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Sexual Assault Among College Students: Family of Origin Hostility, Attachment, and the Hook-Up Culture as Risk Factors

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Abstract Sexual assault has been recognized as a major public health problem and social concern among college students for several decades. In response to the inadequacies of many universities to effectively address this problem, researchers, policy makers, and the public alike have recently called for greater attention to reducing the high rates of sexual violence against college women. The present study expands on the current literature by investigating familial, individual, and sociocultural risk factors for sexual assault. Specifically, we examine insecure adult attachment styles and the hook-up culture on college campuses as mediators in the relationship between family of origin aggression and sexual assault perpetration by men and victimization among women. Research questions were addressed with a sample of 624 college undergraduates (54 % women). Consistent with hypotheses, results of structural equation modeling indicated that an avoidant attachment style and participation in the hook-up culture accounted for the relationship between exposure to interparental hostility and sexual assault perpetration by men and victimization among women. Further, among women, an anxious attachment style accounted for the relationship between harsh parenting and victimization. These findings have important implications for future research, relationship education programs for parents and young adults, and preventative interventions. For example, parents can learn about the risks of exposing their offspring to hostility and aggression while adolescents and young adults may benefit from relationship education programs that help establish healthy working models of relationships.

Keywords Interparental aggression · Hostile parenting · Insecure attachment · Hooking-up · Sexual assault

Introduction

Sexual assault has been recognized as a major public health problem on college campuses for several decades. Between one-third and one-half of college men admit to perpetrating some form of sexual assault against a woman (Abbey et al. 2001; Simons et al. 2012b), and studies show 50 % of college women report being victims of sexual assault through some form of coercion or outright force (Ullman et al. 1999). Even studies that limit their examination to victimization by force and coercion through impairment with alcohol or drugs find that 19 % of college women have experienced sexual assault resulting in some form of non-consensual sexual contact (Krebs et al. 2007). However, sexual assault involves several tactics used by perpetrators including manipulation, various forms of coercion including impairment through alcohol or drugs, as well as physical force and encompasses a variety of outcomes, ranging from unwanted fondling to completed rape (Basile and Saltzman 2002; Center Against Rape & Domestic Violence, n.d.; National Institute of Justice 2010). Thus, the term *sexual assault* includes behaviors that would be legally defined as rape as well as other forms of non-consensual sexual contact. Further, studies indicate that sexual assault exists on a continuum where perpetrators usually begin with less intimidating strategies (e.g., cajoling, plying the date with alcohol) and gradually escalate the level of force (e.g., verbal threats, physically overpowering)

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when other tactics fail (Felson 1993, 2002). Researchers have called for more work addressing the full range of these behaviors and tactics (Adams-Curtis and Forbes 2004; Fisher et al. 2000).

Despite attempts by universities to prevent and respond more effectively to sexual assault, the high rates of sexual violence among college students indicate that current university policies and procedures are largely insufficient and ineffectual. The inadequacies of many colleges and universities in addressing sexual assault has resulted in increased pressure on these institutions to prioritize efforts aimed at reducing individual, situational, and cultural risk factors for sexual assault on campuses (Wade et al. 2014). This issue has gained increased attention in the national spotlight with the recent explosive investigative report published in *Rolling Stone* which reveals the glaring need for new policies regarding sexual assault on campuses (Erdely 2014). In response, President Obama recently established the White House Task Force to Protect Students from Sexual Assault, and their first report (2014) provides evidence-based guidelines and future directions for preventing and responding more effectively to campus assault and for improving prevention and intervention efforts. One strategy used to create this report was listening to stakeholders around the country, including survivors, parents, university personnel, and activists, to identify common ideas for addressing sexual assault on campuses. While this approach is likely to yield some important information, there remains an increased need to identify distal influences, in addition to proximal influences, that are conducive to sexual assault among college students.

Many studies (e.g. Abbey et al. 2001; Simons et al. 2012b; Yost and Zurbriggen 2006) have examined correlates of the perpetration of sexual violence (e.g., alcohol use, sociosexuality, viewing violence as a legitimate strategy, a history of violence in the family of origin), though there has been less focus on influences of sexual victimization. There are a few studies that are exceptions to this pattern. For example, Nason and Yeater (2012) found that women with high sociosexuality, which is a preference for casual sexual encounters, were less effective at responding to hypothetical situations that were considered high risk for the occurence of sexual assault. This is particularly salient to a college population because in recent years, hooking-up, a specific type of casual coupling, has grown in popularity among college students. Hooking-up has been defined as a "physically intimate encounter ranging from kissing to intercourse that occurs without the expectation of future physical encounters or a committed relationship" (Owen et al. 2010, p. 653). Around 70 % of college men and women report they have ever experienced a hook-up (Paul and Hayes 2002), and this sexual practice is so widespread and normative that researchers discuss this phenomenon as a hook-up culture. Researchers have also recognized that the hook-up culture may be conducive to the occurrence of sexual assault (Adams-Curtis and Forbes 2004; Flack et al. 2007), especially since it involves common risks for sexual assault including high sociosexuality, casual and spontaneous sexual activity, and high rates of alcohol use (Barriger and Vélez-Blasini 2013; Paul and Hayes 2002).

While there have been a number of excellent qualitative studies that provide valuable insights into the hook-up culture (e.g. Paul and Hayes 2002), few quantitative studies (e.g. Flack et al. 2007) have addressed hooking-up as a risk factor for sexual assault (Adams-Curtis and Forbes 2004). There is also a gap in the literature related to individual and family of origin characteristics that may help explain an individual's involvement in both hooking-up and sexual assault (see Simons et al. 2012b for an exception). Thus, there is a need to examine the relationships between interparental hostility and harsh parenting, adult attachment styles, aspects of the hook-up culture, and sexual assault among college men and women. Understanding such intrapersonal and sociocultural risk factors for sexual assault perpetration and victimization among college students is important for creating effective intervention and prevention efforts aimed at reducing rates of sexual assault on college campuses.

