

Adolescents' Experiences of Sexual Assault by Peers: Prevalence and Nature of Victimization Occurring Within and Outside of School

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Abstract This study examined adolescent peer-on-peer sexual assault victimization occurring within and outside school. The sample consisted of 1,086 7th through 12th grade students, with a mean age of 15. Most of the respondents were White (54%) or Black (45%), and approximately half of respondents were female (54%). A modified version of the Sexual Experiences Survey was used to assess opposite sex sexual victimization in 7th through 12th grade students. Rates of peer sexual assault were high, ranging from 26% of high school boys to 51% of high school girls. School was the most common location of peer sexual victimization. Characteristics of assault varied by location, including type of victimization, victims' grade level, relationship to the perpetrator, type of coercion, and how upsetting the assault was. Distinctions between sexual assault occurring in and out of school are conceptualized with literature on developmental changes in heterosexual relationships and aggression.

Keywords Sexual assault · Peers · Schools · Violence · Victimization

Sexual assault victimization, defined as any form of unwanted sexual contact obtained through violent or non-violent means (U.S. Department of Justice 2008), continues

at alarmingly high rates among adolescents. The National Incident-Based Reporting System (NIBRS; Rennison 2002), which provides data on sexual assault reported to law enforcement agencies, indicates that sexual assault is most prevalent among adolescents in contrast to any other age group, with 33% of all victims falling within the ages of 13–17. Ninety-six percent of all offenders of sexual assault were male, and 91% of all victims were female. It is important to note, though, that prevalence rates based on reported incidents are likely underestimates of the problem; only half of all adolescent victims will tell anyone about the incident (Davis et al. 1993; Davis and Lee 1996) and only 6% will report the incident to authorities (Ageton 1983). Accordingly, the high rates of adolescent assault based on NIBRS data are likely a gross *underestimation* of the problem.

Estimates provided by community-based studies, which include reported and non-reported incidents, vary widely depending upon the measure of sexual assault used. Studies based on a single item measure of sexual assault (e.g., "Have you ever been sexually assaulted?") typically obtain much lower prevalence rates for both victimization and perpetration (Crowell and Burgess 1996; Poitras and Lavoie 1995). In contrast, more thorough measures of sexual assault (e.g., Sexual Experiences Survey; Koss and Gidycz 1985) obtain much higher prevalence rates for both victimization and perpetration (Crowell and Burgess 1996). These thorough measures include multiple questions to get at a variety of sexual behaviors (e.g., petting, kissing, intercourse) coerced through a variety of methods (e.g., verbal pressure, use of authority, violence). Studies using these more thorough measures of sexual assault indicate that approximately half of adolescent girls and 15% of adolescent boys have been sexually assaulted (Maxwell et al. 2003; Poitras and Lavoie 1995). Lower rates of

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victimization were found in all studies using the less rigorous measures of sexual assault (Kilpatrick et al. 2003); and higher rates of perpetration have been found in other studies (Lanier 2001; Vicary et al. 1995; Davis et al. 1993). Although community-based estimates of adolescent acquaintance assault are variable and a result of inconsistent assessment across studies, these estimates indicate that adolescent sexual assault is more widespread than the picture presented by the NIBRS data.

The majority (66%) of adolescent assault is perpetrated by an acquaintance of the victim (NIBRS; Rennison 2002). Research on adolescent acquaintance assault has primarily focused on sexual victimization within dating relationships; this body of literature typically examines emotional, physical, and sexual assault together under a broader rubric of “dating violence.” Prevalence rates for adolescent dating violence vary from 9–77% for girls and 6–67% for boys (Ackard and Neumark-Sztainer 2002; Bergman 1992; Schubot 2001; Vicary et al. 1995); the wide range of estimates is likely due to variation in the definition of violence, with some studies measuring personal insults (e.g., “put down my looks”) and others measuring only the most serious forms of violence, such as physical or forced sex. Adolescent girls engage in aggressive behaviors toward dating partners at rates that are comparable to, or exceed, those for boys when considering verbal, emotional, relational, physical and sexual aggression (Chase et al. 2002; Linder 2002). However, when examining just sexual victimization, adolescent girls are more likely than their male counterparts to be the recipient rather than the aggressor of violence in dating relationships (Foshee 1996).

There are many other types of peer acquaintance relationships besides dating relationships in which sexual assault occurs. The few studies differentiating among types of acquaintance relationships indicate that 31% (Smalls and Kerns 1993) to 62% (Ageton 1983) of adolescent girls’ acquaintance assault is committed by a boyfriend; acquaintance sexual assault is also committed by friends, friends of friends, and peers victims met in a social context (e.g., party). Although there is a common feature among all of these relationships—specifically that consenting social interaction occurs prior to assault—the victim’s knowledge of the perpetrator can vary significantly among these acquaintance relationships. Assault within a long-term romantic relationship can provide the victim with considerable information about the nature and disposition of a sexual aggressor; in contrast, assault committed by someone the victim just met provides the victim minimal information about the aggressor. Thus, there appears to be considerable heterogeneity among assault cases that occur between adolescent acquaintances.

The few studies specifically focusing on victimization during adolescence and differentiating the type of

acquaintance relationships (Ageton 1983; Smalls and Kerns 1993) provide the most accurate information on the correlates and consequences of sexual assault by peers. More than half of the cases involved verbal persuasion, and approximately a third involved pushing, slapping, or mild roughness and approximately one tenth involved physical beating or choking (Ageton 1983). Rape occurred more often within dating relationships than other type of acquaintance relationships (Smalls and Kerns 1993). These findings suggest that differences in the type of acquaintance relationship between adolescent victim and perpetrator are associated with the types of aggression used during the assault.

