

Where and When Adolescents Use Tobacco, Alcohol, and Marijuana: Comparisons by Age, Gender, and Race

ELIZABETH A. GONCY, PH.D.,^{a,*} AND SYLVIE MRUG, PH.D.^b

^aClark-Hill Institute for Positive Youth Development, Department of Psychology, Virginia Commonwealth University, Richmond, Virginia

^bDepartment of Psychology, University of Alabama at Birmingham, Birmingham, Alabama

ABSTRACT. Objective: This study examined the location and time of adolescent use of cigarettes, alcohol, and marijuana. Age, gender, and racial differences in location and time of use were studied for each substance. **Method:** Using cross-sectional data collected through the school-wide Pride Survey, 20,055 students between the ages of 10 and 19 years (53.6% female, 55.1% Black, 44.9% White) in one metropolitan area reported on their frequency of cigarette, alcohol, and marijuana use, as well as the location and time of use of each substance. Chi-square tests compared the rates, locations, and times for each substance across boys and girls; Black and White students; and early, middle, and late adolescents. **Results:** Older adolescents reported higher rates of substance use at friends' homes, at school, and in cars and lower rates of alcohol use at home compared with younger youth. Males were more likely to report alcohol and marijuana use at school and on weeknights and

alcohol use in cars, whereas females were more likely to report alcohol and marijuana use on the weekends. No gender differences emerged for times and locations of cigarette use. Compared with Black youth, White adolescents were more likely to use all substances at friends' homes and on weekends; to smoke cigarettes at school, in the car, and on weeknights; and to use alcohol at home. Black adolescents were more likely to report using alcohol at home, at school, in cars, during and after school, and on weeknights and were more likely to report using marijuana at school. **Conclusions:** The location and time of adolescent substance use vary substantially by age, gender, and race. These differences may help tailor substance use prevention and intervention programs to specific subgroups of youth to improve program effectiveness. (*J. Stud. Alcohol Drugs*, 74, 288–300, 2013)

RESearch consistently demonstrates that tobacco, alcohol, and other drug use increases throughout adolescence. For example, prevalence of cigarette and alcohol use is 18% and 33% of 8th-grade students compared with 40% and 70% of 12th graders, respectively (Johnston et al., 2011). Among illegal drugs, marijuana remains the most used substance, with 16% of 8th-grade students and 46% of 12th-grade students reporting lifetime use (Johnston et al., 2011). Apart from these age-related increases, epidemiological studies reveal clear patterns of gender and racial differences. For all three substances, males report greater use than females, particularly in later adolescence (Centers for Disease Control and Prevention [CDC], 2010; Johnston et al., 2011; Myers, 2010). White youth are more likely to use cigarettes and alcohol than Black youth (CDC, 2010; Johnston et al., 2011; Kandel et al., 2011; Myers, 2010), whereas racial differences for marijuana use vary by age, with Black youth using more in early adolescence and White youth using more in middle and late adolescence (Johnston et al., 2011).

In understanding adolescent substance use, research has focused on individual and social-contextual factors (e.g., peers, parents) that predict use. Less is known about where and when adolescents engage in substance use, yet we generally accept that certain locations and times of day facilitate or hinder use (Jacobson, 2004; McLafferty, 2008). From a developmental contextual framework (i.e., Magnusson, 1995), individual behavior is greatly affected by the environment where it occurs, with contexts changing throughout development. For example, substance use during adolescence occurs primarily within the peer context during times of reduced adult supervision. Across adolescence, the peer context involves less parental monitoring and increased unsupervised time with friends; these contextual changes are associated with increased substance use (Steinberg et al., 1994). The specifics of the peer context, such as where and when youth spend time together, and constraints from adult monitoring are important factors in understanding the timing and location of substance use (e.g., Mennis and Mason, 2012), with these factors directly related to prevention and intervention efforts for adolescent substance use.

Most research examining timing of adolescent substance use has focused on parental monitoring (Dishion and McMahon, 1998). Lower rates of parental monitoring have been linked to smoking (Bohnert et al., 2009; Radziszewska et al., 1996), alcohol use (Chuang et al., 2005; DiClemente et al., 2001), and marijuana use (DiClemente et al., 2001). Increased unsupervised time with peers is also related to increased tobacco, alcohol, and marijuana use (Borawski et al., 2003;

Received: May 24, 2012. Revision: September 28, 2012.

This research was supported by National Institutes of Health Grant K01DA024700 (to Sylvie Mrug). Additional support was provided by the University of Alabama at Birmingham Office for the Advancement of Women in Science and Engineering sponsored by the National Science Foundation.

*Correspondence may be sent to Elizabeth A. Gony, Hunton House, Room 112, P.O. Box 842018, Richmond, VA 23284-2018, or via email at: egony@vcu.edu.

Osgood and Anderson, 2004). Examining locations and times when parental monitoring may be limited or nonexistent (e.g., before/after school, in cars) or when adolescents spend unsupervised time with peers (e.g., weeknights, weekends, in cars) is crucial to understanding adolescent substance use.