The Influence of Harsh Parenting and Interparental Hostility

According to the intergenerational transmission of violence hypothesis, hostile and physically harsh parenting and/or aggression between caregivers teaches children that violent and coercive behaviors are acceptable and even normal in the context of an intimate relationship (Simons et al. 2012a; Straus et al. 2014). Children who grow up in families in which hostility and aggression are common are likely to either engage in or be exposed to these same types of behaviors in their own relationships. For example, Simons et al. (2012b) recently demonstrated that harsh physical discipline predicts college men's sexual assault perpetration and hostile, rejecting parenting from a father increases college women's likelihood of victimization. In relation to interparental conflict, Siegel and Williams (2009) reported that witnessing interparental violence and receiving harsh discipline in childhood were both more prevalent among female victims of adult sexual violence compared to non-victims. While there is evidence that interparental violence is related to the perpetration of other aggressive behaviors among adolescents and young adults, such as partner violence (Simons et al. 2012a; Sutton et al. 2014), no study to our knowledge has examined the relationship between interparental hostility and sexual assault perpetration. Given that it is unlikely that these family of

origin factors will explain all of the variance in sexual assault, it is important to identify possible mediators in the relationship between family of origin hostility/violence and sexual assault.

Insecure Attachment

Attachment theory has also been used to explain the connection between family of origin experiences and sexual behaviors in adulthood. According to attachment theory (Bowlby 1973), responsive and warm caregiving experiences are necessary for a child to develop a secure attachment style and positive internal working models of relationships. However, when parents are hostile or physically aggressive toward their children or one another, children are likely to develop an insecure style of attachment. This can come in the form of either an anxious attachment style, in which individuals fear rejection and crave high levels of emotional closeness and reassurance within adult intimate relationships, or an avoidant attachment style, in which individuals distrust partners and reject intimacy and closeness (Hazan and Shaver 1987).

Attachment styles also impact an individual's sexual behaviors and attitudes. For instance, researchers have demonstrated that an avoidant attachment style is negatively related to having sex characterized by emotional closeness, nurturance, and feelings of passion and positively related to a high degree of sociosexuality and having sex primarily for physical pleasure (Davis et al. 2004; Gentzler and Kerns 2004). Further, avoidantly attached women report having more unwanted sexual experiences than do securely attached women (Gentzler and Kerns 2004), and avoidantly attached men are more likely to use coercive sexual behaviors than men with other attachment styles even when controlling for antisociality and aggression (Smallbone and Dadds 2001). Researchers suggest that this relationship is likely due to an opportunistic approach to sex among avoidant men and a desire to evade emotional conversations about intimacy among avoidant women (Gentzler and Kerns 2004; Smallbone and Dadds 2001). Thus, avoidantly attached individuals likely find non-committal hook-ups appealing given their sexual motivations (Davis et al. 2004). In turn, involvement in and a preference for casual or unplanned sex (including hooking-up) is related to a greater frequency and severity of sexual assault victimization and perpetration (Flack et al. 2007; Ullman et al. 1999; Yost and Zurbriggen 2006).

On the other hand, researchers have reported that anxiously attached individuals are more likely to have sex for reassurance about their current relationships, for feelings of emotional closeness, and to avoid their partner's negative affect (Davis et al. 2004). Further, anxiously attached women report they are more likely to capitulate to unwanted sex with a partner than secure women (Gentzler and Kerns 2004), and anxiously attached men report pressuring their long-term partner for sex more so than securely attached men (Brassard et al. 2007). These behaviors are likely accounted for by a fear of rejection or abandonment by a partner among both anxiously attached victims and perpetrators. As sexual motives among anxiously attached individuals are related to establishing commitment and intimacy with a partner and reassurance for themselves, it is unlikely that casual hook-ups account for the relationship between anxious attachment and sexual assault.

The Hook-Up Culture and Sexual Assault

The hook-up culture is characterized by particular attitudes and behaviors related to sexual encounters as well as high levels of alcohol use. Specifically, sociosexuality and engaging in sexual encounters without the expectation of future commitment or interaction with the hook-up partner are common. Researchers have demonstrated that a high level of sociosexuality is predictive of a greater frequency of hook-ups and involvement in a greater range of sexual behaviors during hook-ups (Barriger and Vélez-Blasini 2013; Katz and Schneider 2013). Hooking-up generally involves unplanned sexual contact with an acquaintance in social settings such as parties or bars (Paul and Hayes 2002), so individuals with high levels of sociosexuality are likely more open to participation in this type of sexual situation. High sociosexuality is also a well-established predictor of sexual assault perpetration among men (Yost and Zurbriggen 2006). Researchers have theorized that sociosexuality among men results from traditional male socialization that encourages an impersonal, opportunistic approach to sex as well as aggression and domination in sexual relationships (Yost and Zurbriggen 2006). Empirical evidence shows that sociosexuality is negatively associated with egalitarian gender roles and positively related to rape myth acceptance, further demonstrating that sociosexuality is part of the constellation of gender attitudes that are anchored in sexist cultural values (Walker et al. 2000; Yost and Zurbriggen 2006). Among women, sociosexuality may increase vulnerability to sexual victimization. For instance, women with unrestricted sociosexuality report more experiences of unwanted sexual come-ons and are less adept at responding effectively to high-risk sexual situations (Nason and Yeater 2012; Sakaguchi and Hasegawa 2007). These findings suggest that central components of the hook-up culture may increase a woman's contact with predatory men.

High levels of alcohol use are also a well-known aspect of the college hook-up culture. National research shows that around two-fifths of college students engage in binge

drinking (Wechsler et al. 2002), and alcohol use is consistently associated with hooking-up (Barriger and Vélez-Blasini 2013; Ven and Beck 2009). College students describe alcohol use as a typical part of the hook-up experience, as alcohol lowers inhibitions and allows students to approach potential hook-up partners (Paul and Hayes 2002; Ven and Beck 2009). Alcohol use is also highly predictive of sexual assault victimization and perpetration (Abbey et al. 2001; Ullman et al. 1999) and is often cited as a major aspect of the college rape culture (e.g. Armstrong et al. 2006; Wade et al. 2014). According to Abbey (2002), alcohol consumption is conducive to sexual assault for several reasons including increased misperception of sexual intent and increased aggressiveness among men and impaired communication of sexual intent and impaired ability to resist and perceive risk among women. In addition to being unplanned and being initiated in social settings where alcohol is prevalent (e.g. parties, bars), hooking-up also involves a lack of communication about sexual intent (Paul and Hayes 2002, p. 645). Alcohol use prior to a sexual encounter that is already highly ambiguous is associated with coercive sexual experiences (Burnett et al. 2009, p. 475) and may provide men an excuse for using pressure or aggression to obtain sex (Abbey 2002, pp. 122–124; Paul and Hayes 2002, p. 655). Further, impaired judgment or being taken advantage of because of alcohol use were among the most cited reasons for the occurrence of unwanted sexual activity during a hook-up among college students (Flack et al. 2007). In sum, the unplanned, casual, and ambiguous nature of the hook-up experience provides an opportunity for men to use pressure or aggression in sexual encounters with female partners, and this may be especially likely when high levels of alcohol use are involved.

