk-taking such that higher frequency of reported family violence exposure will relate with increased reports of PTSS which, in turn, will be related to greater frequency of sexual risk-taking; and (c) the indirect effect of family violence exposure on sexual risk-taking through PTSS symptomology will be contingent on levels of acculturative stress such that this association will be greater among Latino emerging adults with higher levels of acculturative stress.

## Method

### Participants

Data for the current study were derived from a larger study, the Multi-site University Study of Identity and Culture (MUSIC), which consisted of 10,573 college students from 30 universities across the U.S. (Weisskirch et al., 2013). Given the study aims, the current sample was restricted to 1,100 Latino emerging adults (ages 18–25;  $M=19.71$ ,  $SD=1.71$ ). Participants were predominantly female (74.2%), and the majority of participants were U.S. born (74%). Forty-two percent of participants lived with one or both of their parents, 33.6% lived in their own house/apartment, 23% lived on campus, 0.5% lived in a fraternity/sorority house, and 0.9% reported other living arrangements.

Regarding the current structure of their family of origin, 61.4% of participants' families were intact, 23.1% separated/divorced, and 3% blended; 2.9% of participants reported that their parents never married, 0.5% noted other family form, and 9.1% did not report on family structure. Approximately 21.1% of fathers and 24.7% of mothers were born in the U.S. Breakdown of annual family income was as follows: 30.4% below \$30,000; 27.3% between \$30,000 and \$50,000; 24.3% between \$50,000 and \$100,000; 14.5% over \$100,000; and 3.5% of participants did not know.

### Procedures

The MUSIC data set (Weisskirch et al., 2013) was derived from the following procedures approved by each site's Institutional Review Board. Participants were recruited through printed, emailed, and in-class announcements. Before participating, students read and signed an online consent form explaining the voluntary nature of their participation. Subsequently, participants were allowed to complete an online survey on their own time and were asked to do so in a private setting. Data recruitment sites were diverse with regard to type of institution (i.e., large and small private and state colleges and universities) and setting (i.e., urban/suburban versus college town). The survey took approximately 2 h to complete, and participants received either course credit or were entered into a prize drawing as

compensation for participating. All participants identified themselves as college students within the U.S., and all surveys were completed in English.

## Measures

**Family Violence Exposure**—Two items were adapted from the Traumatic Events Screening Inventory to assess the lifetime frequency of family violence exposure (Ghosh-Ippen et al. 2002). These items (i.e., “Have you ever seen people in your family fighting or attacking each other, shooting with a gun, stabbing with a knife, or beating each other up?” and “Even if they weren’t physically attacking each other, have you ever heard people in your family really yelling and screaming at each other a lot?”) were rated on a binary yes-no scale. Each item corresponded with a question assessing frequency of the reported events (i.e., “If yes, estimate how many times it has happened to you”), which were recoded as 1 (never happened), 2 (once), 3 (two to seven times), and 4 (eight or more times). These items were moderately correlated ( $r=.54, p<.001$ ) and, therefore, averaged to create a final family violence exposure score.

**Posttraumatic Stress Symptomology**—The frequency of PTSS experienced within the 2 weeks prior to assessment was measured using the 17-item Post-traumatic Stress Disorder Symptoms Scale – Self-Report Version (PSS-SR; Foa, Riggs, Dancu, & Rothbaum, 1993). Participants were asked how often they had experienced PTSS within the last 2 weeks (e.g., “feeling upset when you think about or hear about the event”). Items were rated on a scale of 1 (not at all or only one time) to 4 (five or more times a week/almost always) and were summed to create a frequency of PTSS score. The PSS-SR has demonstrated strong internal and test-retest reliability in previous research (Andrews, Brewin, Rose, & Kirk, 2000). For the current study, the scale’s internal consistency using Cronbach’s alpha was .92.