Early adolescent contexts are often constrained by greater parental supervision even during peer interactions. Thus, early adolescent alcohol use occurs most frequently at home or at a friend's home because of easy access to alcohol (Casswell et al., 1991; Harford and Spiegler, 1983) and location convenience (Anderson and Brown, 2010). Young adolescents also have the greatest opportunity to engage in substance use immediately after school, particularly when home with a sibling or friend and no adults (Flannery et al., 1999). Similarly, substance use risk is greater across settings (e.g., home, school, community centers) with inadequate or poor adult supervision (Richardson et al., 1993). Alternately, some young adolescents refrain from alcohol use at home because parental supervision or control is present (Harford and Spiegler, 1983; Mason and Korpela, 2009).

In middle adolescence, parental monitoring abates and youth enjoy more unsupervised time with peers. Following high school entry, students are exposed to new settings and times involving substance use (e.g., parties on weekends). Interaction with peers in these settings increases substance availability and consumption (Harford and Grant, 1987). Although afternoons are a risky time for younger adolescents, older adolescents engage in greater use in the evenings (Connolly et al., 1992; Sussman et al., 1998). Further, adolescents who spend evenings and weekends with their friends have increased odds of heavy alcohol use (Patrick and Schulenberg, 2010).

Late adolescents enjoy even greater freedom from parental monitoring of their whereabouts (Laird et al., 2003; Pettit et al., 2007), which may be conducive to more extensive substance use. By the end of high school, adolescents most often drink outside their own home—at another person's home, in an outdoor setting, or in a car (Harford and Grant, 1987; Lee et al., 1997). Additionally, older adolescents who drink heavily use alcohol in multiple contexts, including public places (e.g., parks, beaches) and school (Anderson and Brown, 2010).

Regarding gender differences, youth substance use is related to friend level of use, with this connection strongest for poorly monitored boys (Dishion et al., 1995). Similarly, males receive less parental monitoring than females (Laird et al., 2008; Webb et al., 2002) and are more likely to use substances during times of low monitoring (i.e., afternoons, evenings, weekends). Specifically, male tobacco and alcohol use increases for unsupervised boys (Cohen et al., 2002). Consistent with gender differences in rates of use, males engage in higher use across settings, with this difference varying with age. For example, one study demonstrated that males used marijuana more at home and school than

females, with this difference decreasing with increasing age (Sussman et al., 1998). Additionally, older males drink more often with peers at nonhome locations, whereas females drink more exclusively at home (Harford and Grant, 1987; Harford and Spiegler, 1983).

Previous research also indicates that parental monitoring and its role in substance use also vary by race. For example, less smoking occurs with increased parental supervision for White—but not Black—children (Bohnert et al., 2009). However, Black adolescents with limited supervision are more likely to use marijuana than those with more oversight (Richardson et al., 1989). Surprisingly, no studies have addressed racial differences in the locations of adolescent substance use. However, racial differences likely exist, given racial differences in rates of substance use and related social-contextual factors (e.g., parenting, school, and community characteristics; Lansford et al., 2004; Wilson, 1987). By understanding these subgroup gender and racial differences, more prevention and intervention efforts can be specifically tailored to reduce adolescent substance use within each group.

Present study

Existing literature provides insight into the location and time of adolescent substance use (Brown et al., 1989; Harford and Grant, 1987; Mason et al., 2004; Smith et al., 1985; Sussman et al., 1998; Windle, 2003), but little research has examined age, gender, and racial differences in location and time of use. Likewise, little is known about how location and time of use vary across different substances. The existing studies are outdated, limited to small, homogenous samples, or are representative of only a few locations or times. Given this limited information about location and time of substance use among subgroups, the present study aims to systematically characterize location and time of adolescent substance use with respect to differences by age, gender, race, and substance (alcohol, cigarettes, marijuana). Because key contextual factors for adolescent substance use (i.e., parental supervision and peer interactions) vary with development and across gender and race, a systematic analysis of these factors in relation to location and time of substance use can provide key information for targeted prevention and intervention efforts. Based on the literature reviewed, we formulated the following hypotheses:

(a) Substance use at home, where substances (especially cigarettes and alcohol) are more readily available, will be more common in early adolescence, whereas substance use in other locations (cars) will increase for older adolescents, particularly after age 16 as teens begin to drive independently.

(b) Weekends will be the most common time for substance use because of more unsupervised time with peers. With increasing age, use on weekends, after school, and on weeknights will increase.

(c) Boys will report substance use in a wider variety of out-of-home settings and across a greater variety of times than girls; girls will use substances primarily at home. These gender differences will increase with age.

(d) White adolescents will be more likely to use cigarettes and alcohol across all locations and times, whereas marijuana use is expected to be more common for Black youth across multiple times and settings.

Method

Participants

This study used data collected with the Pride Survey in a single metropolitan area in the southeastern United States. The Pride Survey (www.pridesurveys.com; Metze, 2000), a reliable and valid measure of student behavior, is a school-based assessment adopted by school districts in several states to annually monitor student substance use and violence. The present data were collected in the spring of 2005 from students attending 6th through 12th grade in two large school districts covering urban (39%) and suburban (61%) areas. Across the two school districts, 53% of students were eligible for free or reduced lunch. Anonymous paper surveys were administered to students in their classrooms by teachers or school counselors who explained the purpose of the survey, voluntary participation, and confidentiality. Participating students completed the survey privately and were able to ask questions if they needed help. Because the surveys were collected as part of routine educational practices, written parental consent was not required. The secondary data analyses of the data set were approved by the University of Alabama at Birmingham Institutional Review Board and followed established procedures for protection of human subjects.

