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Understanding Forced Sex During Adolescence: An Exploratory Study of Risk and Protective Factors

Abstract
The overall purpose of this study was to explore predictors of forced sex among a sample of middle school students. Youth Risk Behavior Surveys were distributed to middle school youth in southeast Florida. Data were analyzed using descriptive statistics, Chi-Square Automatic Interaction Detector (CHAID), and logistic regression. In the final CHAID model, the segment most at risk was comprised of youth who had been harassed for being gay, lesbian, or bisexual and youth who had experienced dating violence. Past exposure with violence yielded the highest association with forced sex. Moreover, having multiple sexual partners, use of prescription drugs, and experiencing harassment for being gay, lesbian, or bisexual are predictors of forced sex. This study has implications for school-based prevention of forced sex through the identification of risk and protective factors that can be targeted with evidence-based interventions.

Keywords
sexual violence, forced sex, adolescence

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Understanding Forced Sex During Adolescence: An Exploratory Study of Risk and Protective Factors

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Forced sex is a type of sexual violence where consent for any sexual activity is not obtained or freely given (Centers for Disease Control and Prevention [CDC], 2014a). Sexual violence is a significant public health issue in the United States, especially among youth. The CDC estimates that in 2014, nationwide 7.3% of high school students were forced to engage in some type of forced sexual activity and rates were much higher for females (10.5%) compared to males (4.2%) (CDC, 2014a). Moreover, approximately half (42.2%) of female rape victims were raped before the age of 18 (CDC, 2012). In 2013, rates of forced sex were highest among American Indian/Alaskan Natives (12.5%) followed by Hispanics (8.7%), Blacks (8.4%) and Whites (6.1%) (Kann et al., 2014). Additionally, the prevalence of forced sex was highest among 12th-grade students (8.4%) followed by 11th grade (7.7%), 10th grade (7.2%), and 9th grade (6.1%) (Kann et al., 2014). It is noteworthy that the prevalence of forced sex has not changed significantly from 2011 (8.0%) to 2013 (7.3%) which emphasizes the need for more public health attention and efforts (Kann et al., 2014).

Perpetrators of sexual violence are usually someone known to the victim and can be a friend, partner, co-worker, neighbor, or family member (CDC, 2012). Among female rape victims, perpetrators were reported to be intimate partners in 51.1% of the cases and family members in 12.5% of the cases (CDC, 2012). Current literature supports that individuals who self-identify within a sexual minority (lesbian, gay, bisexual, or transgender (LGBT)), on average, are more likely to experience parental physical and sexual abuse (Friedman et al., 2011) and also report higher levels of bullying and substance use (CDC, 2014b). According to the CDC, 19% to 29% of gay and lesbian students and 18% to 28% of bisexual students experienced dating violence in the prior year (CDC, 2014b). Additionally, 14% to 31% of gay and lesbian students and 17% to 32% of bisexual students have been forced to have sexual intercourse at some point in their lives (CDC, 2014b). LGBT youth were also found to be twice as likely to have attempted suicide compared to heterosexual youth of their age (CDC, 2014b).

Some factors—such as excessive alcohol consumption, bullying (including cyberbullying), having sex at young age, having sex with strangers, having friends that think it is okay to do sexual things with another person without their consent, and witnessing or experiencing violence as a child—are associated with greater risk of perpetrating sexual violence (CDC, 2014a). Some studies have illustrated a strong link between alcohol consumption and risk of sexual violence (Abbey, 2011; Swendsen et al., 2012; Young, Grey, Abbey, Boyd, & McCabe, 2008). Research also indicates that adolescents and college students are at higher risk of alcohol related sexual violence compared to adults (Young et al., 2008). Excessive consumption of alcohol has been linked to reduced emotional and cognitive abilities, leading to alcohol-related sexually aggressive emotions, especially among males (Davis, 2010; Zucker, Donovan, Masten, Mattson, & Moss, 2008).

Studies have also demonstrated a strong link between child sexual abuse and engagement in risky sexual behaviors such as having multiple partners and earlier age of first intercourse (Jones et al., 2013; Marchand & Smolkowski, 2013; Senn, Carey, & Vanable, 2008). Risky sexual

behaviors among adolescents and youth are predictors of revictimization, which may include some type of sexual violence (Walsh et al., 2013). Research has also indicated that child victims of forced sexual assault report lower degrees of perceived competence and satisfaction in their social environment (Becker, 2007) and report negative outcomes such as alcohol and drug use, dating violence, depression and post-traumatic stress disorder, and suicide ideation (Marchand & Smolkowski, 2013; Olshen, McVeigh, Wunsch-Hitzig, & Rickert, 2007).