One widely used explanation for the high rates of sexual assault on college campuses is the rape culture hypothesis (Armstrong et al. 2006; Buchwald et al. 1993; Burnett et al. 2009). This hypothesis holds that college campuses are environments that support the sexual domination of men over women through certain behaviors, such as binge drinking and casual sex, and attitudes towards sexuality, such as the acceptance of rape myths and an expected norm of high or unrestricted sociosexuality. We argue that the hook-up culture on college campuses represents a constellation of behaviors and attitudes, including high levels of sociosexuality and alcohol use in addition to hook-up behavior, which fosters sexual assault by supporting the power differential of men over women. Researchers have demonstrated that men may benefit more from hook-ups than women; for instance, men report more positive and fewer negative emotional reactions to hooking-up (Owen et al. 2010) and they express greater preference for hooking-up than for dating compared to the preferences of women (Bradshaw et al. 2010). Despite recent evidence that unwanted sexual experiences are elevated among college students who have hooked-up (Flack et al. 2007), the hook-up culture has not been examined as a potential context for fostering a rape culture on college campuses. On the other hand, some researchers have suggested that participation in hooking-up or casual sex is a positive and empowering experience for women and does not necessarily stem from sexism and male domination (Vrangalova and Ong 2014; Wentland et al. 2009). For instance, Vrangalova and Ong (2014) recently demonstrated that individuals with a high level of sociosexuality experience few consequences to their psychological well-being as a result of hooking-up. Thus, there is a need for research examining whether the hook-up culture is a venue in which empowering sexual experiences are likely or whether it is an environment that perpetuates a sexual double-standard and increases the risk of sexual assault by men.

The Current Study

Based on the literature and theoretical paradigms reviewed, we have several hypotheses. First, we expect that both harsh parenting and interparental hostility are associated with increased perpetration of sexual assault by men and victimization for women. It is likely to be the case, however, that this relationship is at least partially mediated by other variables. Second, we hypothesize that harsh parenting and interparental hostility will each be positively related to both forms of insecure attachment, avoidant and anxious, for men as well as women. Further, because anxiously attached individuals often seek to establish acceptance from a partner through sex, we expect anxious attachment to be unrelated to engagement in the hook-up culture and directly related to sexual assault perpetration by men and victimization for women. This hypothesis is bolstered by research showing that anxiously attached individuals are no more likely to approve of casual sex and do not have elevated rates of casual sex involvement compared to secure individuals (Gentzler and Kerns 2004). We also expect that anxious attachment will mediate the relationship between the family of origin variables and sexual assault. Next, because avoidantly attached individuals eschew emotional closeness and intimacy, we expect an avoidant attachment style will be related to greater engagement in the hook-up culture given its focus on sex without commitment. Additionally, avoidant attachment style is expected to mediate the relationship between the family of origin variables and engagement in the hook-up culture. Last, due to the norms of sociosexuality and alcohol use associate with the hook-up culture, we expect engagement in the hook-up culture will be a positive,

significant predictor of men's perpetration of sexual assault as well as women's victimization. Engagement in the hook-up culture, in turn, is expected to mediate the relationship between an avoidant attachment style and both perpetration and victimization. Because family structure, socioeconomic status, and ethnicity are associated with various constructs in our model (e.g. Gross et al. 2006; Jones-Sanpei et al. 2009; Paxton et al. 2007; Simons et al. 2012a), we will control for these variables to account for possible confounds.

Method

Participants

We surveyed 711 undergraduate students enrolled in five social science classes (e.g. Family Studies, Sociology, Consumer Economics) attending a large university in the southeast during the Fall semester of 2012. Our sample represents 2.7 % of all undergraduates attending the university. The sample consists of 385 women (54.1 %) and 326 men (45.9 %). Most participants were Caucasian (92.4 %), and all other participants were African-American (7.6 %). Approximately 95 % of the respondents were under age 25. According to the university's office of Undergraduate Admissions, gender, racial, and age demographics are consistent with the student body of this institution. The majority of participants come from families in which parents have been continuously married (72.7 %). For the participants whose parents were not married, 14.4 % had divorced, remarried parents, 6.2 % had divorced, unmarried parents, 4.6 % had one or more parent who is deceased, and 2.1 % had parents who were never married to one another. Participants reported that their mean total family income was approximately $100,000 annually.

Procedures

After obtaining approval form the IRB, recruitment took place during class one week prior to the administration of the questionnaire. Prospective respondents were told about the topics covered in the study and the format of the questionnaire, that participation was voluntary and anonymous, and that they would receive a small amount of extra credit as compensation for participation. A pencil-and-paper survey was used and questions covered several topics including experiences in the family of origin, romantic relationships, risky behaviors (e.g., substance use), and attitudes about dating, sexuality, and marriage. On the day of data collection, participants provided informed consent prior to the implementation of the survey and were told that they could discontinue the survey at any time. Students who did not wish to participate were offered an alternative extra credit assignment but all students who were present on the day that the survey was administered elected to participate in the survey. All students were able to complete the survey during the normal class time (1 h and 15 min). Due to the personal nature of some questions, the survey was administered like an exam (e.g. no talking, no looking around) to protect each participant's privacy. After dropping incomplete surveys from the analysis, the final sample for our study consisted of 624 students (337 women and 287 men) representing a response rate of 88 %. Our final sample did not differ from the full sample in terms of age, race, sex, religious preference, family's income, or parent's marital status.

Measures

Interparental Hostility

The measure for interparental hostility was adapted from hostility and warmth subscales of the instruments developed for the Iowa Youth and Families Project (Conger et al. 1992). *Interparental hostility* was assessed using a four-item scale to indicate aggressive interactions between parents during the time the participant was a child living at home. (i.e. "criticize each other's ideas," "shout or yell at each other because they were mad", "hit, push, shove, or grab each other," and "insult or swear at each other"). Response categories were 0 = *never*, 1 = *not too often*, 2 = *about half the time,* 3 = *fairly often*, and 4 = *always*. *Interparental warmth* was assessed using a four-item scale to indicate loving interactions between parents during the time the participant was living at home (i.e.. "listened carefully to each other's point of view," "acted loving and affectionate toward one another," "had a good laugh with each other about something that was funny," and "said 'I love you' to each other"). The response format for the items was 0 = *never*, 1 = *not too often*, 2 = *about half the time,* 3 = *fairly often*, and 4 = *always*. Interparental warmth items were reverse coded then summed with interparental hostility to form an overall scale of interparental hostility with high scores indicating greater hostility and lower warmth ($\alpha = .81$ for men, $\alpha = .86$ for women).