A total of 27,333 students responded to the survey (80% participation rate). However, 5,930 students (21%) were excluded because they provided invalid or highly inconsistent answers or had missing data on one or more variables included in this report. Those excluded were more likely to be older, male, and non-White and reported higher levels of substance use. However, these differences were small. The racial composition of the remaining sample was 40.4% White, 53.3% Black, 1.7% Hispanic, 2.0% mixed, and 2.6% other minority. Because this study focused on racial differences and only White and Black students were present in sufficient numbers, students of other races/ethnicities were excluded. The final sample included 20,055 students ages 10–19 years ($M = 14.37$ years, $SD = 1.99$ years; 53.6% female, 44.9% White, 55.1% Black).

Measures

Grade level. Students reported on their current grade level. Based on developmental considerations and school transitions (middle vs. high school), students were combined

into three age groups: early adolescents (6th–8th grade, 53.8%), middle adolescents (9th–10th grade, 26.6%), and late adolescents (11th–12th grade, 19.7%).

Smoking. A single question asked about the frequency of cigarette smoking in the past year using an 8-point response scale ranging from *did not use* to *every day*. Answers were recoded into a dichotomous variable indicating whether the student smoked cigarettes in the past year (1) or not (0) because the data were positively skewed with many zeros (79%).

Alcohol use. Students responded to three questions assessing their frequency of drinking beer, wine coolers, and distilled spirits in the past year. Each item had the same 8-point scale as cigarette smoking. The three questions had adequate internal reliability ($\alpha = .85$). Answers were recoded into a single dichotomous variable indicating any alcohol use in the past year (1) or not (0) because of substantial skew with many zeros (64%).

Marijuana use. One question inquired about the frequency of smoking marijuana in the past year using the same 8-point response scale. Answers were recoded into a dichotomous variable indicating marijuana use in the past year (1) or not (0), again because of substantial skew with many zeros (84%).

Location and time of use. For each substance, students were asked where they usually used that substance. The options were *do not use*, *at home*, *at school*, *in a car*, *friend's home*, and *other*. Students were also asked when they usually used each substance. The options were *do not use*, *before school*, *during school*, *after school*, *weeknights*, and *weekends*. Students were instructed to mark all applicable answers. The use of a particular substance at each location or time was coded into separate dichotomous variables indicating use (1) or no use (0) at that location/time. For the three alcohol items, alcohol use was coded as present if endorsed for any alcoholic beverage. The mean (and standard deviation) number of locations and times endorsed by all users and each subgroup (age, race, gender) are listed in Table 1.

Analysis plan

Chi-square tests were conducted to determine whether prevalence of cigarette, alcohol, and marijuana use varied across early, middle, and late adolescence. Subsequent analyses included only students who reported use of the given substance to not confound results by developmental differences in substance use rates. Chi-square tests were performed to examine age group differences in location and time of cigarette, alcohol, and marijuana use. Then, chi-square tests compared males versus females and White adolescents versus Black adolescents within each age group for each location and time. All chi-square tests were conducted separately for each substance. Because of the large sample size and number of analyses conducted, a conservative p value of .001 was used to indicate a statistically significant effect in order to reduce

TABLE 1. Means and standard deviations for number of locations and times adolescents reported using cigarettes, alcohol, and marijuana by age, gender, and race (users only)