Cyberbullying/cyberdating, a risk factor for sexual violence, also raises concern regarding use of technology to harass, control, and abuse dating partners (Zweig, Dank, Yahner, & Lachman, 2013). Dating violence among teens can be of different types and levels, one of which may include forced sexual activity. The CDC estimates that among 73.9% of students nationwide who dated/went out with someone during the 12 months prior to completing survey, approximately 10.4% of those students were kissed or touched without consent or physically forced to have sexual intercourse (Kann et al., 2014). Also, a nationwide survey demonstrated that approximately 14.8% of students were victims of cyberbullying in 2013 (Kann et al., 2014).

Survivors of sexual violence often face higher rates of depression, post-traumatic stress disorders and suicide ideations (Brabant, Hebert, & Chagnon, 2013). According to the CDC, in 2013, 17% of students had seriously thought of committing suicide and the prevalence was more among females (22.4%) than males (11.6%) (Kann et al., 2014). Some studies demonstrated that victims of sexual violence are 1.4 to 3.6 times more likely to report making a suicide attempt compared to non-victims (Tomasula, Anderson, Littleton, & Riley-Tillman, 2012). In addition to this, victims of sexual violence also report behavioral difficulties such as aggression which can also lead to sexually coercive behaviors. A study also indicated that lack of guardianship, substance abuse, social and relationship concerns, and powerlessness contribute to adolescent vulnerability towards sexual victimization. Eliminating or minimizing these risk factors can act as a protective feature to prevent sexual violence from happening in the first place (Livingston, Hequembourg, Testa, & VanZile-Tamsen, 2007). Given the lack of reductions in forced sex across time, the purpose of this study was to explore predictors of forced sex among a sample of middle school students. Studying these predictors could be of significant use in public health, education, and other professional fields when designing and targeting practices and programs to address sexual violence among youth.

METHOD

Sample

Surveys (n = 3,334) were distributed to middle school youth from one school district located in southeast Florida; 3,252 valid surveys were returned, which resulted in an initial response rate of 97%. One hundred and sixty-five student surveys were omitted because students failed to answer 10% or more of questions (i.e., 7 or more questions). Overall, 3,087 student surveys were analyzed, resulting in an effective response rate of 92% (3,087/3,334). Participants were enrolled in grades 6 (*n* = 1467, 48%), 7 (*n* = 9, 0.3%), or 8 (*n* = 1557, 51%); remaining participants did not report their grade level. Participating students ranged in age from 10 to 16 years; however, most were between the ages of 11 and 14 years. The ratio of females (50%) to males (50%) who participated was about the same. The race/ethnic composition of participants included White (61%), Black or African American (11%), Hispanic or Latino (14%), American Indian or Alaskan Native (2%), Asian (3%), and Native Hawaiian or Pacific Islander (<1%).

Instrumentation

The Youth Risk Behavior Survey (YRBS), a component of the CDC's Youth Risk Behavior

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Surveillance System (YRBSS), measures the prevalence of health-risk behaviors among adolescents through representative national, state, and local surveys (CDC, n.d.). Usually conducted at the high school level (grades 9–12), the multiple choice survey used in this study was modified to include questions which are pertinent to middle school students (grades 6–8). Like the high school version, the middle school survey monitors the six categories of priority health-risk behaviors among youth and young adults: (a) unintentional and intentional injuries, (b) tobacco use, (c) alcohol and other drug use, (d) sexual behaviors that contribute to unintended pregnancies and sexually transmitted diseases, (e) unhealthy dietary behaviors, and (f) physical inactivity (Kann et al., 2014). The school district added questions about demographics, delinquent behaviors, bullying, school climate, and self-reported grades. This survey contained 99 questions. For the purposes of this study, the following item was used as the dichotomous dependent variable: "Have you ever been physically forced to have sexual intercourse when you did not want to?" A total of 31 predictor variables were included in the initial model representing intentional injuries, substance use, bullying, depression and suicidality, sexual behaviors, demographics, and school performance.

Data Collection and Analysis

An effort was made to survey half of all students enrolled in 6th and 8th grades in one school district in fall of 2013. Students whose parents had opted them out of survey administration were excluded. The teachers, in their respective subjects, then administered the self-reported questionnaire to students during a regular class period. Survey procedures were designed to protect the students' privacy and allow for anonymous, voluntary participation. Standard electronic answer sheets ("bubble sheets") were used by students to record their responses.