Harsh Parenting

The measure for harsh parenting by mothers and fathers was adapted from warmth and hostility items and harsh parenting items developed for the Iowa Youth and Families Project (Conger et al. 1992). First, *maternal hostility* was assessed using a three-item scale to indicate how often hostility in interactions between the participant and a

female caregiver occurred during the time the participant was growing up. Participants were asked, "While you were growing up at home, how often did your mom…." "criticize your ideas," "shout or yell at you because she was mad," and "insult or swear at you or call you bad names". Response categories were 0 = *never*, 1 = *not too often*, 2 = *about half the time,* 3 = *fairly often*, and 4 = *always*. *Maternal warmth* was assessed using a four-item scale to indicate loving interactions between the participant and a female caregiver during the time the participant was growing up. Again, participants were asked "While you were growing up at home, how often did your mom…" "listen carefully to your point of view," "act loving and affectionate toward you," "have a good laugh with you about something that was funny," and "tell you she loves you". The response format for the items was 0 = *never*, 1 = *not too often*, 2 = *about half the time,* 3 = *fairly often*, and 4 = *always*. The same items were used for paternal hostility and warmth. *Harsh punishment* was assessed using a four-item scale to indicate frequency of physical and harsh punishment between the participant and a caregiver while growing up. Participants were asked "When you were a child, did parent, stepparent, or foster parent ever do any of the following?" including "throw something at you in anger," "push, shove, or grab you in anger," "slap or spank you with their hand," and "hit you with an object". The response format or these items was 0 = *Never,* 1 = *Once,* 2 = *Sometimes,* 3 = *Often*, and 4 = *Always.* Parental warmth items were reverse coded and summed with parental hostility and parental harsh punishment items to create an overall scale of harsh parenting with high scores indicating greater harshness and less warmth ($\alpha = .81$ for men, $\alpha = .82$ for women).

Attachment

The measure for attachment was adapted from the Experiences in Close Relationships-Revised instrument (Fraley et al. 2000). Participants were asked how often each statement was indicative of their attitudes about romantic relationships in general. *Avoidant attachment* was assessed using a five-item scale. Examples of items include "I don't like showing my partner how I feel deep down," "I find it difficult to allow myself to depend on romantic partners," and "When my partner starts to get close to me I find myself pulling away." The response format for the items was 0 = *never*, 1 = *not too often*, 2 = *about half the time,* 3 = *fairly often*, and 4 = *always*. Responses were coded so that high scores indicate greater avoidance ($\alpha = .85$ for men, $\alpha = .90$ for women). *Anxious attachment* was assessed using a five-item scale. Examples of items include "I worry about being abandoned or rejected by my partner," "My desire to be very close sometimes scares partners away," and "I worry a fair amount about losing my partner." The response format for the items was 0 = *never*, 1 = *not too often*, 2 = *about half the time,* 3 = *fairly often*, and 4 = *always*. Responses were coded so that high scores indicate greater anxiety ($\alpha = .82$ for men, $\alpha = .83$ for women).

Hook-Up Culture

A latent variable was created for hook-up culture using the following indicators: sociosexuality, alcohol use, and hook-up frequency. Confirmatory factor analyses were conducted to evaluate the factor structure of the hook-up culture latent factor using robust maximum likelihood (MLR) model estimation. All indicators evidence large standardized factor loadings ($\lambda > .6$) for both men and women, and all indicator variables adequately measured the latent variable ($p < .001$).

Sociosexuality

Affinity for unrestricted sex was assessed using four-items adapted from the Attitudes about Hooking-Up Scale created by Owen et al. (2010). Examples of items include "I would have sex with someone that I had no plans to ever talk to again" and "I think it is okay to have friends with benefits." Response categories were 1 = *Strongly Disagree,* 2 = *Moderately Disagree,* 3 = *Moderately Agree,* and 4 = *Strongly Agree.* Items were summed to form the final scale, with higher scores indicating more permissive sexual beliefs ($\alpha = .76$ for men, $\alpha = .81$ for women).

Alcohol Use

Alcohol use during the past 12 months was measured using two items from the Alcohol Use Disorders Identification Test (AUDIT; Babor et al. 2001). This scale was developed by the World Health Organization to screen for excess drinking and problems due to alcohol use. The items used in the present study were specifically selected to screen for hazardous alcohol use. First, participants were asked "How often do you have a drink containing alcohol?" Response categories were 0 = *Never*, 1 = *Once a month or less*, 2 = 2–4 *times per month,* 3 = 2–3 *times a week,* and 4 = 4 *or more times a week.* Second, participants were asked "Thinking about a typical night when you go out drinking with friends, how many drinks do you typical consume?" Response categories were 0 = *I don't drink,* 1 = 1–3, 2 = 4–6, 3 = 7–9, and 4 = 10 *or more.* Items were summed to form the final scale, with higher scores indicating greater alcohol use ($\alpha = .79$ for men, $\alpha = .85$ for women).

Hook-Up Frequency

Before indicating their hook-up involvement, respondents were provided with the following definition of hooking-up: "Hooking-up can be defined as an event in which two people are physically intimate outside of a committed relationship with no expectation of future encounters." Hook-up frequency was measured using a single item, "How many times have you ever hooked up?" Response categories were 0 = *None,* 1 = *Once,* 2 = 3–5 times, 3 = 6–9 *times,* and 4 = 10 *or more times.*

Men's Sexual Assault Perpetration

Sexual assault perpetration among men in the past 12 months was assessed using a six-item scale adapted from the Sexual Coercion Scale developed by Tyler et al. (1998). Evidence of good reliability and predictive validity for this measure has been found in previous studies (Simons et al. 2008; Simons et al. 2012b; Tyler et al. 1998). Male respondents were asked to "indicate the most intimate sexual outcome of behaviors that occurred with a partner *despite* his/her wish not to participate," including I… "got my date drunk or stoned," "threatened to terminate the relationship," "said things to make me feel guilty," "tried to turn my date on by touching him/her even though I wasn't interested," "made false promises about the future of the relationship," and "physically held my date down." Response categories were 0 = *Not applicable,* 1 = *Breast Touching,* 2 = *Genital Touching,* 3 = *Oral Sex,* and, 4 = *Sexual Intercourse.* Items were summed to form the final perpetration scale ($\alpha = .78$).