Variable	Cigarettes		Alcohol		Marijuana	
	No. of locations <i>M (SD)</i>	No. of times <i>M (SD)</i>	No. of locations <i>M (SD)</i>	No. of times <i>M (SD)</i>	No. of locations <i>M (SD)</i>	No. of times <i>M (SD)</i>
All users	1.94 (1.28)	1.47 (0.99)	1.67 (0.97)	1.35 (0.77)	1.87 (1.28)	1.77 (1.25)
By age						
Early adolescents	1.67 (1.05)	1.32 (0.77)	1.51 (0.83)	1.31 (0.68)	1.67 (1.12)	1.57 (1.06)
Middle adolescents	2.01 (1.32)	1.54 (1.09)	1.75 (1.01)	1.37 (0.82)	1.85 (1.28)	1.75 (1.24)
Late adolescents	2.22 (1.45)	1.58 (1.11)	1.81 (1.07)	1.38 (0.82)	2.10 (1.38)	1.98 (1.38)
By gender						
All male users	1.91 (1.29)	1.50 (1.05)	1.69 (1.00)	1.41 (0.86)	1.88 (1.32)	1.86 (1.35)
All female users	1.98 (1.28)	1.41 (0.90)	1.66 (0.95)	1.31 (0.69)	1.87 (1.24)	1.69 (1.13)
By race						
All White users	2.10 (1.34)	1.39 (0.89)	1.66 (0.94)	1.29 (0.70)	1.90 (1.24)	1.78 (1.20)
All Black users	1.74 (1.18)	1.57 (1.10)	1.68 (0.99)	1.39 (0.81)	1.86 (1.31)	1.77 (1.28)
Early adolescents						
Male users	1.60 (1.00)	1.30 (0.76)	1.48 (0.79)	1.32 (0.70)	1.62 (1.11)	1.57 (1.10)
Female users	1.77 (1.11)	1.35 (0.79)	1.53 (0.85)	1.31 (0.66)	1.72 (1.14)	1.56 (1.02)
White users	1.85 (1.16)	1.28 (0.73)	1.54 (0.85)	1.32 (0.72)	1.73 (1.17)	1.65 (1.14)
Black users	1.53 (0.93)	1.35 (0.81)	1.50 (0.82)	1.31 (0.65)	1.63 (1.10)	1.52 (1.02)
Middle adolescents						
Male users	2.00 (1.35)	1.65 (1.21)	1.77 (1.02)	1.44 (0.93)	1.88 (1.34)	1.86 (1.35)
Female users	2.01 (1.28)	1.38 (0.86)	1.73 (1.00)	1.33 (0.73)	1.83 (1.23)	1.65 (1.11)
White users	2.15 (1.37)	1.43 (0.95)	1.72 (0.95)	1.26 (0.69)	1.88 (1.23)	1.72 (1.14)
Black users	1.81 (1.23)	1.70 (1.25)	1.77 (1.05)	1.46 (0.90)	1.84 (1.32)	1.77 (1.30)
Late adolescents						
Male users	2.19 (1.45)	1.59 (1.12)	1.91 (1.16)	1.50 (0.98)	2.13 (1.45)	2.13 (1.53)
Female users	2.28 (1.46)	1.58 (1.11)	1.74 (1.00)	1.29 (0.68)	2.06 (1.31)	1.84 (1.22)
White users	2.27 (1.43)	1.44 (0.96)	1.72 (0.99)	1.28 (0.71)	2.04 (1.28)	1.93 (1.29)
Black users	2.12 (1.50)	1.87 (1.34)	1.91 (1.14)	1.48 (0.92)	2.13 (1.47)	2.03 (1.46)

Notes: Early adolescents are in 6th through 8th grade, middle adolescents are in 9th and 10th grade, and late adolescents are in 11th and 12th grade.

Type I error and avoid the detection of meaninglessly small effects (Rosenthal and Rosnow, 2008).

Results

In the whole sample, 9% reported using cigarettes, 36% reported using alcohol, and 14% reported using marijuana within the last year. Among users, the most common locations for smoking cigarettes were a friend's house (51%) or their own home (47%), followed by other locations (44%), in a car (40%), and at school (13%). Similarly, alcohol use was most common at one's own home (55%) or a friend's home (50%), followed by other locations (41%), in a car (16%), and at school (5%). Marijuana was most frequently used at a friend's house (61%), followed by other locations (45%), in a car or at home (each 35%), and at school (12%). All three substances were most likely to be used on weekends (73%–89%), followed by weeknights (21%–34%) and after school (15%–33%), and least likely to be used during school (4%–10%) and before school (5%–19%).

Age differences

As expected, the three age groups differed in their rate of use of each substance (all $p < .001$). Fewer early adolescents

reported cigarette smoking than middle and late adolescents (6% vs. 12% and 13%, respectively, both $p < .001$), who did not differ from each other ($p = .304$). For alcohol and marijuana use, the three age groups differed from one another with use increasing with age from 26% to 45% to 50% for alcohol and from 8% to 20% to 24% for marijuana. Detailed results for age differences by location and time are presented in Figure 1 (cigarettes), Figure 2 (alcohol), and Figure 3 (marijuana). These analyses included only students who reported any cigarette, alcohol, and marijuana use in the last year, respectively. Additional results, including standardized residuals, are available on request from the first author for all results.

The percentage of adolescents reporting cigarette use in a car consistently increased throughout adolescence. Fewer early adolescents reported smoking cigarettes at school and before, during, and after school compared with middle and late adolescents, who did not differ from each other ($ps = .021$ – $.987$). Compared with late adolescents, fewer early adolescents reported smoking cigarettes on weeknights. No age differences emerged for cigarette use at home, at friends' homes, at other locations, and on weekends.

The percentage of drinkers who used alcohol at a friend's home, in a car, and on weekends increased throughout adolescence, whereas the percentage of at-home drinkers decreased. Fewer early adolescents reported alcohol use at