**Acculturative Stress**—Two subscales from the Multidimensional Acculturative Stress Inventory (MASI; Rodriguez et al., 2002) were used to assess levels of acculturative stress. The seven-item Pressure to Acculturate subscale (e.g., “I don’t feel accepted by White Americans”) was used to capture stress related to acculturation (host-culture acquisition), and the four-item Pressure Against Acculturation subscale (e.g., “people look down upon me if I practice American customs”) was used to assess stress related to enculturation (heritage-culture retention). Both subscales were answered on a scale of 1 (strongly disagree) to 5 (strongly agree). To create a final acculturative stress score that reflects participants’ stress related to perceived pressure for and against acculturation and enculturation, we summed together the averages of each subscale ( $\alpha =.89$ ). The MASI has consistently demonstrated strong reliability in research with Latino emerging adults (Basanez, Dennis, Crano, Stacy, & Unger, 2013).

**Sexual Risk-taking**—Six items from the Youth Risk Behavior Surveillance Survey (CDC, 2008) were adapted to assess the frequency of sexual risk-taking behaviors that had occurred in the 30 days prior to the assessment (e.g., “In the last 30 days, how many times have you had sex without using a condom?” and “In the last 30 days, how many times have you had sex while you were drunk or high?”). These items assessed the frequency of behaviors that

are considered to increase the risk of unintended pregnancies or the acquisition of sexually transmitted diseases. Responses were recorded on a 5-point scale ranging from 1 (never) to 5 (11 or more times). Averages were taken to create a final sexual-risk taking score ( $\alpha=.74$ ).

**Experiences of Physical Maltreatment**—A single item was adapted from the Traumatic Events Screening Inventory to assess the lifetime frequency of experienced physical maltreatment (Ghosh-Ippen et al., 2002). Participants were asked to respond on a binary yes-no scale whether they had ever experienced physical maltreatment by a caregiver (i.e., “Have you ever been hit by someone taking care of you so that you had bruises or marks on your body, or so that you were hurt in some way?”). A corresponding question assessing frequency of the reported event (i.e., “If yes, estimate how many times it has happened to you”) was recoded as 1 (never happened), 2 (once), 3 (two to seven times), and 4 (eight or more times).

## Analyses

Our analyses were conducted in sequential steps. First, we examined the distribution of and the bivariate correlations among the study variables (see Table 1). To test our three hypotheses, we used PROCESS (available at <http://www.afhayes.com/>), which utilizes ordinary least squares regression to test conditional processes (Hayes, 2013). Prior to analysis, an expectation-maximization algorithm was used to analyze and estimate missing response patterns and, subsequently, for imputing missing data points (Dempster, Laird, & Rubin, 1977); the expectation-maximization algorithm, in addition to multiple imputation, has been a preferred missing data procedure due to its ability to be less affected by nonrandom missing data patterns (Graham, Hofer, & Piccinin, 1994). To examine the effects of family violence exposure on sexual risk-taking and the mediating effects of PTSS, a simple mediation model was tested, controlling for having experienced caregiver physical maltreatment, gender, and annual income. Unstandardized path coefficients were estimated through ordinary least squares regression, and 5,000 biased-corrected bootstrap resamples based on 95% confidence intervals were used to estimate the total, direct, and indirect effects of our simple mediation model.

Following these steps, we tested our moderated mediation model by introducing acculturative stress to the model, which we predicted would moderate the relationship between PTSS and the frequency of sexual risk-taking (b2-path) such that the association between PTSS and sexual risk-taking would be stronger among individuals who reported high levels of acculturative stress. A significant moderation of a b2-path in a simple mediation analysis would suggest that the strength of a significant indirect effect is now contingent on a proposed moderator, referred to as the conditional indirect effect (Hayes, 2013; Preacher, Rucker, & Hayes, 2007). First, we explored the nature of the interaction between PTSS and acculturative stress in relation to sexual risk-taking by examining the simple slopes of the association between PTSS and sexual risk-taking at one standard deviation above, one standard deviation below, and at the mean of acculturative stress. To test Hypothesis 3, we then used PROCESS and a 5,000 biased-corrected bootstrapping method to estimate the conditional indirect effect of family violence exposure on sexual risk-

taking at values of acculturative stress corresponding to the mean and values at one SD above and below the mean.