Women's Sexual Assault Victimization

Sexual assault victimization among women in the past 12 months was assessed using a six-item scale adapted from the Sexual Coercion Scale (Tyler et al. 1998). Respondents were asked to "indicate the most intimate sexual outcome of behaviors that occurred with a partner *despite* your wish not to participate," including the other person… "got me drunk or stoned," "threatened to terminate the relationship," "said things to make me feel guilty," "tried to turn me on by touching me even though I wasn't interested," "made false promises about the future of the relationship," and "physically held me down." Response categories were 0 = *Not applicable,* 1 = *Breast Touching,* 2 = *Genital Touching,* 3 = *Oral Sex,* and, 4 = *Sexual Intercourse.* Items were summed to form the final victimization scale ($\alpha = .70$).

Control Variables

Parental marital status was measured using a single item. Responses were dichotomously coded into two categories: 1 = *continuously married parents* and 0 = *non-continuously married parents. Family's income level* was measured using a single item, "Indicate your family's approximate total income." Response categories were 1 = <$50,000, 2 = $50,001–$75,000, 3 = $75,001–$100,000, 4 = $100,001–$125,000, and 5 = *Over* $125,000. *Participant race* was measured using a single item with responses dichotomously coded as 0 = *European American/Caucasian* and 1 = *African-American/Black.*

Data Analyses

To test the hypotheses, Structural Equation Modeling (SEM) using Mplus 7.1 (Muthén and Muthén 1998–2010) was employed. To account for slight kurtosis and non-normality in the sexual assault victimization and perpetration scales, robust maximum-likelihood (MLR) estimation was used. Separate models were run for sexual assault perpetration among males and sexual assault victimization among females. Fully recursive models were run first in the event that any unhypothesized paths were significant, and all nonsignificant paths ($z < 1.96$) were trimmed stepwise for the final models. Further, indirect effects analyses was performed to test for the mediation of attachment styles and a latent hook-up culture variable in the relationship between family of origin experiences and sexual assault perpetration or victimization. To test for indirect effects, bias-corrected bootstrapping (2000 iterations) was performed in order to increase power for detecting significant indirect effects. Missing data was minimal across study variables for all participants and was unrelated to race, religious preferences, family income, participant sex, and parent's marital status. Thus, data was modeled under the missing-at-random assumption, and missing data were excluded casewise for a final sample of 624. Parents' marital status, family's income, and race were controlled for in all models to account for their potential impact on constructs in our proposed model (e.g. Gross et al. 2006; Jones-Sanpei et al. 2009; Gross et al. 2006; Jones-Sanpei et al. 2009; Paxton et al. 2007; Simons et al. 2012).

Results

Two-thirds of men and half of women report hooking-up at least one time while 18.2 % of men and 10.5 % of women report hooking-up 10 or more times. In relation to sexual assault, 43.3 % of men report perpetrating some form of

sexual assault, and 50.4 % of women reported being a victim of some form of sexual assault. "Getting a date drunk or stoned" and "Trying to turn a date on by touching" were the coercive strategies men most often reported using (27.4 and 27 %, respectively) as well as being most often experienced by female victims (33.2 and 36.6 %, respectively).These coercive strategies were also the most likely to end in intercourse. Of those reporting any instance of sexual assault, 73 % of men reported the outcome of their perpetration was oral sex or sexual intercourse, while 75.3 % of women reported that their victimization resulted in oral sex or intercourse. Of all the men in our sample, 9.3 % of reported they had engage in the most extreme form of assault, physically holding a partner down to engage in non-consensual sexual contact while 8.3 % of women reported that they had ever been physically held down and sexually assaulted by a partner.

Table 1 presents the correlation matrix, along with means and standard deviations, for all study constructs. Values above the diagonal are for men, and values below the diagonal are for women. The significant relationships between variables are consistent with expectations. Both harsh parenting and interparental hostility are positively correlated with anxious and avoidant attachment among women. Further, harsh parenting and interparental hostility are both positively related to sociosexuality among women. For men, there is a positive relationship between harsh parenting and both attachment styles as well as a positive relationship between interparental hostility and avoidant attachment. Further, for men, both interparental hostility and harsh parenting are positively associated with sociosexuality. For women, anxious attachment has a positive relationship with sociosexuality, alcohol use, hook-up frequency, and victimization. Avoidant attachment is positively correlated with hook-up frequency and victimization for women. Among men, there is a positive relationship between avoidant attachment and sociosexuality. For both women and men, all hook-up culture variables (sociosexuality, alcohol use, hook-up frequency) are positively correlated with one another. For women, sexual assault victimization is positively associated with all other study variables. For men, sexual assault perpetration is significantly and positively related to all hook-up culture variables. See Table 1 for more details.

First, a model was tested to examine the relationships between interparental hostility, harsh parenting, and sexual assault perpetration among male participants. Further, we were concerned with the extent to which these relationships was mediated by avoidant attachment, anxious attachment, and participation in the hook-up culture. Path analysis in a SEM framework was used to test the hypothesized paths, and all non-significant paths ($z < 1.96$) were trimmed for the final model. The model fit indices, using criteria described in McDonald and Ho (2002), showed excellent fit to the data (see Table 2). As shown in Table 2 and Fig. 1, significant paths are largely consistent with expectations. The coefficients for the paths between interparental hostility and avoidant attachment ($\beta = .23$; $p = .000$) as well as between harsh parenting and anxious attachment ($\beta = .16$; $p = .013$) are positive. Furthermore, exposure to harsh parenting as well as an avoidant attachment style are associated with an increase in males' participation in the hook-up culture ($\beta = .21$; $p = .003$ and $\beta = .18$; $p = .030$, respectively). Finally, participation in the hook-up culture is related to an increase in males' perpetration of sexual assault ($\beta = .30$; $p = .000$). The model explains 12.3 % of the variance in sexual assault perpetration for male participants.