Although it is likely that many of these incidents of peer-on-peer sexual assault take place within the school context, few studies have examined the prevalence of sexual assault occurring within versus outside of school. One exception is the American Association of University Women’s (AAUW 2001) study of harassment within school. Questions pertaining to sexual harassment in this study included items involving physical contact of a sexual nature, which fall within the Department of Justice’s definition of sexual assault (U.S. Department of Justice 2008). Based on these physical sexual harassment items from the AAUW study, it appears that sexual assault within the school context is disconcertingly high. Among adolescent girls in the AAUW study, 29% reported being touched, grabbed, or pinched in a sexual way, 7% reported being forced to kiss, and 3% reported being forced to do something sexual other than kissing. Although lower than rates for girls, adolescent boys also reported being sexually assaulted by peers in school: 20% reported being touched, grabbed or pinched in a sexual way, 7% reported being forced to kiss, and 5% reported being forced to do something sexual other than kissing. This study provides initial evidence of substantial rates of sexual assault within school contexts.

Even though little is known about adolescent sexual assault occurring within schools, the AAUW report, as well as numerous other studies on sexual harassment, indicates that peer-on-peer sexual aggression within schools is commonplace. Sexual harassment is typically defined as non-physical sexual contact, including sexual remarks, jokes, gestures, looks, showing sexual pictures, messages, or notes, and spreading sexually-related rumors. Estimates of the number of middle and high school students who report being sexually harassed within school has ranged from 83–92% for girls and 57–79% for boys (AAUW 2001; Felix and McMahon 2006; Fineran and Bennett 1998; Lee et al. 1996). Moreover, within school sexual harassment has been associated with a variety of negative outcomes among its victims, including absenteeism, decreased quality of school performance, loss of friends,

truancy, and internalizing and externalizing psychological symptoms (AAUW 2001; Lee et al. 1996; PCSW 1995; Stein et al. 1993). Such findings indicate that sexual aggression occurring within the school setting has significant negative implications for the victims.

There has been an increased concern over sexual harassment and assault occurring on secondary school campuses as a result of recent court cases that found schools liable for failing to protect students from victimization by other students (e.g., *Davis v. Monroe County Board of Education* 1999). There is also a growing awareness that sexual aggression occurring in school has negative ramifications on the victim's attendance, success, and attachment to school (Duffy et al. 2004), which is particularly disconcerting given that involvement in school can serve as a protective factor for adolescent health risk behaviors, such as substance use (Beyers et al. 1999). However, the push for school sexual aggression prevention efforts are in absence of a solid understanding of the nature of sexual violence that is occurring within schools, particularly when considering sexual aggression that meets the definition of sexual assault (i.e., involving physical contact). Consequently, it is critical both in terms of the schools' legal liability and in terms of students' psychological and academic wellbeing to gain a better understanding of the extent and nature of sexual aggression occurring within the school setting.

How might the school context impact the prevalence and nature of adolescent sexual aggression? The school setting is arguably the primary setting in which adolescents socialize with other peers their age. Youth may choose to socialize with friends outside of school; however, within school, they are required to come in contact with a variety of peers that they may or may not view favorably or be on friendly terms. In addition to the increased contact with other peers, there can be minimal adult supervision on school premises at times, which may further increase the likelihood of peer-on-peer aggression. For example, the lack of adult supervision has long been considered a risk factor for bullying and physical victimization occurring on school grounds, with bullying most likely to occur in locations where teachers are not present, such as locker rooms, school buses, and hallways (Glover et al. 2000). With the high degree of peer contact occurring on school grounds, coupled with opportunities for minimal adult supervision, it is likely that the school setting increases the odds for peer-on-peer sexual aggression. However, the lack of adult supervision outside of the school environment changes as youth transition through adolescence, with adult supervision increasing for boys but decreasing for girls during the transition from early to late adolescence (Jacobson and Crockett 2000). These findings suggest that peer-on-peer sexual violence is more likely to occur on

school grounds (when contrasted to other locations) during early adolescence for females and later adolescence for males. Moreover, although the frequency of sexual aggression is arguably higher on school grounds than other locations, research on physical aggression among adolescents suggests that less severe forms of aggression may occur within the school setting. For example, school climate has been found to be a stronger predictor of less serious youth violence than of serious misconduct (Welsh 2000). Thus, previous research on violence, school setting, and adult supervision suggests that the school context may impact the prevalence and nature of peer-on-peer sexual assault; however, the impact may not be the same for young and older adolescents and for male and female adolescents.

Hypotheses

The purpose of the current study was to examine the prevalence of adolescent acquaintance sexual assault among middle and high school students occurring within and outside school grounds. Based on the fact that the school setting provides one of the primary settings in which youth come in contact with each other, and based on previous research documenting the high rates of sexual harassment on school grounds (AAUW 2001), we hypothesized that peer-on-peer sexual assault would be more likely to occur on school grounds in contrast to other locations. However, given the change over the course of adolescence in adult supervision in the home environment, we hypothesized that the prevalence of sexual assault in the school environment relative to other contexts would change over the course adolescence, with a higher risk for assault occurring at school (in contrast to other contexts) during early adolescence for girls and a higher risk for assault occurring at school (in contrast to other contexts) during later adolescence for boys. Furthermore, given that peer-on-peer physical violence on school grounds has been found to be less severe than violence off school grounds (Welsh 2000), we hypothesized that victims of sexual assault on school grounds would report being less upset by the event than victims of sexual assault occurring outside of the school context.