## Results

Table 1 presents the descriptive statistics and bivariate correlations between variables used in the following analyses. All study variables were significantly correlated with each other in the expected directions. Reports of family violence exposure were positively associated with reported physical maltreatment ( $r=.52, p<.01$ ), PTSS ( $r=.66, p<.01$ ), acculturative stress ( $r=.38, p<.01$ ), and sexual risk-taking ( $r=.56, p<.01$ ). The association between PTSS and acculturative stress was  $r=.21$  ( $p<.01$ ). Furthermore, greater PTSS ( $r=.72, p<.01$ ) and acculturative stress ( $r=.25, p<.01$ ) were found to be associated with greater sexual risk-taking, with the association between PTSS and sexual risk-taking being particularly strong.

The results of our simple mediation analysis are presented in Table 2. Family violence exposure was positively related to PTSS ( $b=.49, p<.001$ ) and sexual risk-taking ( $b=.10, p<.01$ ), and PTSS was positively associated with sexual risk-taking ( $b=.57, p<.001$ ). Lastly, the final mediation model accounted for a large amount of variance in sexual risk-taking ( $R^2=.73$ ). In support of Hypothesis 1—that family violence exposure would be associated with more sexual risk-taking behaviors—the total effect ( $b=.38, p<.001$ ) and direct effect ( $b=.10, p<.01$ ) of family violence exposure on sexual risk-taking were statistically significant. Consistent with Hypothesis 2—that PTSS would mediate the relationship between family violence exposure and sexual risk-taking—bootstrap results indicated a significant indirect effect from family violence exposure on sexual risk-taking via PTSS ( $b=.28, 95\% \text{ CI } [.24 \text{ to } .33]$ ).

Regarding Hypothesis 3, we expected that the indirect effect of family violence exposure on sexual risk-taking through PTSS would depend on levels of acculturative stress (see Table 3). Findings indicated that acculturative stress significantly related to the frequency of sexual risk-taking ( $b=.07, p<.01$ ). Further, acculturative stress significantly moderated the association between PTSS and sexual risk-taking ( $b=.11, p<.001$ ). The addition of the interaction between PTSS and acculturative stress resulted in a small yet significant increase in the amount of variance accounted for in sexual risk-taking ( $R^2_{\text{change}}=.01, p<.001$ ). We probed the interaction by testing simple slopes at one standard deviation above, one standard deviation below, and at the mean of acculturative stress, and our results reflected the nature of the hypothesized pattern where the association between PTSS and sexual risk-taking increased as a function of elevated levels of acculturative stress (see Fig. 2). Finally, the conditional indirect effects were probed for significance at one standard deviation above, one standard deviation below, and at the mean of acculturative stress. Consistent with Hypothesis 3, bootstrap results indicated that the conditional indirect effects were significant at low (one standard deviation below the mean), medium (mean), and high (one standard deviation above the mean) levels of acculturative stress (see Table 4).



## Discussion

The purpose of the current study was to examine how family violence exposure, PTSS symptomology, and acculturative stress are associated with sexual risk-taking among Latino emerging adults. Guided by ecological systems theory (Bronfenbrenner, 1977), our first hypothesis examined the relationship between family violence exposure and sexual risk-taking behaviors. The use of this ecological model was to highlight the reciprocity of influences between different systems surrounding an individual's development. Controlling for caregiver physical maltreatment, gender, nativity status, and annual family income, we found that higher reports of family violence exposure related to higher frequencies of sexual risk-taking behaviors. This result was consistent with findings from comparable studies on adolescents (Cunningham et al., 1994; Elliott et al., 2002; Jones et al., 2010; Voisin, 2005) and adults (Holmes et al., 2005; Klein et al., 2007; Plotzker, Metzger, & Holmes, 2007). Further, this finding extends the literature by supporting the relation between family violence exposure and sexual risk-taking within a Latino emerging adult sample and underscores the need to consider proximal ecologies, such as the home environment in which Latino emerging adults have developed, especially when explaining sexual risk-taking. This finding also highlights the importance of the family system for sexual risk-taking among Latinos and is in line with existing work that has emphasized the significance of family for the psychosocial adjustment of Latinos (Killoren, Updegraff, & Christopher, 2011). Given the central role of family within Latino culture, scholars should continue to consider the family context when examining sexual risk-taking among Latino emerging adults (Marín & Marín, 1991).