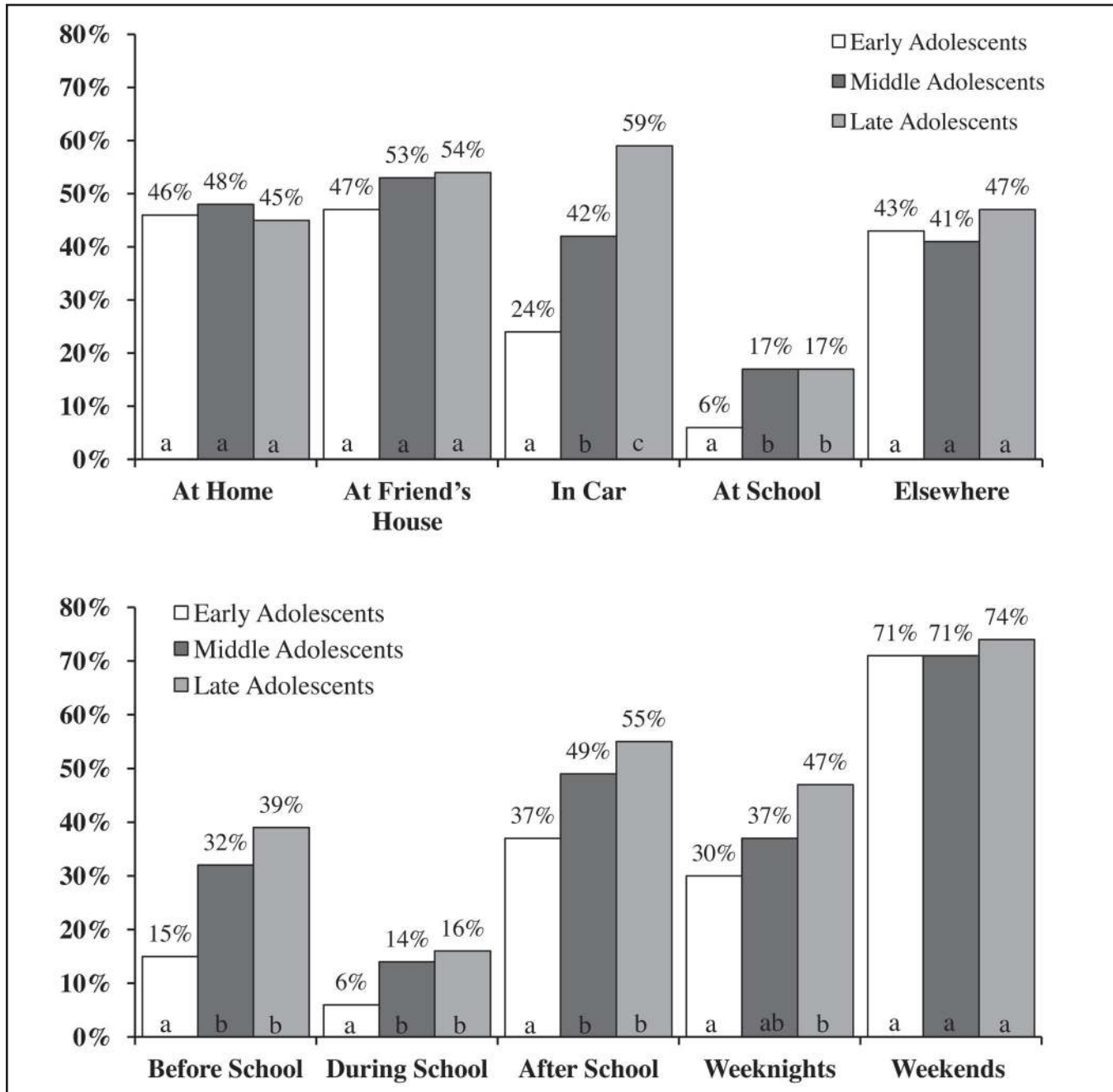


FIGURE 1. Locations and times of use by percentage of early- (6th–8th grade), middle- (9th–10th grade), and late- (11th–12th grade) adolescent cigarette users. Note: Identical lettering (a a; b b) indicates no difference between groups, whereas different lettering (a b c) indicates statistically significant differences ($p < .001$) between groups.

school, including during school, compared with middle and late adolescents, who did not differ from each other ($p = .486$ and $.260$). No age differences were evident for alcohol use in other locations, before and after school, and on weeknights.

The number of youth who used marijuana in cars increased throughout adolescence. Compared with early adolescents, more middle and late adolescents reported using

marijuana at friends' houses, but they did not differ from each other ($p = .075$). More late adolescents (compared with early adolescents) used marijuana at school, including before, during, and after school. More late adolescents also reported weeknight marijuana use compared with early and middle adolescents, who did not differ from each other ($p = .840$). A higher percentage of middle adolescents reported weekend marijuana use compared with both early and late