Data were read by an optical scanner and analyzed using descriptive statistics and Chi-Square Automatic Interaction Detector (CHAID). CHAID is an exploratory data analysis technique that identifies unique segments at risk and protected from behaviors (Magidson, 1994). Cross-validation (i.e., splitting the sample in half randomly and testing the model twice) was used to test the validity of the model. Classification accuracy for the test sample is reported. Once the final segments were identified, subgroup analysis using descriptive statistics (percentages) was conducted in order to describe each segment in terms of other risk and protective factors. Finally, logistic regression was used to verify the results of the exploratory CHAID analyses.

RESULTS

A total of 1,689 youth were included in the test sample for the initial model run. The prevalence of self-reported forced sex among this sample of middle school youth was 12% (n = 203). In the initial model, which included 31 predictor variables, the following variables entered the model ($p \leq .01$): dating violence; the number of people with whom they had had sexual intercourse; having been harassed because someone thought they were gay, lesbian, or bisexual; "feeling sad or hopeless almost every day" (i.e., depression); gender; having used prescription drugs; and being electronically bullied (see Appendix A). In this model, the largest segment at risk for forced sex was comprised of youth who had experienced dating violence and who had used prescription drugs to get high ($\chi^2 = 26.62$, $df = 1$, $p < .01$, $n = 64$). In comparison, the largest segment protected from forced sex was comprised of youth who had not experienced dating violence, had low numbers of sexual partners, and had experienced a range of harassment for being gay, lesbian, or bisexual ($\chi^2 = 15.59$, $df = 1$, $p = .01$, $n = 878$). The initial segmentation model is displayed in Appendix A.

The classification accuracy for the initial model was 89%.

In the initial model, the response options for being harassed for being gay, lesbian, or bisexual did not merge in an easily interpretable fashion so this variable was dichotomized (1 = Had been harassed; 0 = Had not been harassed) to improve clarity. A second model was then run with the new variable and the original predictor variables. This resulted in the final model (see Appendix B). In this model, being harassed for being gay, lesbian, or bisexual emerged as the most statistically significant variable ($p <. 01$). In the final model, the segment most at risk for forced sex was comprised of youth who had been harassed for being gay, lesbian, or bi-sexual and youth who had experienced dating violence ($\chi^2 = 47.79$, $df = 1$, $p <. 01$, $n = 49$). In turn, the segment most protected from forced sex was comprised of youth who had not been harassed for being gay, lesbian, or bisexual; youth who had not experienced dating violence; and youth who had low to no numbers of sexual partners ($\chi^2 = 73.84$, $df = 2$, $p <. 01$, $n = 929$). The classification accuracy for the final model was improved, with 90% of cases correctly classified.

To further explore the segments most at risk and protected from forced sex, descriptive statistics were run for two comparison groups (from the final model): a) youth who had been harassed for being gay, lesbian, or bi-sexual and had experienced dating violence versus b) youth who had not been harassed for being gay, lesbian, or bisexual and who had not experienced dating violence. A summary of descriptive statistics for a variety of health behaviors is reported in Appendix C.

An almost equal number of females and males responded that they had been harassed for being gay, lesbian, or bisexual and had experienced dating violence as there were who had not been harassed for being gay, lesbian, or bisexual and had not experienced dating violence. Sixty-four percent of those who had been harassed for being gay, lesbian, or bisexual and had experienced dating violence reported being physically forced to have sexual intercourse. Among those who had not been harassed for being gay, lesbian, or bisexual and had not experienced dating violence, 5.7% were physically forced to have sexual intercourse, while 94.3% were not.

Forty-eight percent of those who had been harassed for being gay, lesbian or bisexual and had experienced dating violence reported having six or more lifetime sex partners, while 12% had never had sexual intercourse. For those who had not been harassed for being gay, lesbian or bisexual and had not experienced dating violence, 65.3% had never had sexual intercourse and 14.7% had one sexual partner. Approximately 75% of those who had been harassed for being gay, lesbian, or bisexual and had experienced dating violence reported to have been depressed in the past 12 months. Twenty-two percent of those who had not been harassed for being gay, lesbian, or bisexual or experienced dating violence reported being depressed.

Among those who reported harassment for being gay, lesbian or bisexual and had experienced dating violence, 78% had been electronically bullied. However, only 12.6% of those who had not been harassed for being gay, lesbian or bisexual and had not experienced dating violence reported being electronically bullied. Approximately 56% of those who had been harassed for being gay, lesbian, or bisexual and had experienced dating violence used prescription drugs, whereas only 10.8% who had not been harassed for being gay, lesbian or bisexual and had not experienced dating violence reported using prescription drugs.