In regard to our second hypothesis, family violence exposure was directly related to sexual risk-taking. It was also indirectly linked through PTSS such that family violence exposure was associated with higher levels of PTSS, which, in turn, were related with more reported sexual risk-taking behaviors. This finding reflects past research that has suggested a positive association between PTSS and sexual risk-taking during adulthood (Holmes, et al., 2005; Plotzker et al., 2007). This finding also indicates that PTSS may help explain the relationship between family violence exposure and sexual risk-taking for Latino emerging adults. It is plausible that PTSS related to family violence exposure may be a proximal risk factor for Latino emerging adults' sexual risk-taking behavior; in view of this, to fully understand sexual risk-taking in Latino emerging adults who have been exposed to family violence, PTSS must be considered. Given the emphasis on family in Latino culture (Marín & Marín, 1991), when this system is disrupted by family violence, the implications for Latino youth's psychological functioning and, in turn, their sexual risk-taking behaviors may be particularly devastating.

Lastly, support was found for our third hypothesis, which postulated that acculturative stress would moderate the indirect effect of family violence exposure on sexual risk-taking through PTSS. As a result, Latino college students who report PTSS from being exposed to family violence may be at an increased risk for sexual risk-taking when acculturative stress is high. Despite the small increase in the amount of variance explained in sexual risk-taking when acculturative stress was introduced into our model, our findings suggest that the sexual risk-taking by emerging adult Latinos who have been exposed to family violence and are

reporting high levels of acculturative stress may reflect attempts to cope with mental health challenges. In other words, given the additional stress of acculturation combined with compromised psychological wellbeing (e.g., more PTSS), these individuals may be externalizing their experienced stress because they lack psychological resources to enact more effective coping mechanisms. Due to the scope of the current study, we can only speculate about the current finding, and further research will be needed to examine the relationships between experiences of family violence, PTSS, acculturative stress, and sexual risk-taking in order to fully understand these complex relationships. Taken together, these results suggest that it is important to consider the interaction of systems at different levels of the human ecology, including cultural contexts, when attempting to explain sexual risk-taking behaviors in Latino emerging adults.

### Limitations and Future Directions

Although the current study contributes to the extant literature on experiences with family violence and adjustment during emerging adulthood, it is not without limitations. First, past research has indicated that the development of PTSS extends beyond a single event and may be a consequence of multiple adversities (Lloyd & Turner, 2003; Margolin & Vickerman, 2007). It was beyond the scope of the current study to examine multiple sources of stress that may have contributed to PTSS. Future research should consider additional adverse events, such as sexual and emotional abuse, in relation to family violence, PTSS, and sexual risk-taking. In addition, participants' age at family violence exposure and PTSS onset were not assessed for in the original study, and, therefore, were not controlled for in this study. Considering the impact of family violence exposure and manifestation of PTSS vary by developmental status of the child (Margolin & Vickerman, 2007), research will need to replicate our findings with samples that have an estimated age at family violence exposure and PTSS onset. Another limitation in the current study was the use of single items to assess experienced family violence; research replicating our findings will need to use commonly supported assessment devices to gain a more complete measure of experiences with family violence. Also, our inability to consider the possible influence of recruitment on our findings is a limitation of the present study. It is possible that participants who had histories of family violence were more inclined to participate or report that information when responding to more passive recruitment strategies such as fliers.

Other limitations were related to the composition of our sample. First, we examined these associations among a sample of Latinos but did not consider the within-group variation that may exist as a function of nationality. Scholars have suggested that when possible, it is important to avoid treating Latinos as a homogenous group (Estrada-Martínez, Padila, Caldwell, & Schulz, 2011); therefore, research will be needed that examines our findings within specific Latino groups. An additional limitation of the current study was that the sample was composed of college students. Future research should examine these associations among community samples of Latino emerging adults, as the generalizability of the current study is limited to Latino college students. Lastly, we could only assume the sequencing of causal order within our model given the cross-sectional nature of the study. Thus, studies that employ longitudinal methods are critical to fully understanding the long-term consequences of family violence exposure on outcomes such as sexual risk-taking.