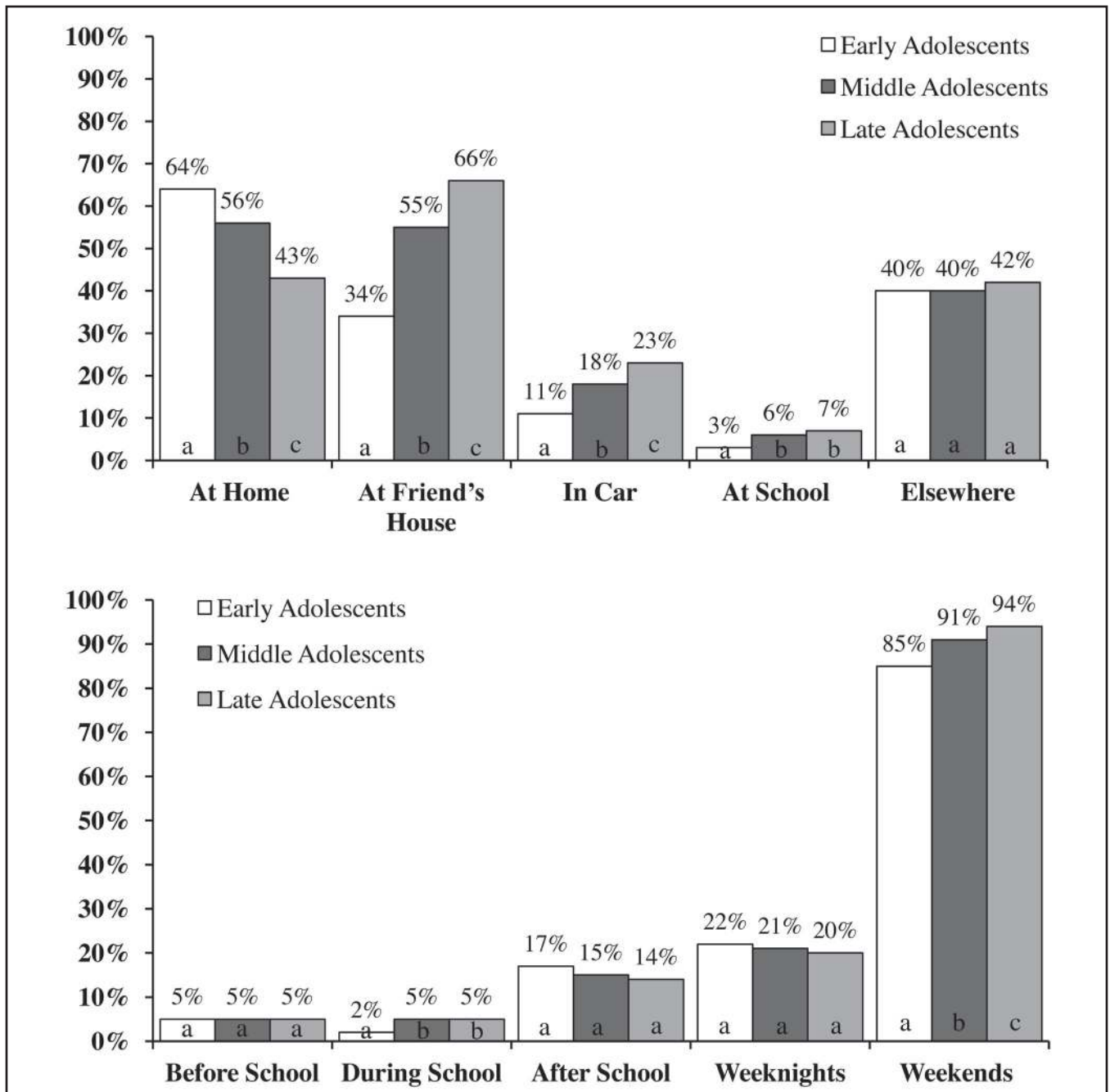


FIGURE 2. Locations and times of use by percentage of early- (6th–8th grade), middle- (9th–10th grade), and late- (11th–12th grade) adolescent alcohol users. Note: Identical lettering (a a; b b) indicates no difference between groups, whereas different lettering (a b c) indicates statistically significant differences ($p < .001$) between groups.

adolescents. No differences appeared across age for marijuana use at home and in other locations.

Gender differences

Detailed results for gender differences by age and location or time are presented in Table 2 (cigarettes), Table 3 (alcohol), and Table 4 (marijuana). Gender differences in

use were evident across all substances, with more males than females reporting cigarette (11% vs. 7%, respectively) and marijuana (15% vs. 13%, respectively) use and more females than males reporting alcohol use (40% vs. 31%, respectively). Gender comparisons by age replicated greater male cigarette smoking across all three periods, with the gender gap increasing with age: early (7% vs. 5%, $p < .001$), middle (15% vs. 9%, $p < .001$) and late adolescence