Second, a model was tested to examine the relationships between interparental hostility, harsh parenting, and sexual assault victimization among female participants. Further,

Table 1 Zero order correlations for study variables by participant sex

	1.	2.	3.	4.	5.	6.	7	8.	Mean	SD
1. Harsh parenting	–	.58**	.20**	.21**	.18**	.06	−.01	.10	17.80	8.98
2. Interparental hostility	.56**	–	.20*	.04	.11*	−.05	−.01	.11	9.02	4.95
3. Avoidant attachment	.16**	.21**	–	.25**	.26**	.08	.08	.03	12.03	4.47
4. Anxious attachment	.20**	.20**	.31**	–	.02	.00	−.03	−.03	12.46	4.33
5. Sociosexuality	.11*	.14**	.29**	.09	–	.41**	.39**	.26**	9.63	3.39
6. Alcohol use	−.02	.02	.13*	.07	.45**	–	.41**	.15**	5.18	2.00
7. Hook-up frequency	.03	.03	.26**	.18**	.53**	.45**	–	.12*	1.66	1.48
8. Sexual assault[1]	.13*	.15**	.20**	.22**	.31**	.23**	.30**	–	2.92	4.79
Mean	14.49	8.83	11.57	12.47	6.52	3.48	1.10	3.55		
SD	8.85	5.85	5.11	4.68	2.73	1.97	1.36	4.73		

Result for male participants above the diagonal (n = 287) and for female participants below the diagonal (n = 337). 1–Correlations with perpetration presented for male participants and with victimization for female participants

* $p < .05$; ** $p < .01$

Table 2 Results and fit indices for male perpetration (Model 1) and female victimization (Model 2)

Paths	Model 1: male perpetration				Model 2: female victimization			
	B (SE)	*B*	*p* value	95 % CI	*B* (SE)	*β*	*p* value	95 % CI
Interparental hostility								
Avoidant attachment	.22 (.06)	.23	.000	[0.109, 0.326]**	.19 (.06)	.23	.001	[0.084, 0.299]**
Harsh parenting								
Anxious attachment	.08 (.03)	.16	.013	[0.017, 0.142]*	.12 (.03)	.22	.000	[0.062, 0.177]**
Hook-up culture	.06 (.02)	.21	.003	[0.019, 0.095]**	–	–	–	–
Avoidant attachment								
Hook-up culture	.10 (.05)	.18	.030	[0.010, 0.185]*	.14 (.03)	.34	.000	[0.082, 0.188]**
Anxious attachment								
Sexual assault	–	–	–	–	.15 (.05)	.15	.003	[0.051, 0.257]**
Hook-up culture								
Sexual assault	.58 (.14)	.30	.000	[0.294, 0.874]**	.89 (.17)	.38	.000	[0.552, 1.234]**
R^2								
Avoidant attachment	.063				.049			
Anxious attachment	.029				.055			
Hook-up culture	.164				.162			
Sexual assault	.123				.182			
Fit indices								
CFI	.971				.961			
TLI	.930				.915			
RMSEA	.040				.051			
SRMR	.032				.042			

* Significant at .05, ** Significant at .01. Parent's marital status, family's income, and race entered as covariates in all models

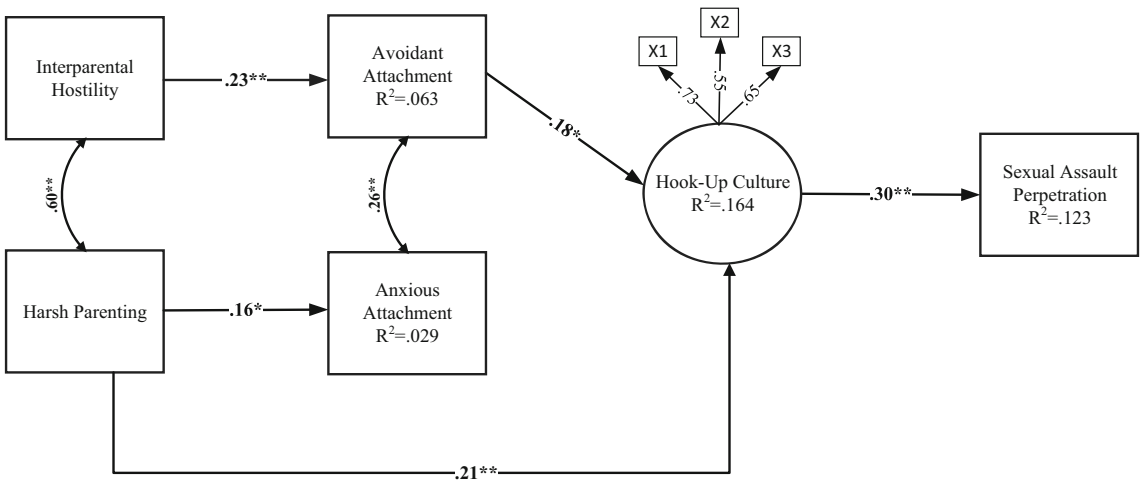

Fig. 1 Trimmed Model for Male's Perpetration. Standardized coefficients presented. Family income, parent's marital status, and race entered as covariates. X1–sociosexuality; X2–hook-up frequency; X3–alcohol use. Fit Indices: CFI: 0.971; TLI: 0.930; RMSEA: 0.040; SRMR: 0.032

we were concerned with the extent to which this relationship was mediated by avoidant attachment, anxious attachment, and participation in the hook-up culture. Path analysis in a SEM framework was used to test the hypothesized paths, and all non-significant paths ($z < 1.96$) were trimmed for the final model. The model fit indices, using criteria described in McDonald and Ho (2002), showed excellent fit to the data (see Table 2). As shown in Table 2 and Fig. 2, the coefficients for the paths between interparental hostility and avoidant attachment ($\beta = .23$;

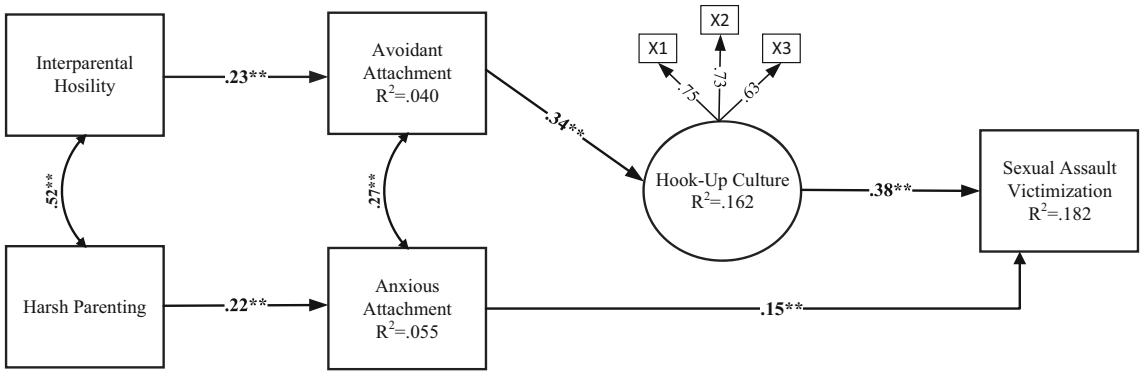

Fig. 2 Trimmed Model for Female's Victimization. Standardized coefficients presented. Family income, parent's marital status, and race entered as covariates. X1–sociosexuality; X2–hook-up frequency; X3–alcohol use. Fit Indices: CFI: 0.961; TLI: 0.915; RMSEA: 0.051; SRMR: 0.042