## Practical Implications

Given the little attention offered to ethnic minorities in family violence research, further studies are needed to examine the links between experiences of family violence, PTSS, cultural processes, and health risk-taking behaviors within specific ethnic minority populations. Along with the findings of the current study, this research will have implications for preventative treatment of sexual health for Latinos who are part of an abusive family system. It also suggests that interventions may benefit from addressing PTSS and acculturative stress in sexual risk-taking prevention efforts with Latino emerging adults who have been exposed to family violence.

**Assessment**—Our findings suggest that it may be advantageous for practitioners to consider stress related to cultural processes when assessing Latinos who have been exposed to family violence and/or are presenting a range of sexual risk-taking behaviors. Several scales exist that specifically measure acculturative stress (for review, see Rudmin, 2009), with one taking a multidimensional approach to assessing the issue (Rodriguez et al., 2002). Practitioners adopting a multidimensional view of acculturative stress within an ecological systems framework may propose questions that assess perceptions of the context and process in which acculturative stress occurs; for example, one may inquire about perceptions of stress related to the divergence and interactions between heritage and receiving cultural practices, values, and identities, in addition to family and community systems.

**Interventions**—Interventions developed to reduce the aversive effects of family violence on children and youth or to reduce sexual risk-taking behavior of youth have not yet considered the influences of acculturative stress and PTSS on the efficacy of their interventions. It may be necessary for interventions aiming to reduce the long-term outcomes related to family violence exposure, specifically sexual risk-taking, to expand their approaches to PTSS and stress related to host-culture acquisition and heritage-culture retention. Future research should examine the influence of attending to PTSS and acculturative stress on interventions aimed at reducing sexual risk-taking in Latino emerging adults.

## Conclusions

Overall, family violence research utilizing ethnic minority samples or examining cultural processes are scant. To our knowledge, the current study is one of the first to empirically support a model of family violence exposure, PTSS, and acculturative stress in relation to sexual risk-taking behavior in Latino emerging adults. In closing, the present study highlights the need for a better understanding of how family violence exposure puts Latino emerging adults at risk for longterm aversive health outcomes and suggests the use of an ecological systemic framework that examines the interactions between family, individual, and cultural systems in relation to health risk-taking behaviors.