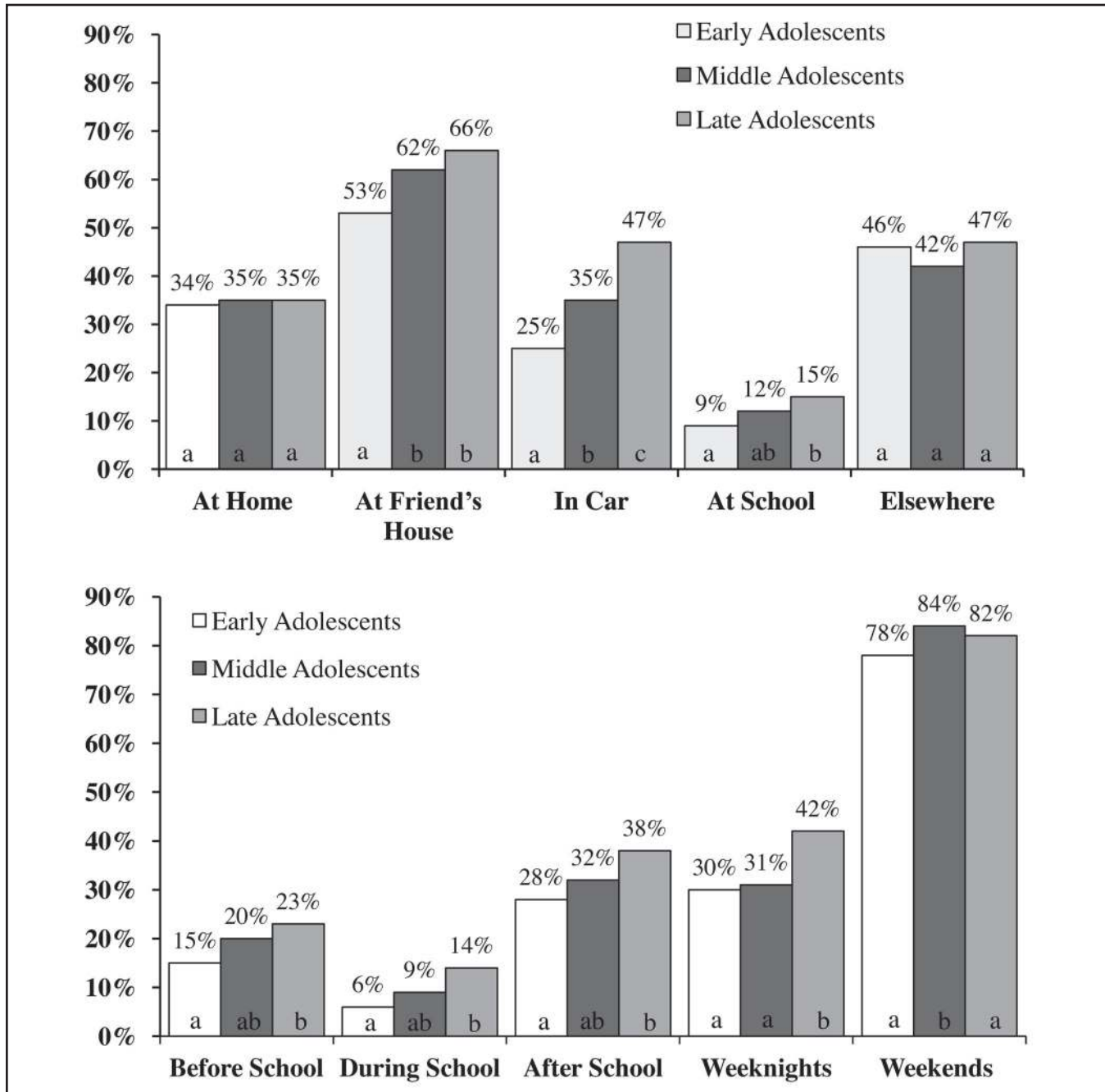


FIGURE 3. Locations and times of use by percentage of early- (6th–8th grade), middle- (9th–10th grade), and late- (11th–12th grade) adolescent marijuana users. Note: Identical lettering (a a; b b) indicates no difference between groups, whereas different lettering (a b c) indicates statistically significant differences ($p < .001$) between groups.

(18% vs. 8%, $p < .001$). For alcohol use, more females than males reported use in early and middle adolescence (30% vs. 23% and 50% vs. 39%, respectively), but not in late adolescence (52% vs. 50%, $p = .010$). Finally, gender differences in marijuana use emerged only in late adolescence (27% males vs. 21% females, $p < .001$), but not in early (9% vs. 7%, $p = .002$) or middle adolescence (22% vs. 19%, $p = .062$).

There were no gender differences for cigarette smoking by location or time ($p = .016-.971$). Similarly, no age-dependent gender differences emerged for alcohol use at home, at friends' homes, and in other locations ($p = .002-.590$) and for marijuana use at home, at friends' houses, in cars, in other locations, and on weeknights ($p = .002-.984$). However, more late adolescent males reported alcohol use in cars than their female counterparts.

TABLE 2. Location and time of cigarette use by age, gender, and race among users

Variable	All users (<i>N</i> = 1,521)	Early adol. (6th–8th gr.)	Middle adol. (9th–10th gr.)	Late adol. (11th–12th gr.)
Locations–				
Gender (male, female)				
At home	44%, 50%	45%, 48%	47%, 49%	41%, 53%
At friend's house	49%, 54%	44%, 52%	51%, 54%	53%, 56%
In car	41%, 39%	23%, 26%	44%, 40%	59%, 58%
At school	13%, 13%	5%, 8%	18%, 15%	16%, 20%
Elsewhere	44%, 43%	44%, 43%	40%, 43%	51%, 41%
Times–				
Gender (male, female)				
Before school	28%, 26%	16%, 15%	32%, 31%	40%, 38%
During school	13%, 10%	7%, 5%	17%, 10%	16%, 16%
After school	48%, 44%	40%, 34%	50%, 48%	55%, 54%
Weeknights	37%, 37%	30%, 31%	36%, 38%	48%, 46%
Weekends	71%, 73%	71%, 71%	68%, 75%	75%, 71%
Locations–				
Race (White, Black)				
At home	50%, 42%	54%, 40%	53%, 41%	43%, 50%
At friend's house	57%, 44%	55%, 41%	58%, 45%	57%, 48%
In car	48%, 30%	27%, 21%	50%, 32%	64%, 48%
At school	11%, 16%	6%, 7%	11%, 25%	15%, 22%
Elsewhere	45%, 42%	43%, 44%	43%, 38%	49%, 44%
Times–				
Race (White, Black)				
Before school	33%, 20%	23%, 10%	33%, 29%	42%, 33%
During school	10%, 13%	7%, 6%	11%, 19%	12%, 24%
After school	54%, 37%	48%, 29%	54%, 41%	59%, 47%
Weeknights	44%, 29%	37%, 25%	41%, 30%	52%, 36%
Weekends	76%, 66%	73%, 69%	76%, 64%	79%, 62%

Notes: **Bold** gender and race analyses indicate significant differences ($p < .001$) between males/females or White/Black adolescents. Adol. = adolescents; gr. = grade.