Table 3 Indirect effects for male perpetration and female victimization

Paths	*B* (SE)	β	95 % CI
Male's perpetration			
Interparental hostility → avoidant → hook-up culture	.021 (.01)	.042	[0.003, 0.031]**
Avoidant → hook-up culture → perpetration	.057 (.03)	.054	[0.012, 0.127]*
Interparental hostility → avoidant → hook-up culture → perpetration	.012 (.01)	.013	[0.004, 0.027]**
Harsh parenting → hook-up culture → perpetration	.033 (.02)	.060	[0.010, 0.070]**
Female's victimization			
Interparental hostility → avoidant → hook-up culture	.026 (.01)	.076	[0.009, 0.048]**
Avoidant → hook-up culture → victimization	.121 (.03)	.129	[0.062, 0.189]**
Interparental hostility → avoidant → hook-up culture → victimization	.023 (.01)	.029	[0.008, 0.047]**
Harsh parenting → anxious → victimization	.018 (.01)	.030	[0.005, 0.038]**

* Significant at .05; ** Significant at .01. 95 % CI computed using bias corrected bootstrapping

Avoidant–Avoidant Attachment; Anxious–Anxious Attachment

$p = .001$) and between harsh parenting and anxious attachment ($\beta = .22$; $p = .000$) are significant and positive. Further, an avoidant attachment style is associated with an increase in female's involvement in the hook-up culture ($\beta = .34$; $p = .000$). Last, an anxious attachment style ($\beta = .15$; $p = .003$) and involvement in the hook-up culture ($\beta = .38$; $p = .000$) are both related to increased sexual assault victimization among women. The model explains 18.2 % of the variance in sexual assault victimization for female participants.

Results of the indirect effects analysis employing bias-corrected bootstrapping (2000 iterations) are displayed in Table 3. For men, there is a significant indirect effect from interparental hostility to hook-up culture via avoidant attachment, $\beta = .042$, 95 % CI [0.003, 0.031], as well as an indirect relationship from avoidant attachment to perpetration via hook-up culture, $\beta = .054$, 95 % CI [0.012, 0.127]. Furthermore, the total indirect effect from interparental hostility to perpetration of sexual assault via avoidant attachment and hook-up culture is significant, $\beta = .013$, 95 % CI [0.004, 0.027]. Lastly, there is a significant indirect effect from harsh parenting to sexual assault perpetration among men via hook-up culture, $\beta = .060$, 95 % CI [0.010, 0.070]. For women, there is a significant indirect effect from interparental hostility to hook-up culture via avoidant attachment, $\beta = .076$, 95 % CI [0.009, 0.048], as well as an indirect relationship from avoidant attachment to victimization via hook-up culture, $\beta = .129$, 95 % CI [0.062, 0.189]. Furthermore, the total indirect effect from interparental hostility to sexual assault victimization via avoidant attachment and hook-up culture is significant, $\beta = .029$, 95 % CI [0.008, 0.047]. Finally, there is a significant indirect effect from harsh parenting to sexual assault victimization among women via anxious attachment, $\beta = .030$, 95 % CI [0.005, 0.038].

Discussion

Sexual assault continues to be a major problem on college campuses. The recent wave of media reports and lawsuits

by victims as well as the formation of a White House Task Force charged with identifying strategies to reduce this problem indicates that there is a clear need for continued efforts to identify predictors of sexual assault. The current study sought to add to the scant body of literature on family, individual, and sociocultural risk factors that are associated with experiences of sexual assault. We began by demonstrating a relationship between childhood exposure to two types of aggression in the family of origin and sexual assault. Next, we examined attachment style and engagement in the hook-up culture as possible mediators in that relationship.

The authors are aware that sexual assault is not always limited to male perpetration and female victimization. We chose to focus on men's perpetration and women's victimization given the fact that, due to the relative size and strength of men compared to women, women are more commonly the victims of sexual assault (Hines et al. 2012). Women also tend to experience greater negative physical and psychological consequences as a result of sexual victimization. Specifically, though men do sometimes report having experienced sexual assault, a large percentage of males report a positive or neutral reaction to the event (Kernsmith and Kernsmith 2009) whereas women are likely to report negative emotions such as shame and helplessness or more serious psychological reactions such as anxiety, depression, and PTSD (Brown et al. 2009; Tyler et al. 1998). Thus, in addition to providing insight regarding factors associated with men's perpetration, this study also adds to the dearth of literature on risk factors for women's victimization (Adams-Curtis and Forbes 2004).

Findings largely supported our hypotheses. Consistent with attachment theory, interparental hostility was significantly related to an avoidant attachment style while harsh parenting was significantly related to an anxious attachment style for both men and women. While we originally proposed that harsh parenting and interparental hostility would each be related to an avoidant and an anxious attachment style, we found that harsh parenting was only related to an anxious attachment style and interparental hostility was only related to an avoidant attachment style. This may be the case because parents who are involved in hostile relationships with their partners might be less responsive to children's needs and may also provide a working model of intimate relationship based on cynicism and distrust of others, leading to an avoidant attachment style. On the other hand, negative parent–child interactions characterized by frequent physical punishment and hostility combined with a lack of warmth may cause feelings of fear and helplessness and may provide a working model of relationships that include the belief that loved ones are unreliable in their displays of love and concern. In this way, harsh parenting may result in an anxious attachment style.

Contrary to predictions, we found no direct relationship between family of origin aggression and sexual assault for either men or women. Rather, interparental hostility and harsh parenting were linked to sexual assault through their impact on insecure attachment and participation in the hook-up culture. For men, harsh parenting exerted a direct effect on greater participation the hook-up culture even after accounting for attachment style. Further, there was an indirect effect from harsh parenting to perpetration among men through involvement in the hook-up culture. This finding is consistent with previous research showing that men who prefer casual, impersonal sex are more likely to use aggression and force in sexual interactions with women (Yost and Zurbriggen 2006). Men who learn that violence and aggression are acceptable within intimate relationships through violent parent–child experiences may be especially likely to use coercive sexual practices when they take an impersonal, detached approach to sexual encounters during adolescence and emerging adulthood.