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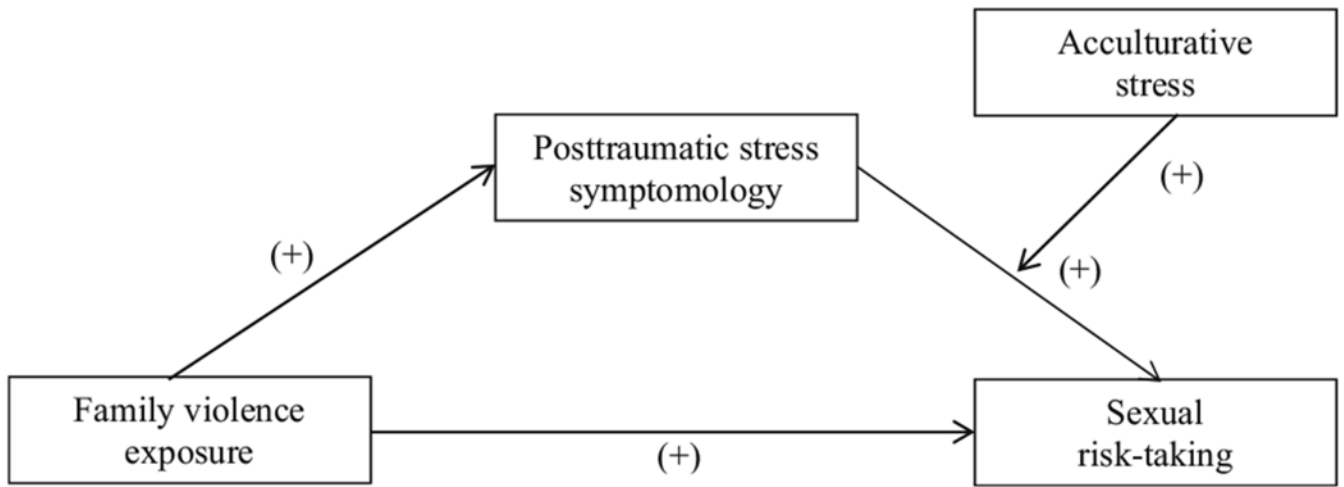
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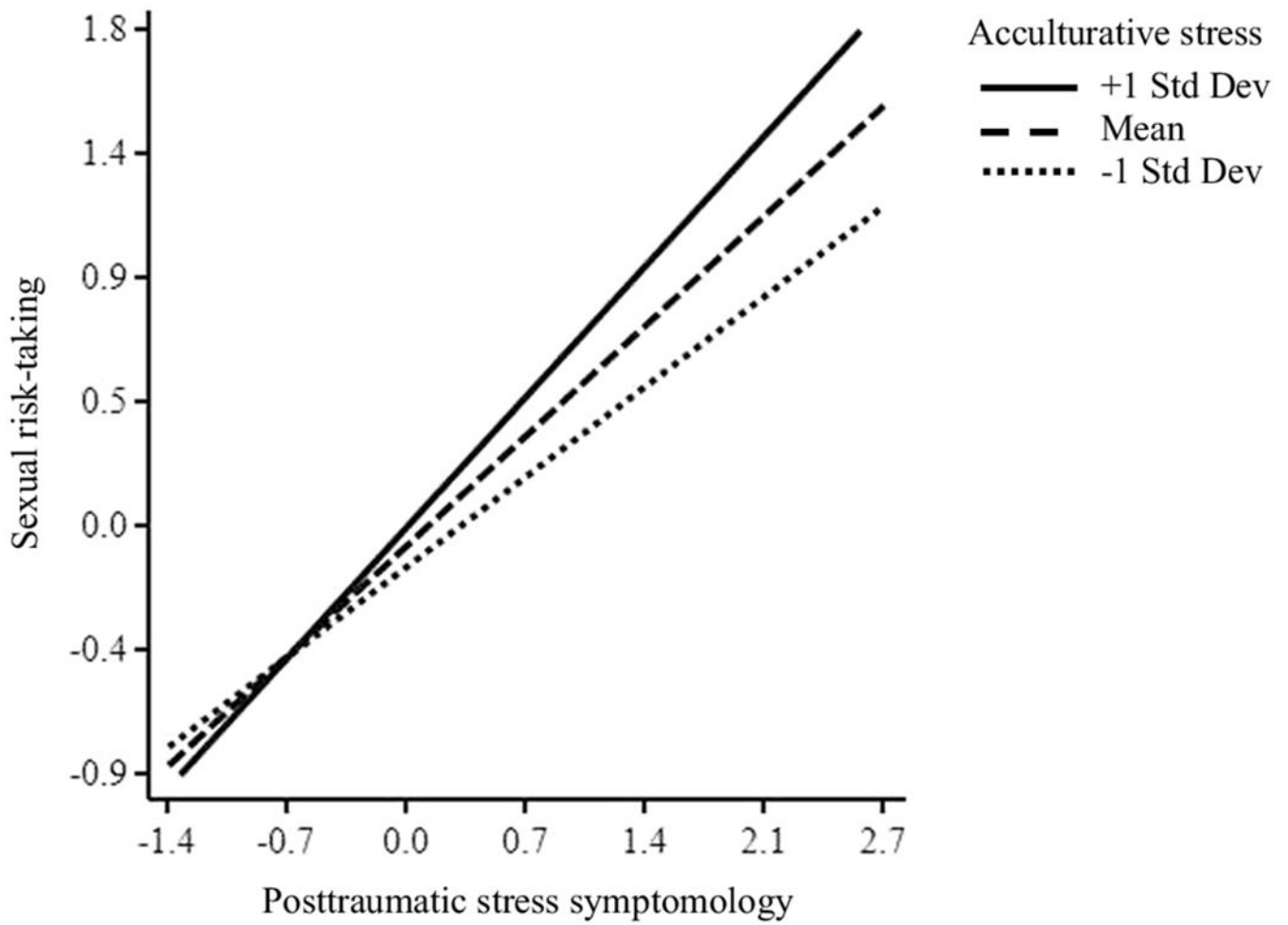
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**Fig. 1.** Conceptual diagram of the proposed moderated mediation model of family violence exposure, posttraumatic stress symptomology, and acculturative stress in relation to sexual risk-taking