Based on the candidate variables suggested by the exploratory CHAID analyses, a logistic regression model was constructed using all individual variables as well as all pairwise interactions. Based on a full model-reduced model analysis, all interactions were found to be not statistically significant and were

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removed from the model, leaving only main effects. Appendix D provides the variables in the logistic regression model, their odds ratios and associated *p*-values.

DISCUSSION AND CONCLUSIONS

In the exploration of predictors of forced sex among a sample of middle school students, there were several significant predictors determined. These included gender, victim of teasing because of weight during the past 12 months, lifetime number of sex partners, depression, electronic bullying, prescription drug use, experienced dating violence, and harassment for being gay, lesbian, or bisexual. Among these predictors, past exposure with dating violence yielded the highest association (*OR* = 7.2) with forced sex, which is in alignment with the findings of other related studies. Current literature suggests that witnessing or experiencing violence as a child (sexual or physical) and current or past domestic and dating violence are associated with greater risk of being victims of forced sex (CDC, 2014a; Jones et al., 2013; Marchand & Smolkowski, 2013; Senn et al., 2008; Walsh et al., 2013).

Moreover, findings of the current study also demonstrate that having multiple sexual partners (*OR* ranging from 1.7 to 4.7 based on number of partners); using prescription drugs (*OR* = 1.8); and experiencing harassment for being gay, lesbian, or bisexual (*OR* = 1.9) are predictors of sexual violence such as forced sex. These findings are consistent with the present research which indicates that practicing risky behaviors such as use of prescription drugs and having multiple sexual partners increases the risk of sexual violence (CDC, 2014a; Friedman et al., 2011; Marchand & Smolkowski, 2013). On average, individuals who self-identify within a sexual minority (LGBT) reported higher levels of substance abuse and bullying (CDC, 2014b) and were more likely to experience parental physical and sexual abuse (Friedman et al., 2011). In addition, the CDC (2014b) reported 14% to 31% of gay and lesbian students and 17% to 32% of bisexual students had been forced to have sexual intercourse at some point in their lives (CDC, 2014b). Additionally, findings also suggest that females have higher chances of experiencing sexual violence such as forced sex compared to males (*OR* = 1.8), which coincides with the current rates of forced sexual activity among males (4.2%) and females (10.5%) (CDC, 2014a). Consistent with those findings, approximately half (42.2%) of female rape victims were raped before 18 years of age (CDC, 2012).

Further research is needed to explore and confirm the effect of above mentioned and additional predictors of sexual violence since this study does not meet the criteria for assessing causality. However, these findings are important to the field of public health and other fields which serve vulnerable youth as they can inform the design of strategies and provide focus areas for interventions. It is important that well targeted and effective interventions and programs are designed and placed according to the needs of the population. Efforts to address dating violence are needed, especially given the link to sexual violence. In addition, innovative efforts to address prescription drug use are needed, especially given the rise in prescription drug use among youth and the ease in which youth access prescription drugs from friends and family (National Institute on Drug Abuse, 2014).

Our results and the prevalence of forced sex among this population suggest an urgent need for evidence-based interventions that not only challenge knowledge, attitudes, and beliefs toward forced sex, but result in changes in behavior that will ultimately reduce levels of forced sex among youth (De La Rue, Polanin, Espelage, & Pigott, 2014). In reality, the easiest way to reach the target population discussed in this paper is the educational system, and many evidence-based interventions are available (see De La Rue et al., 2014 for a meta-analysis). Evidence-based interventions, ideally, should focus on peer relationships and dating violence,

as many relationships during adolescence involve physical or psychological abuse (Espelage, Low, & De La Rue, 2012). In actuality, youth are more at risk from their peers than they are from their family members (Snyder & McCurley, 2008), so school systems are the obvious location for the implementation of available evidence-based interventions. Dating violence deserves special attention as 1 in 10 adolescent relationships include some form of violence (Mulford & Giordano, 2008). Addressing dating violence is vital as youth who experience dating violence are at risk for negative academic outcomes. The findings of our study can assist schools in identifying and selecting evidence-based interventions for implementation in school settings. Overall, according to our analysis, evidence-based interventions should focus on factors that place youth at risk for forced sex, which include gender, victim of teasing because of weight during the past 12 months, lifetime number of sex partners, depression, electronic bullying, prescription drug use, experience with dating violence, and harassment for being gay, lesbian, or bisexual.