Method

The study used a cross-sectional web-based self administered survey of students from a school district in southeastern Michigan. The university subject review board approved the protocols for this study and a Certificate of Confidentiality from NIH was obtained. All

students enrolled in the 7–12th grades during 2005 were recruited to participate. The survey included 418 questions that asked about students' alcohol, tobacco, illicit and prescription drug use; their academic performance; and instances of interpersonal violence. Of the 1,594 7–12th grade students within the school district, 1,160 (72.8%) returned consent forms in which parents provided permission for their children to participate. Ultimately, 93.6% ($n = 1086$) of students with parental permission completed the survey, with absenteeism being the primary reason for not completing the survey. The final response rate of 68.1% was calculated using guideline #2 of the American Association of Public Opinion Research (2007).

The school district is located near a large Midwest metropolitan area and draws from four distinct communities: an upper middle class community (median income \$81,000), two middle-class communities (median incomes \$46,000 and \$49,000), and an economically impoverished community (median income \$22,000). Based on data provided by the school district, approximately 46% receive free/reduced-price lunch. The majority of the students in the school were black (58%), with a large minority of white (39%), and a few from other racial/ethnic groups (3%).

Students and their parents were notified about the upcoming study in a letter sent from their school via U.S. Mail. Because most of the respondents were under 18 years of age, active parental consent was obtained for all minors who participated. Students returned consent forms to their teachers, who in turn, gave the consent forms to the research team. Prior to the administration of the survey, parents were invited to view the survey via the web on their own or school computers.

The survey was conducted over the Internet from computer labs at the respective schools. Students were excused from one class period in order to report to the computer lab for the survey session. The school administrators scheduled survey sessions on a class-by-class basis over the data collection period, although make-up sessions were provided. The web-survey was maintained on a hosted secure Internet site running under the secure sockets layer (SSL) protocol to insure respondent data were safely transmitted between the respondent's browser and the server. Students were given a piece of paper with a unique pre-assigned PIN numbers; these numbers allowed students access to the survey without any identifying information. Following the completion of the survey, students were provided with the contact information for school-based counseling services as well as community-based organizations. School officials and parents were unable to access any personally identifiable information connected with the data. The above web-based survey method was selected as a means to collect data because similar computer-based surveys have been shown to increase reporting of highly sensitive

and illegal behaviors relative to hardcopy surveys (Lessler et al. 2000; Turner et al. 1998) and because it provides an easy way to test large groups of students in a relatively short period of time.

Sample

The sample used for this study included 399 middle school students (i.e., grades 7th and 8th) and 687 high school students. Fifty-four percent ($n = 576$) were female and 46% were male ($n = 490$). Fifty-two percent ($n = 565$) were White, 45% were Black ($n = 484$), and the remaining 3% consisted of Hispanic ($n = 14$), Asian American ($n = 16$), or American Indian/Alaska Native ($n = 5$). The demographic characteristics varied from data provided by the school district, with a lower percentage of African-Americans included in our sample. Age ranged from 12 to 19 years, the average age of respondents was 14.81 ($SD = 1.72$).

Instruments

Demographic Characteristics

Respondents were asked about basic demographic information, including gender, race, age, and grade level.

Sexual Harassment and Sexual Assault

Information on sexual assault was measured with the Sexual Experiences Survey (SES; Koss and Gidycz 1985). The SES is a self-report survey instrument consisting of 10 items designed to obtain information about degrees of sexual aggression, ranging from sexual harassment through sexual acts involving physical contact, including penetration. Previous research using adult samples report the internal consistency of these items are .74 for victimization among women and .89 for perpetration among men, and a test-retest consistency within a 1 week time period was .93 (Koss and Gidycz 1985). An adolescent version of the SES has been established and validated (Cecil and Matson 2006). The adolescent modified version refers to the perpetrator as a peer rather than a parent, to distinguish childhood sexual abuse. As with the adult version, respondents are asked about various types of victimization that occur with various types of coercion. Items that do not involve physical contact are defined as sexual harassment, whereas items involving physical contact are defined as sexual assault. Previous research indicates that the adolescent version of the assault summary score has a high level of internal consistency (.80), as measured by the KR-20, and has satisfactory concurrent validity (Cecil and Matson 2006).

For the present study, the adolescent version of the SES was used. SES items that did not involve physical contact were defined as sexual harassment, where as items involving physical contact were defined as sexual assault. Respondents also were asked to indicate the type of coercion used by the perpetrator, ranging from verbal pressure to physical force (see Table 1 for a list of items). Adolescents who were 16 years of age or older were asked directly about oral sex and sexual intercourse. Following these items, adolescents of all ages were asked whether “something else” happened and asked to describe what happened. Open-ended responses then were grouped into the categories of: (1) kissing, hugging, or sexual touching, (2) oral sex, (3) attempted rape, and (4) rape. If respondents indicated that something else happened but did not describe the event, responses were included in the fifth category of “something else sexual.” In the present study, the SES items had an internal consistency of .80.

Sexual Assault Characteristics: How Upsetting

Students who reported sexual assault were asked to select the most upsetting assault experience and were given additional questions pertaining to that event. Specifically, respondents were asked “How upsetting the event was this for you?” and given the following response options: “not at all bothered,” “bothered a little bit,” “somewhat upsetting,” “very upsetting.”