**Fig. 2.** The association between posttraumatic stress symptomology and sexual risk-taking at low ( $-1$  *Standard Deviation*), mean, and high ( $+1$  *Standard Deviation*) levels of acculturative stress

**Table 1**  
 Bivariate correlations between study variables and descriptive statistics (n=1,100)

Variable	1	2	3	4	5
1. Family violence exposure	–				
2. Physical maltreatment	.52*	–			
3. PTSS symptomology	.66*	.47*	–		
4. Acculturative stress	.38*	.56*	.21*	–	
5. Sexual risk-taking	.56*	.46*	.72*	.25*	–
Mean (SD)	2.11 (.88)	1.33 (.56)	25.25 (7.19)	4.14 (1.48)	1.36 (.58)
<i>Skew</i>	-.03	.98	.43	.64	.88
<i>Kurtosis</i>	-1.32	-.88	-.41	.01	-1.14

PTSS Posttraumatic Stress Symptomology.

\*  $p < .01$

Posttraumatic stress symptomology as a mediator of the association between family violence exposure and sexual risk-taking behaviors ( $n = 1100$ )

Table 2

Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Posttraumatic stress symptomology				
Gender	.29	.04	7.68	.00
Annual family income	-.49	.04	-11.75	.00
Nativity status	-.18	.03	-6.34	.00
Family violence exposure	.49	.03	18.38	.00
Physical maltreatment	.16	.03	5.88	.00
Sexual risk-taking				
Gender	-.03	.04	-.73	.46
Annual family income	.00	.05	.08	.93
Nativity status	-.00	.03	-.18	.86
Family violence exposure	.10	.03	2.95	.01
Physical maltreatment	.14	.03	4.48	.00
Posttraumatic stress symptomology	.57	.03	17.71	.00
<b>Effect</b>	<b><i>SE</i></b>	<b>95% CI</b>		
Total Effect				
.38	.03	[.32, .44]		
Direct Effect				
.10	.03	[.03, .17]		
Indirect Effect				
.28	.02	[.24, .33]		

*b* unstandardized coefficients, *SE* standard error, *CI* confidence interval; bootstrap sample size=5,000

**Table 3**

OLS regression results for hypothesized moderated mediation model ( $n=1100$ )

Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Posttraumatic stress symptomology				
Gender	.29	.03	9.20	.00
Annual family income	-.49	.03	-13.83	.00
Nativity status	-.18	.02	-7.23	.00
Family violence exposure	.49	.02	19.43	.00
Physical maltreatment	.16	.02	6.62	.00
Sexual risk-taking				
Gender	-.03	.03	-.83	.41
Annual Family Income	.00	.04	.09	.92
Nativity status	-.01	.02	-.35	.73
Family violence exposure	.12	.03	3.95	.00
Physical maltreatment	.07	.03	2.22	.03
PTSS	.58	.03	19.46	.00
Acculturative stress	.07	.03	2.62	.01
Acculturative stress X PTSS	.11	.02	4.74	.00
	<b>R<sup>2</sup> change</b>	<b>F</b>	<b>p</b>	
R <sup>2</sup> increase due to interaction	.01	22.43	.00	

*OLS* Ordinary Least Squares, *b* unstandardized coefficients, *SE* standard error, *F* *F*-value

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**Table 4**

Bootstrap results for conditional indirect effect at low, mean, and high levels of acculturative stress

Acculturative stress	Boot indirect effect	Boot SE	LL 95% CI	UP 95% CI
Conditional indirect effect at acculturative stress= $M \pm 1$ SD				
-1 SD (-1.01)	.23	.03	.18	.29
<i>M</i> (-.02)	.28	.02	.24	.33
+1 SD (.97)	.33	.03	.28	.39

*SE* standard error, *CI* confidence interval, *LL* lower limit, *UP* upper limit, *SD* standard deviation

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