Several limitations of this study should be considered. First, CHAID is an exploratory modeling approach, so CHAID results should be considered suggestive. However, logistic regression was used to confirm the results of the CHAID analysis. Second, the study design was cross-sectional, so the results do not reflect causal relationships. Third, self-report data were used; however, previous findings have supported the validity of self-report data in social science research. Overall, this study was innovative in the use of CHAID and has resulted in a list of variables that should be considered when designing programs targeted at reducing rates of sexual violence among adolescents.

REFERENCES

Abbey, A. (2011). Alcohol's role in sexual violence perpetration: Theoretical explanations, existing evidence, and future directions. *Drug and Alcohol Review, 30*, 481–489. doi:10.1111/j.1465-3362.2011.00296.x

Becker, J. L. (2007). *Socioemotional outcomes of children sexually abused during early childhood* (Doctoral dissertation). Retrieved from http://digitalcommons.fiu.edu/etd/11

Brabant, M. E., Hebert, M., & Chagnon, F. (2013). Identification of sexually abused female adolescents at risk for suicidal ideations: A classification and regression tree analysis. *Journal of Child Sexual Abuse, 22*, 153–172. doi:10.1080/10538712.2013.741666

Centers for Disease Control and Prevention. (n.d.). *1991-2011: High school youth risk behavior survey data*. Retrieved from http://nccd.cdc.gov/youthonline/

Centers for Disease Control and Prevention. (2012). *Sexual violence*. Retrieved from http://www.cdc.gov/violenceprevention/pdf/sv-datasheet-a.pdf

Centers for Disease Control and Prevention. (2014a). *Understanding sexual violence*. Retrieved from http://www.cdc.gov/violenceprevention/pdf/sv-factsheet.pdf

Centers for Disease Control and Prevention. (2014b). *LGBT youth*. Retrieved from http://www.cdc.gov/lgbthealth/youth.htm

Davis, K. C. (2010). The influence of alcohol expectancies and intoxication on men's aggressive unprotected sexual intentions. *Experimental and Clinical Psychopharmacology, 18*, 418–428. doi:10.1037/a0020510

De La Rue, L., Polanin, J. R., Espelage, D. L., & Pigott, T. D. (2014). School-based interventions to reduce dating and sexual violence: A systematic review. *Campbell Systematic Reviews*, *10*(7). Retrieved from http://www.campbellcollaboration.org/lib/project/268/

Espelage, D. L., Low, S., & De La Rue, L. (2012). Relations between peer victimization subtypes, family violence, and psychological outcomes during adolescence. *Psychology of Violence, 2*, 313–324. doi:10.1037/a0027386

DOI: 10.20429/nyarj.2016.010204

Friedman, M. S., Marshal, M. P., Guadamuz, T. E., Wei, C., Wong, C. F., Saewyc, E. M., & Stall, R. (2011). A meta-analysis of disparities in childhood sexual abuse, parental physical abuse, and peer victimization among sexual minority and sexual nonminority individuals. *American Journal of Public Health*, *101*, 1481–1494. doi:10.2105/AJPH.2009190009

Jones, D. J., Lewis, T., Litrownik, A., Thompson, R., Proctor, L. J., Isbell, P., . . . Runyan, D. (2013). Linking childhood sexual abuse and early adolescent risk behavior: The intervening role of internalizing and externalizing problems. *Journal of Abnormal Child Psychology, 41*, 139–150. doi:10.1007/s10802-012-9656-1

Kann, L., Kinchen, S., Shanklin, S. L., Flint, K. H., Hawkins, J., Harris, W. A., . . . Zaza, S. (2014). Youth risk behavior surveillance: United States, 2013. *Morbidity and Mortality Weekly Report, 63*(4). Retrieved from http://www.cdc.gov/mmwr/pdf/ss/ss6304.pdf

Livingston, J. A., Hequembourg, A., Testa, M., & VanZile-Tamsen, C. (2007). Unique aspects of adolescent sexual victimization experiences. *Psychology of Women Quarterly,* 31, 331–343. doi:10.1111/j.1471-6402.2007.00383.x.

Magidson, J. (1994). The CHAID approach to segmentation modeling: Chi-squared automatic interaction detection. In R. Bagozzi (Ed.), *Advanced methods of marketing research* (pp. 118–159). Cambridge, MA: Blackwell Publishers.