Type of Coercion

Respondents were asked to indicate whether any of the following was used as a means of coercion: “overwhelming you with continual arguments and pressure?” “Showing displeasure (e.g., sulking, making you feel guilty, swearing, getting angry) until he/she got his/her way?” “By giving you alcohol or drugs?” or “By threatening or using some kind of physical force?” Respondents were allowed to select more than one form of coercion.

Relationship to Perpetrator

Respondents were also asked “How well did you know this person?” and given the following response options: “someone I just met,” “someone I knew before, but not well,” “friend,” “casual date,” “boy/girlfriend,” or “other.”

Location of Sexual Assault

Finally, respondents were asked, “Where did this happen?” and asked to select all that apply from the following response options: “My house or apartment,” “Someone else’s house or apartment,” “At a party,” “At school,” “Other,” and “Rather not say.” For analyses that examined whether sexual assault took place on school grounds, a categorical variable was created by coding all “At school”

Table 1 Prevalence of sexual harassment and sexual assault by grade level and gender

Sexual victimization	Females		Males	
	Middle school (<i>n</i> = 193–197) ^a % (<i>n</i>)	High school (<i>n</i> = 109–362) % (<i>n</i>)	Middle school (<i>n</i> = 180–185) % (<i>n</i>)	High school (<i>n</i> = 98–287) % (<i>n</i>)
Sexual harassment				
Stared at in a sexual way	48.7% (94)	65.4% (233)	33.7% (61)	33.2% (95)
Sexual jokes	42.0% (81)	56.8% (205)	26.8% (49)	23.7% (68)
Sexual/obscene phone calls	18.3% (36)	19.4% (70)	14.1% (26)	11.6% (33)
Sexual/obscene messages	9.6% (19)	16.9% (61)	13.7% (25)	11.2% (32)
Sexual assault				
Kissed, hugged, touched	37.1% (72)	50.7% (182)	28% (51)	25.9% (74)
Attempted rape	1.0% (2)	1.2% (2)	0	0
Oral sex ^b	–	5.5% (6)	–	4.1% (4)
Rape ^b	–	11.8% (13)	–	3.1% (3)
Something else sexual	7.2% (14)	11.2% (20)	3.8% (7)	2.7% (5)
Any sexual assault	39.9% (77)	52.5% (189)	28.2% (51)	26.3% (75)

Note: Respondents could report multiple forms of sexual victimization

^a Sample sizes varied per item because only respondents who were 16 years of age or older were asked questions about oral sex and sexual intercourse

^b Questions pertaining to oral sex and rape were not asked of middle school students

responses as a value of 1 and all other response options, excluding “Rather not say,” as a value of 0.

Analysis Strategy

Frequencies were used to provide descriptive information on the rate of sexual harassment and assault for middle and high school girls and boys. Binary logistic regression models in which grade, gender, and their interaction was regressed on each of the binary sexual harassment and assault items. The main effects were first examined with a series of regressions in which each predictor variable was examined separately. Next, all of the significant main effects were included in one model to determine redundant explanation of variance. For the interaction effects, the main effect for each variable was added to the equation first, followed by the interaction term. Binary logistic regression models in which an assault characteristic variable, grade, gender, and all two- and three-way interactions were regressed on whether the assault occurred in or outside of school. Analysis of variance was used to determine whether these groups differed in how upset they were by the experience.

Results

Rates of Sexual Harassment and Assault

Table 1 presents the prevalence of sexual harassment and assault for middle and high school students. Among middle school girls, over half (58%) reported having been sexually harassed; most common forms of harassment included being “stared at in a sexual way” and being the “recipient of sexual jokes.” Approximately 40% of middle school girls reported being sexually assaulted by peers. One-third of middle school girls reported having been “kissed, hugged, or sexually touched,” and one-tenth reported being “made to do something else sexual.” More high school than middle school girls reported being assaulted, ($\chi^2(1) = 8.0$, $p < .01$) and harassed ($\chi^2(1) = 12.71$, $p < .001$). Three out of every four high school girls reported being sexually harassed; again, most common forms of harassment were being “stared at in a sexual way” and being the “recipient of sexual jokes.” Over half of high school girls reported being sexually assaulted (53%). Most common forms of assault involved being “kissed, hugged, or sexually touched” (51%), but a sizable minority reported having been forced to engage in other sexual behaviors, including oral sex (6%), rape (12%), or attempted rape (1%), or something else sexual (11%).

Rates for middle and high school boys were lower than their female counterparts in terms of both sexual

harassment ($\chi^2(1) = 67.57$, $p < .001$) and assault ($\chi^2(1) = 7.22$, $p < .01$). Approximately 40% of both middle and high school boys reported having been sexually harassed; as with girls, most common forms of harassment were being “stared at in a sexual way” and being the “recipient of sexual jokes.” Slightly more than one-fourth of boys (middle school = 28%, high school = 26%) reported being sexually assaulted by peers, most often in the form of being “kissed, hugged, or sexually touched” (middle school = 28%, high school = 26%). A small number of boys reported being raped (3%) or something else sexual (middle school = 4%, high school = 3%).