Consistent with our hypotheses, an avoidant attachment style was related to increased participation in the hook-up culture for both men and women, and there was a significant, indirect relationship between interparental hostility and involvement in the hook-up culture via an avoidant attachment style. These findings are consistent with theoretical and empirical work on attachment theory. Individuals who are exposed to anger and violence between their caregivers likely develop an avoidant attachment style as they learn that emotional engagement with a significant other can lead to negative consequences like violence (Mikulincer et al. 2003). In turn, avoidantly attached adults are motivated to avoid intimacy and commitment and have a preference for casual sexual encounters (Davis et al. 2004; Gentzler and Kerns 2004).

Also as expected, an anxious attachment style was unrelated to engagement in the hook-up culture. It is likely that anxiously attached individuals are motivated to establish serious, committed relationships with a partner and may wish to avoid the casual and spontaneous sexual activity that characterizes a hook-up (Davis et al. 2004; Gentzler and Kerns 2004). Thus, factors other than participation in the hook-up culture likely account for the relationship between an anxious attachment style and sexual assault, such as a fear of rejection or abandonment among both victims and perpetrators (Brassard et al. 2007; Gentzler and Kerns 2004). Furthermore, among women, we found a significant relationship between an anxious attachment style and victimization as well as a significant indirect relationship between harsh parenting and victimization via an anxious attachment style. It is likely anxiously attached women have learned through parent–child interactions to be wary of rejection (Hazan and Shaver 1987), making them vulnerable to sexually coercive experiences as they attempt to avoid any interaction that could jeopardize

their interaction with an intimate partner. These women may also have learned that resisting a partner's hostility or aggression can lead to an escalation of violence based on their past familial experiences (Simons et al. 2012a). Contrary to our predictions and past findings (Brassard et al. 2007), an anxious attachment style among men was unrelated to perpetration. With the growing popularity of the hook-up culture and related delays in the formation of serious intimate partnerships, perhaps anxiously attached men are unable to find serious dating partners (Bradshaw et al. 2010). If anxiously attached college men both avoid casual sexual encounters and are unable to establish dating relationships, they may be presented with fewer opportunities to engage in sexually coercive behaviors with a partner.

We found that engagement in the hook-up culture was associated with an increase in sexual assault perpetration among men and victimization among women. There was also a significant indirect relationship from an avoidant attachment style to sexual assault via involvement in the hook-up culture for all participants. These results provide evidence, consistent with the campus rape culture hypothesis, that the hook-up culture (e.g. high levels of sociosexuality; spontaneous, ambiguous sexual encounters; high consumption of alcohol) fosters an environment on campuses that is conducive to the occurrence of sexual assault. For instance, researchers have theorized that permissive attitudes about sexuality are based in traditional gender roles that foster a culture of male aggression and an opportunistic, conquest-oriented approach to sexuality among men. This approach to sexuality is believed to elevate incidences of sexual assault because women are viewed as sexual objects and male sexual domination is encouraged (Yost and Zurbriggen 2006; Walker et al. 2000). Further, the hook-up culture is conducive to ambiguously defined sexual interactions in which women are left physically vulnerable to a bigger, stronger partner they may not know well in unsafe location, such as a party, bar, or even an apartment or dorm (Paul and Hayes 2002). One or both partners are likely impaired by alcohol use (Barriger and Vélez-Blasini 2013), which can lead to aggressiveness and/or misperception of partner's sexual intent among men and impaired ability to resist and perceive risks among women (Abbey 2002). Thus, the hook-up culture provides opportunities for men to use coercive strategies such as manipulation, impairment, or force in sexual interactions with a female partner under the guise of a normative sexual encounter.

This study is one of the first to demonstrate that hooking-up may be a particularly dangerous type of sexual experience for women on college campuses, supporting the contention that the hook-up culture is conducive to a rape culture rather than serving to empower women. Despite some research showing that casual sex does not impact the psychological well-being of some women (Vrangalova and Ong 2014), our study demonstrates that the hook-up culture is related to greater occurrences of sexual assault. Recently, experts on college sexual violence have recognized that sexual assault is a predictable result of the hook-up culture wherein drinking and casual sex are glamorized in the context of a sexual double standard and a rape supportive social environment (Wade et al. 2014). In this cultural climate, predatory men are provided with ample opportunity to coerce vulnerable women without reproach since sexual violence is often ignored and seen as something that "just happens" on college campuses (Wade et al. 2014), especially when heavy drinking is involved. Such a culture leads to a tolerance for sexual assault and victim-blaming and may inhibit the willingness of women to report experiences of sexual assault once they have occurred (Burnett et al. 2009; Wade et al. 2014).

While our study has several strengths, it has certain limitations that need to be mentioned. First, the data used was cross-sectional and retrospective, making it difficult to establish causal priority. We have attempted to address the retrospective nature of the data by anchoring the questions. For instance, in relation to the family of origin items, participants were prompted to think about their relationship with their caregivers during the time they were growing up at home and experiences of sexual assault focus only on incidents from the past 12 months. However, future research is needed to replicate these findings using both prospective and longitudinal data. Additionally, the generalizability of our findings is limited in that our sample consists mainly of college students. While our sample was representative of Caucasian and African-American students at large universities in the southeast, replication of these findings using a nationally representative sample as well as emerging adults not attending college is warranted. Last, constructs not included in our study, such as impulsivity or low self-control, may account for the relationship between harsh parenting and casual sexual experiences for college men. Such measures were not available in the current data set. Despite these limitations, finding from the current study contribute to the scant body of literature on the risk factors associated with sexual assault and the role that the hook-up culture may play in perpetuating a campus rape culture.

Our findings have implications for policy and practice as well. First, colleges and universities can draw upon these findings to inform the development of sexual assault prevention efforts, including programs that address alcohol awareness. Additionally, the current study can provide insight regarding the development of parent education programs that teach awareness of the impact of parents' behavior on their child's attachment security and the importance of responsive parenting behaviors and non-violent disciplinary techniques. Such efforts have been effective at increasing supportive parent–child relationships and positive parenting practices and decreasing youth

risk behaviors (Brody et al. 2005). Relationship education with at-risk parents could also be effective at reducing negative couple interactions and increasing effective co-parenting and positive discipline (Adler-Baeder et al. 2013). Relationship education can also be used with young adults to establish a healthy view of relationships and sexuality and to help participants use their awareness of risk to decrease aggression and sexual violence between partners (Foshee et al. 2004; Schramm and Gomez-Scott 2012). Together, these programs may help college students develop a less impersonal approach to sex and more positive internal working models of intimate relationships. This could, in turn, decrease experiences of sexual assault, in part by highlighting potential risks associated with the hook-up culture.

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