Marchand, E., & Smolkowski, K. (2013). Forced intercourse, individual and family context, and risky sexual behavior among adolescent girls. *Journal of Adolescent Health, 52*, 89–95. http://dx.doi.org/10.1016/j.jadohealth.2012.04.011

Mulford, C., & Giordano, P. C. (2008). *Teen dating violence: A closer look at adolescent romantic relationships*. Retrieved from http://www.nij.gov/journals/261/teen-dating-violence.htm

National Institute on Drug Abuse. (2014). *Drug facts: High school and youth trends*. Retrieved from http://www.drugabuse.gov/sites/default/files/high_school_and_youth_trends_december_2014.pdf

Olshen, E., McVeigh, K. H., Wunsch-Hitzig, R. A., & Rickert, V. I. (2007). Dating violence, sexual assault, and suicide attempts among urban teenagers. *Archives of Pediatric and Adolescent Medicine, 161*, 539–545. doi:10.1001/archpedi.161.6.539

Senn, T. E., Carey, M. P., & Vanable, P. A. (2008). Childhood and adolescent sexual abuse and subsequent sexual risk behavior: Evidence from controlled studies, methodological critique, and suggestions for research. *Clinical Psychology Review, 28*, 711–735. doi:10.1016/j.cpr.2007.10.002

Snyder, H. N., & McCurley, C. (2008). *Domestic assaults by juvenile offenders*. Retrieved from: https://www.ncjrs.gov/pdffiles1/ojjdp/219180.pdf

Swendsen, J., Burstein, M., Case, B., Conway, K. P., Dierker, L., He, J., & Merikangas, K. R. (2012). Use and abuse of alcohol and illicit drugs in US adolescents. *Archives of General Psychiatry, 69*, 390–398. doi:10.1001/archgenpsychiatry.2011.1503

Tomasula, J. L., Anderson, L. M., Littleton, H. L., & Riley-Tillman, T. C. (2012). The association between sexual assault and suicidal activity in a national sample. *School Psychology Quarterly, 27*, 109–119. doi:10.1037/a0029162

Walsh, K., Messman-Moore, T., Zerubavel, N., Chandley, R. B., DeNardi, K. A., & Walker, D. P. (2013). Perceived sexual control, sex related alcohol expectancies and behavior predict substance-related sexual revictimization. *Child Abuse and Neglect, 37*, 353–359. http://dx.doi.org/10.1016/j.chiabu.2012.11.009

Young, A., Grey, M., Abbey, A., Boyd, C. J., & McCabe, S. E. (2008). Alcohol related sexual assault victimization among adolescents: Prevalence, characteristics, and correlates. *Journal of Studies on Alcohol and Drugs,*

69, 39–48. http://dx.doi.org/10.15288/jsad.2008.69.39

Zucker, R. A., Donovan, J. E., Masten, A. S., Mattson, M. E., & Moss, H. B. (2008). Early developmental processes and the continuity of risk for underage drinking and problem drinking. *Pediatrics, 121*, S252-S272. doi:10.1542/peds.2007-2243B

Zweig, J. M., Dank, M., Yahner, J., & Lachman, P. (2013). The rate of cyber dating abuse among teens and how it relates to other forms of teen dating violence. *Journal of Youth and Adolescence, 42*, 1063–1077. doi:10.1007/s10964-013-9922-8

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Akrati Gupta is currently a doctoral candidate working towards a degree in Community Health and Behavior in the Jiann Ping Hsu College of Public Health at Georgia Southern University. She has worked with multiple prevention programs focused on sexual health under various local and state health departments.

Karmen Williams is a doctoral student pursuing a degree in Public Health Leadership at the Jiann-Ping Hsu College of Public Health at Georgia Southern University. Upon completion of this program, Ms. Williams plans to continue her research in public health services and systems research to increase the quality and quantity of health care to underserved populations.