Intercorrelations among the predictor variables (Table 2) show that being female was related to most types of victimization and being in high school was related to being stared at, receiving sexual jokes, and being kissed or sexually touched. Binary logistic regressions were conducted to determine whether there were differences in the rates of harassment and assault based on grade and gender (Table 3). For being “stared at in a sexual way” and “sexual jokes,” the main effects of gender, grade level, and their interactions were significant. Thus, the likelihood of being harassed in these ways was three times higher for girls than boys and almost one and a half times higher for high school students than middle school students. Furthermore, the significant interaction term indicates that high school girls were twice as likely as middle school girls to report these forms of sexual harassment. In terms of sexual or obscene phone calls, girls were almost twice as likely as boys to be harassed and high school girls were more than twice as likely as other groups to be the recipient of sexual or obscene messages via the computer.

Of the four types of sexual abuse, logistic regressions were unable to be performed on two types, oral sex and sexual intercourse, because of the low frequency of these types of assault. Ten respondents reported forced oral sex; of these 10 cases, 60% were high school girls ($\chi^2 = 23.44$, $p < .001$). Rape was reported at a slightly higher rate, specifically 15 cases, and again, the majority (73%) of these cases occurred among high school girls ($\chi^2 = 14.21$, $p < .01$). There were significant main and interaction effects (see also Table 3) when grade and gender were regressed upon assault in the form of “kissing, hugging, and sexually touching.” Girls were more than twice as likely as boys to experienced forced kissing, hugging, or sexual touch; moreover, high school girls were more than twice as likely as middle school girls to report this type of assault. In terms of being forced to do “something else sexual,” there was a significant main effect for gender indicating that girls were three times as likely as boys to report this type of assault.

Chi-square tests indicated that the extent to which the experience was upsetting for the victim differed for male

Table 2 Intercorrelations for type of assault and predictor variables

	GL ^a	G ^b	SASW ^c	SJ ^c	S/OPC ^c	S/OCM ^c	K, T, ST ^c
Grade level (GL) ^a	–						
Gender (G) ^b	.04	–					
Stared at in sexual way SASW ^c	.10**	.26***	–				
Sexual jokes (SJ) ^c	.08*	.27***	.57***	–			
Sexual/obscene phone calls (S/OPC) ^c	.00	.09**	.36***	.37***	–		
Sexual/obscene computer messages (S/OCM) ^c	.05	.04	.33***	.32***	.54***	–	
Kissed, hugged, sexually touched (K, H, ST) ^c	.07*	.19***	.51***	.51***	.40***	.35***	–
Something else sexual ^c	–.02	.11**	.27***	.24***	.42***	.35***	.32***

* $p < .05$, ** $p < .01$, *** $p < .001$ ^a Middle school = 0, High School = 1^b Male = 0, Female = 1^c No = 0, Yes = 1**Table 3** Binary logistic regression results predicting the prevalence of types of sexual harassment and assault based on gender, grade level, and their interaction

Type of sexual aggression	Gender ^a			Grade level ^b			Gender × Grade level		
	<i>B</i> (<i>SE</i>)	Wald	Odds ratio	<i>B</i> (<i>SE</i>)	Wald	Odds ratio	<i>B</i> (<i>SE</i>)	Wald	Odds ratio
Stared at in sexual way	1.12 (.13)	70.77**	3.07	.36 (.18)	7.20**	1.45	.69 (.28)	6.35**	2.00
Sexual jokes	1.22 (.14)	76.4**	3.37	.30 (.14)	4.3**	1.34	.73 (.29)	6.54**	2.08
Sexual/obscene phone calls	.60 (.18)	10.5**	1.80	.05 (.18)	.07	.95	.29 (.38)	.59	1.33
Sexual/obscene computer messages	.28 (.19)	2.02	1.38	.26 (.20)	1.60	1.30	.88 (.42)	4.5*	2.42
Kissed, hugged, sexually touched	.93 (.14)	45.48***	2.53	.26 (.14)	3.30	1.29	.71 (.29)	6.14*	2.03
Something else sexual	1.13 (.32)	12.10***	3.08	–.09 (.28)	.11	.91	.59 (.66)	.81	1.81

* $p < .05$, ** $p < .01$, *** $p < .001$ Number of cases in analyses ranged from 805 to 1002^a Male = 0, Female = 1^b Middle school = 0, High School = 1

and female students ($\chi^2 = 53.67$, $p < .001$). Female students reported being more upset by the assault, with 47.2% reporting that it was somewhat or very upsetting and only 13.2% of males reporting this degree of distress. How upsetting the assault was also differed for middle and high school students ($\chi^2 = 25.86$, $p < .001$). High school students tended to report being more upset, reporting that it was somewhat or very upsetting (middle school = 30%, high school = 38.4%) or bothered a little bit (middle school = 27%, high school = 40.8%).

Peer-on-peer sexual assault most often occurred on school grounds (44%), followed by someone else's house or apartment (21%), the respondent's house (10%), or parties (9%; see Table 4). Sixteen percent ($n = 47$) of assault occurred at other unspecified locations. The location of assault differed for high school and middle school students ($\chi^2 = 16.7$, $p < .001$). Over half (54%) of assaults reported by middle school students occurred at school in contrast to 39% of assaults reported by high school students. In contrast, high school students were more likely

Table 4 Location and assault characteristics by gender and grade level

Location of assault	Middle school % (<i>n</i>)	High school % (<i>n</i>)	Total % (<i>n</i>)
My house	7.4% (7)	11.2% (23)	10.0% (30)
Someone else's house	14.9% (14)	24.3% (50)	21.3% (64)
At a party	2.1% (2)	12.1% (25)	9.0% (27)
School	54.3% (51)	39.3% (81)	44.0% (132)
Other	21.3% (20)	13.1% (27)	15.7% (47)
Total	100% (94)	100% (206)	100% (300)

than middle school students to report assaults occurring at their house, someone else's house, or parties. Almost half (45.8%) of adolescent acquaintance assault was committed by a friend, followed by someone the victim knew but not well (18.5%), a girl/boyfriend (15.4%), someone the victim just met (8.2%), and a casual date (2.5%). There were no significant gender or grade level differences for the perpetrator of the assault.