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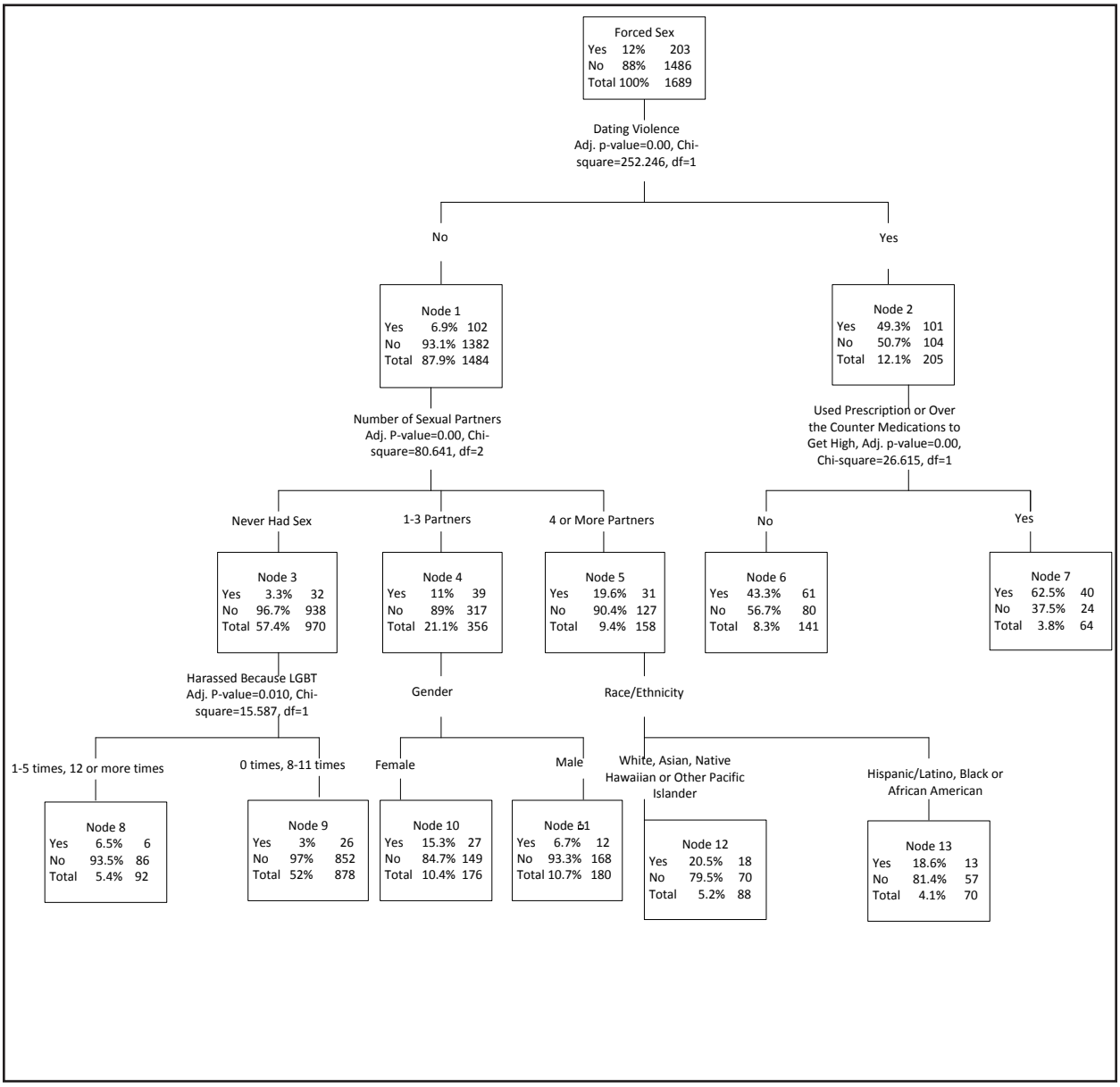
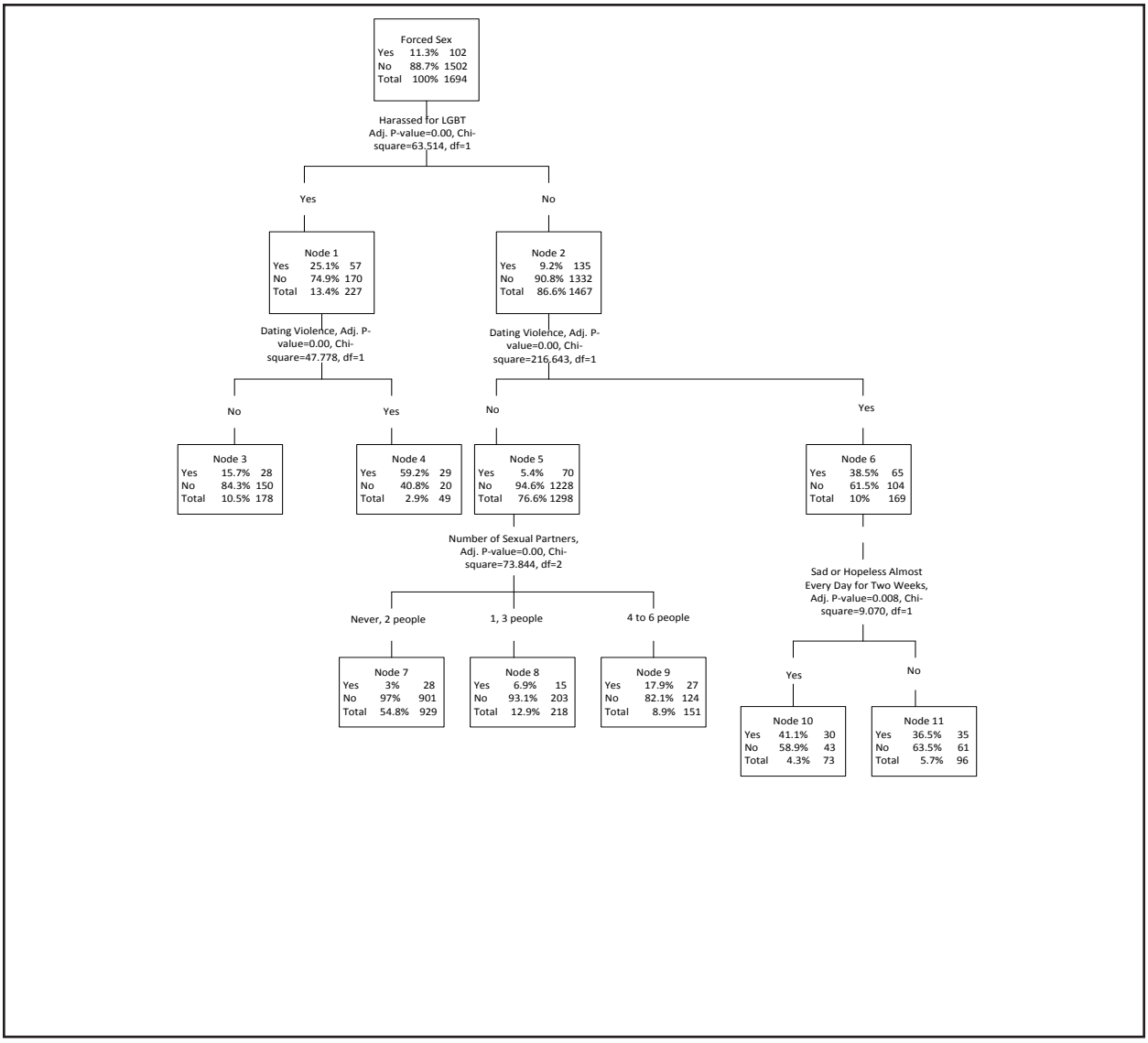
Appendix A

Initial Chi-Square Automatic Interaction Detection (CHAID) Model—Forced Sex



Appendix B

Final Chi-Square Automatic Interaction Detection (CHAID) Model—Forced Sex



Appendix C

Descriptive Statistics for the Final Segmentation

Variables	Response Options	Had Been Harassed for Being Gay, Lesbian, or Bisexual and Had Experienced Dating Violence	Had Not Been Harassed for Being Gay, Lesbian, or Bisexual and Had Not Experienced Dating Violence
Gender	Female	51.5%	51.8%
	Male	48.5%	48.2%
Physically Forced to Have Sexual Intercourse	Yes	64.3%	5.7%
	No	35.7%	94.3%
Lifetime Number of Sex Partners	I have never had sexual intercourse	12.0%	65.3%
	1 person	13.0%	14.7%
	2 people	12.0%	5.9%
	3 people	10.0%	3.2%
	4 people	2.0%	2.6%
	5 people	3.0%	1.9%
	6 people or more	48.0%	6.3%
Depressed	Yes	74.5%	22.2%
	No	25.5%	77.8%
Electronically Bullied	Yes	78.0%	12.6%
	No	22.0%	87.4%
Prescription Drug Use	Yes	56.4%	10.8%
	No	43.6%	89.2%

Appendix D

Logistic Regression for Forced Sex

Variable	Category	Sample Size	Beta	*p*	*OR*
#Sexual Partners	0 (reference)	2003	-	-	-
	1	501	0.691	<0.0001	1.995
	2	211	0.554	0.029	1.740
	3	136	0.966	<0.0001	2.627
	4	89	1.233	<0.0001	3.431
	5	61	1.365	<0.0001	3.916
	6+	283	1.551	<0.0001	4.715
Dating Violence	No (ref.)	2905	-	-	-
	Yes	379	1.968	<0.0001	7.158
Prescription Drugs	No (ref.)	2821	-	-	-
	Yes	463	0.577	<0.0001	1.780
Teased about Weight	No (ref.)	2552	-	-	-
	Yes	732	-0.318	0.030	0.728
Depression	No (ref.)	2343	-	-	-
	Yes	941	0.328	0.020	1.389
LGBT	No (ref.)	2874	-	-	-
	Yes	410	0.617	<0.0001	1.852
Gender	Male (ref.)	1588	-	-	-
	Female	1696	0.574	<0.0001	1.776
Constant	-	-	-3.465	<0.0001	