Sexual Assault in and Outside of School

Table 5 presents the frequency and characteristics of only the most upsetting assaults occurring in and outside of school for middle and high school girls and boys. Having been kissed, hugged, or sexually touched constituted the majority of reported upsetting sexual assault for both in and out of school experiences (66.7–98.2%). Friends were the most frequently reported perpetrators. This finding also appeared to vary by gender and grade level, with rates ranging from 31.8% for middle school males assaulted outside of school to 62.7% of high school females assaulted in school.

Table 6 presents the intercorrelations of variables used in predicting assault in school versus out of school. Table 7 presents the betas, standard errors, Wald statistics, and

odds ratio for the logistic regressions predicting assault occurring in school versus out of school, in terms of the victim characteristics (grade level, gender), assault characteristics, and their interactions. Characteristics of the assault and victim were first entered into the regression equation separately. The one main effect positively characterizing sexual assault in school was perpetration by a friend: sexual assault in school was twice as likely as assault out of school to be perpetrated by a friend. Other significant effects described out of school assault, in contrast to in school assault, including being more likely to be perpetrated by a boy/girlfriend, more likely to involve the use of arguments and drugs as forms of coercion, and being more upsetting for the victim. Moreover, being a high school student, in contrast to a middle school student, increased the likelihood of assault occurring out of the

Table 5 Adolescent experiences of sexual victimization, by gender, location, and grade level

	Adolescent girls				Adolescent boys			
	Middle school		High school		Middle school		High school	
	Out of school % (n)	In school % (n)	Out of school % (n)	In school % (n)	Out of school % (n)	In school % (n)	Out of school % (n)	In school % (n)
Type of most upsetting sexual assault								
Kissed, hugged, touch	75% (21)	90% (27)	72.5% (74)	98.2% (55)	66.7% (16)	100% (13)	68.8% (22)	90.9% (20)
Oral sex	N/A	N/A	2% (2)	0	N/A	N/A	0	0
Sexual intercourse	N/A	N/A	10.8% (11)	0	N/A	N/A	9.4% (3)	4.5% (1)
Something else sexual	25% (7)	10% (3)	14.7% (15)	1.8% (1)	33.3% (8)	0	21.9% (7)	4.5% (1)
Relationship to perpetrator								
Just met	3.1% (1)	10.5% (4)	8.3% (9)	6.8% (4)	4.5% (1)	15.4% (2)	18.8% (6)	4.5% (1)
Knew, not well	3.1% (1)	15.8% (6)	17.4% (19)	25.4% (15)	22.7% (5)	30.8% (4)	18.8% (6)	27.3% (6)
Friend	40.6% (13)	44.7% (17)	39.4% (43)	62.7% (37)	31.8% (7)	38.5% (5)	34.4% (11)	54.5% (12)
Casual date	6.3% (2)	2.6% (1)	2.8% (3)	0	4.5% (1)	7.7% (1)	0	0
Girl/Boyfriend	21.8% (9)	18.4% (7)	16.5% (18)	3.4% (2)	22.7% (5)	7.7% (1)	21.9% (7)	4.5% (1)
Other	18.8% (6)	7.9% (3)	15.6% (17)	1.7% (1)	13.6% (3)	0	6.3% (2)	9.1% (2)
Type of force								
Arguments								
Yes	17.6% (6)	13.9% (5)	38% (41)	22.8% (13)	41.7% (10)	8.3% (1)	29% (9)	23.8% (5)
No	82.4% (28)	86.1% (31)	62% (67)	77.2% (44)	58.3% (14)	91.7% (11)	71% (22)	76.2% (16)
Displeasure								
Yes	22.9% (8)	19.4% (7)	37.8% (42)	29.8% (17)	33.3% (8)	25% (3)	28.1% (9)	47.6% (10)
No	77.1% (27)	80.6% (29)	62.2% (69)	70.2% (40)	66.7% (16)	75% (9)	71.9% (23)	52.4% (11)
Drugs								
Yes	11.1% (4)	2.7% (1)	8.8% (10)	1.8% (1)	8.3% (2)	0	6.1% (2)	4.8% (1)
No	88.9% (32)	97.3% (36)	91.2% (104)	98.2% (55)	91.7% (22)	100% (12)	93.9% (31)	95.2% (20)
Physical force								
Yes	17.1% (6)	13.5% (5)	20.4% (22)	15.8% (9)	8.3% (2)	25% (3)	9.1% (3)	9.5% (2)
No	82.9% (29)	86.5% (32)	79.6% (86)	84.2% (48)	91.7% (22)	75% (9)	90.9% (30)	90.5% (19)
How upsetting	2.24 (1.09)	2.17 (.97)	2.84 (1.05)	2.46 (.8)	1.3 (.7)	1.69 (1.18)	1.73 (.88)	1.73 (.46)

Note: Respondents were asked to identify the most upsetting assault experience and describe characteristics of this. In a few cases, new reports of sexual victimization were made at this point in the survey and some respondents refused to answer. Thus, rates may differ from those in Table 1

Table 6 Intercorrelations for location of assault and sexual assault characteristics

	Location ^a	GL ^b	G ^c	CbyA ^d	CbyD ^d	PbyF ^d	PbyG/B ^d
Grade level (GL) ^b	-.13*	–					
Gender (G) ^c	-.01	.04	–				
Coercion by arguments ^{a,d} (CbyA)	-.19**	.11*	-.01	–			
Coercion by drugs ^{a,d} (CbyD)	-.14*	0	.03	.19**	–		
Perpetrated by friend ^{a,d} (PbyF)	.15**	.06	.06	-.11	0	–	
Perpetrated by girl/boyfriend ^{a,d} (PbyG/B)	-.18**	-.11*	-.01	.10	-.04	-.39***	–
How upsetting (HU) ^d	-.13*	.23***	.41***	.21***	.01	-.12*	-.08

* $p < .05$, ** $p < .01$, *** $p < .001$

^a Location: Out of School = 0, In School = 1

^b Grade Level: Middle School = 0, High School = 1

^c Male = 0, Female = 1

^d No = 0, Yes = 1

Table 7 Binary logistic regression results predicting in-school versus out-of-school assault

Characteristic of assault/victim	<i>B</i> (<i>SE</i>)	Wald	Odds ratio
Main effects			
Coercion by arguments ^a	-.87 (.30)	8.18**	.42
Coercion by drugs ^a	-2.14 (.77)	7.77**	.12
Perpetrated by friend ^a	.61 (.26)	5.64*	1.83
Perpetrated by girl/boyfriend ^a	-.91 (.39)	5.65*	.40
How upsetting	-.26 (.13)	4.19*	.77
Female ^b	.03 (.29)	.02	1.04
High school student ^a	-.99 (.29)	11.37***	.37
Interaction effects			
Female and high school student	2.64 (.91)	8.48**	13.97
Female and how upsetting	.67 (.35)	3.68*	1.96
High school and how upsetting	.61 (.30)	3.97*	1.83

* $p < .05$, ** $p < .01$, *** $p < .001$ Number of cases in analyses ranged from 240 to 253

^a No = 0, Yes = 1

^b Male = 0, Female = 1

school. There were no significant differences between in school and out of school assault in terms of being perpetrated by a casual date, someone who knew the victim, but not well, or someone who the victim just met. Furthermore, there were no significant differences between in school and out of school assault in terms of the use of showing displeasure or use of physical force.

All characteristics that predicted assault occurring in and out of school were included simultaneously in a regression model. Variables that were significant in the bivariate analyses continued to be significant in the regression model with the exception of being perpetrated by a boy/girlfriend,

coercion through arguments, and being upset by the experience. For each of these three variables, the inclusion of one of the other two variables eliminated its significance, indicating that all three variables overlapped in their explanation of in school versus out of school assaults.

The moderating effects of gender and grade level on the relationship between the assault characteristics and location of assault were examined by including interaction effects of gender (or grade level) and the assault characteristic. Three interaction terms were significant: being a high school female, being female and finding the experience upsetting, and being a high school student and finding the experience upsetting. These findings indicate that out of school assault most often occurred for high school girls who found the experience to be upsetting.

Discussion

The purpose of this study was to document the rates and characteristics of adolescent acquaintance sexual assault occurring within and outside the school environment. Corroborating previous research on the prevalence of adolescent sexual assault committed by peers (e.g., Maxwell et al. 2003; Poitras and Lavoie 1995), high rates of sexual harassment and assault were found among middle and high school students, regardless of where the assault occurred. Expanding beyond previous studies, this research more clearly delineates differences between middle and high school students in the prevalence of adolescent sexual assault committed by peers. We found that approximately 50% of high school girls reported being assaulted, with one-fourth of high school girls experienced less invasive forms of violence (e.g., forced kissing, making out, being fondled) and the other fourth experienced invasive forms of assault, including rape, attempted rape, and forced to

perform fellatio by peers. Although sexual assault was less prevalent than for high school girls, middle school girls reported high rates of sexual assault by their peers. One-third of middle school girls experienced less invasive forms of assault (i.e., kissing, hugging, sexual touching), and 10% reported more invasive assault. One-fourth of all boys reported being sexually assaulted, regardless of whether they were middle or high school students. All but 2% of these cases involved less invasive forms of assault. Given the distinctions among these groups in the prevalence of assault, and in particular the prevalence of invasive forms of assault, it is not surprising that they also differed in how upset they were by the experience. Half of the boys (53%) reported not being bothered at all by the incident in contrast to 15% of the girls. Conversely, half of the girls (48%) reported being somewhat or very upset by the experience in contrast to 13% of the boys. Although the rates of assault were high for both boys and girls in the study, they were particularly high and damaging for the girls.

Approximately half of all peer-on-peer sexual assault in this study was perpetrated by a friend. Perpetrators also included someone the victim knew but not well, a girl/boyfriend, and someone the victim just met. Our findings contrast with previous research that reported boy/girlfriends were the most common perpetrator of acquaintance assault among adolescents. It may be that the nature of acquaintance assault has changed from previous generations. Although 62% of adolescent assault was committed by a boyfriend or a date in the late 1970s (Ageton 1983), estimates from the 1990s (Smalls and Kerns 1993) indicate that only 31% of acquaintance perpetrators were boyfriends, whereas 22% were friends, and 14% were known peers. Our study indicates that only 15% of acquaintance assault was perpetrated by a boy/girlfriend. Such changing trends may reflect the more casual nature of romantic and sexual encounters of contemporary youth (Manning et al. 2006). It is important to note that any speculations on the changing trends of acquaintance sexual assault among adolescents are tentative due to the dearth of studies on adolescent assault that differentiate among the types of acquaintance relationships. Regardless, our study points to the importance of future research to recognize distinctions in the types of adolescent peer relationships and their implications for adolescent sexual assault.

The majority of acquaintance sexual assault in this study occurred on school grounds, although this figure was significantly higher for middle school students (54%) than high school students (40%). The different rates for middle and high school students do not appear to be due to the fact that assault that “moves” from in to out of school as adolescents transition to high school. In contrast, the frequency of assault occurring in school appears to remain constant during the transition from middle to high school,

or in the case of girls, the frequency of assault actually increases during the transition to high school. Instead, sexual assault is less likely to occur on school grounds for high school students because the increase in out of school assault from middle to high school is more dramatic than the increase for in school assault. Out of school assault among high school students was most likely to occur at someone else’s house, the victim’s house, or parties. Although the number of cases of peer-on-peer assault occurring in school remained constant (for boys) or increased (for girls) from early adolescence to later adolescence, it appears as though there is an increase (for boys and girls) in the number of cases of assault occurring outside of the school setting as youth transition through adolescence.

Even though more frequent, assault occurring on school grounds appears to be less severe than assault occurring outside of school. Assault occurring in school was less upsetting than assault occurring out of school, although half of adolescent girls report that being assaulted in school was somewhat or very upsetting. Even though boys also experience in-school assault, 91% reported that being assaulted in school did not bother them at all or bothered them a little bit. Slightly less than half of in school assault (45%) involves the aggressor’s display of displeasure, such as sulking, making the victim feel guilty, or getting angry, and one-third involves the aggressor’s use of continual arguments. Alarming, 14% of in school sexual assault involves the threat or use of physical force to coerce the victim. Although in-school assault is more common among high school students, one in four middle school students reported being assaulted in school, most often in the form of being kissed, hugged, or sexually touched. These findings suggest that there are significant differences in assault occurring in versus outside of school in terms of the frequency and nature of aggression.

The school context appears to be an ideal location to initiate prevention efforts of peer-on-peer sexual aggression. Currently there are numerous dating violence prevention programs that can be delivered within the school setting (see Wekerle and Wolfe 1999 for a review). These programs, which were based upon adult dating violence prevention programs but modified for the younger age group, seek to educate youth on the characteristics and warning signs of dating violence, to counter beliefs that blame the victim, and to describe normal relationship behaviors. Generally, these programs have demonstrated desired change in attitudes and behaviors. However, it is important to note that such programs might not fully address all types of peer-on-peer adolescent sexual assault given their limited focus on violence within dating relationships. Findings from the current study suggest that adolescent peer-on-peer sexual assault is most likely to be

committed by a friend of the opposite sex than a boy/girlfriend. Although future research is needed on the relationship dynamics that contribute to sexual assault between opposite sex friends, it is likely that such dynamics differ from the dynamics of dating relationships that foster sexual aggression within this context. It is plausible that research on men's misunderstanding of women's sexual intentions (Abbey 1987), which has been used to understand acquaintance sexual assault among adults, may provide a theoretical framework for developing effective prevention efforts of adolescent peer-on-peer sexual assault. Adolescent dating violence prevention programs that are currently delivered in the school setting may be able to address a wider range of adolescent sexual violence if they were to incorporate material into the program that specifically focused on assault occurring within non-dating acquaintance relationships.

There are limitations to this study that should be noted. The quality of data produced from a web-based version of the Sexual Experiences Survey has not been tested systematically and may have affected our findings. Moreover, generalizations are constrained since the sample was drawn from one school district and the survey relied on the self-report of students. Students with poor school attendance were likely underrepresented in this sample because the survey took place during school and an active consent returned to the school was required for participation. Low attendance may explain why our sample contained a lower percentage of African American respondents when compared to statistics provided by the school district. Thus, findings from this study need to be replicated with other student populations.

Furthermore, it is critical for future research to include other factors that are associated with sexual assault, such as history of childhood sexual victimization and family-of-origin substance abuse, to determine the complex relationships these characteristics have adolescent sexual assault among adolescents. It is likely that adolescents who are victimized by their peers during adolescence likely have a history of previous abuse, including childhood sexual assault. Future studies that examine pre-existing characteristics of both victims and perpetrators can provide a more nuanced understanding of peer-on-peer adolescent sexual violence.

Regardless of these limitations, this study provides valuable information on the prevalence, characteristics, and nature of acquaintance sexual assault among adolescents. Findings from this study indicate that peer-on-peer sexual assault is most likely to occur on school grounds and between friends; however, the location, type of force, and type of relationship between victim and perpetrator changes over the course of adolescence. Furthermore, this study provides school administrators a better understanding of

the nature and scope of sexual assault that occurs on secondary school campuses, which can be used to inform legal liability concerns and how to target prevention efforts. The difficulty of examining sensitive topics such as sexual assault within schools has hampered our understanding of adolescent sexual assault as it occurs among the wider community (Vicary et al. 1995). This study provides a rare picture of sexual victimization among adolescents, particularly given that such a small percentage of adolescent assault is reported to adults or authorities (Kilpatrick and Saunders 1997).

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