In middle and late adolescence, more males reported alcohol use at school and during school than females. Within each age group, more males also reported using alcohol before and after school. Finally, more late adolescent males than late adolescent females reported alcohol use on weeknights, whereas more early and middle adolescent females than males reported weekend alcohol use. For marijuana, more late adolescent males reported marijuana use before, during, and after school, and more middle adolescent males than same-age females reported use at school and after school. However, more female than male middle and late adolescents reported use of marijuana on the weekends.

Racial differences

Racial differences in use (see Tables 2–4 for detailed results) were evident for each substance, with more White adolescents using cigarettes than Black youth (11% vs. 7%, respectively) and more Black adolescents than White adolescents reporting alcohol (38% vs. 33%, respectively) and marijuana (16% vs. 13%, respectively) use. Racial differences for cigarette use were not present in early adolescence ($p = .790$) but appeared among older adolescents (middle:

16% White vs. 9% Black; late: 18% vs. 8%, respectively). By contrast, more Black early adolescents reported alcohol use compared with White peers (31% vs. 20%, respectively), but these groups did not differ in middle (46% vs. 44%, respectively, $p = .130$) or late (48% vs. 53%, respectively, $p = .003$) adolescence. Similarly, more Black youth reported using marijuana than White adolescents during early and middle adolescence (9% vs. 6%, $p < .001$, and 23% vs. 18%, respectively); no difference emerged in late adolescence (26% vs. 22%, respectively, $p = .002$).

A higher percentage of White early adolescent smokers used cigarettes at home, at friends' homes, before and after school, and on weeknights than Black early adolescents. More White middle adolescents also reported cigarette smoking in cars, whereas more Black adolescents smoked cigarettes at school. Finally, more White late adolescents used cigarettes on weeknights and weekends. No racial differences emerged for cigarette use in other locations and during school.

For alcohol across all ages, more Black adolescents reported use at home, whereas more White adolescents used alcohol at friends' homes. In both middle and late adolescence, a greater percentage of Black adolescents reported alcohol use in cars, at school, during and after school, and

TABLE 3. Location and time of alcohol use by age, gender, and race among users

Variable	All users (N = 7,215)	Early adol. (6th–8th gr.)	Middle adol. (9th–10th gr.)	Late adol. (11th–12th gr.)
Locations–				
Gender (male, female)				
At home	54%, 57%	62%, 65%	53%, 57%	42%, 44%
At friend's house	49%, 51%	34%, 35%	55%, 56%	66%, 67%
In car	18%, 15%	11%, 10%	19%, 17%	27%, 20%
At school	7%, 4%	3%, 2%	9%, 4%	10%, 5%
Elsewhere	42%, 40%	38%, 41%	43%, 39%	47%, 40%
Times–				
Gender (male, female)				
Before school	7%, 4%	7%, 3%	8%, 4%	7%, 4%
During school	6%, 2%	3%, 2%	7%, 3%	8%, 3%
After school	19%, 13%	19%, 14%	18%, 13%	19%, 11%
Weeknights	23%, 20%	23%, 22%	23%, 20%	24%, 17%
Weekends	85%, 92%	79%, 90%	87%, 94%	92%, 95%
Locations–				
Race (White, Black)				
At home	45%, 63%	59%, 66%	45%, 64%	34%, 53%
At friend's house	66%, 39%	47%, 28%	71%, 43%	76%, 55%
In car	14%, 18%	9%, 11%	15%, 20%	17%, 28%
At school	3%, 6%	3%, 3%	4%, 8%	4%, 10%
Elsewhere	38%, 43%	36%, 42%	38%, 42%	40%, 45%
Times–				
Race (White, Black)				
Before school	4%, 6%	5%, 5%	3%, 7%	4%, 7%
During school	3%, 5%	2%, 2%	3%, 6%	3%, 8%
After school	13%, 18%	18%, 16%	10%, 19%	10%, 18%
Weeknights	18%, 24%	21%, 23%	16%, 25%	16%, 24%
Weekends	92%, 88%	86%, 85%	95%, 88%	95%, 92%

Notes: **Bold** gender and race analyses indicate significant differences ($p < .001$) between males/females or White/Black adolescents. Adol. = adolescents; gr. = grade.

on weeknights. More Black early adolescents reported using alcohol before school, whereas a greater percentage of White late adolescents reported weekend alcohol use. No racial differences reached significance for alcohol use in other locations ($p = .003-.060$).

For marijuana, across all ages more White youth reported use at friends' homes. By contrast, a higher percentage of late Black adolescents used marijuana at school and more middle and late Black adolescents used during school. Although overall more White adolescents reported weekend marijuana use, no racial differences existed within each developmental period ($p = .006-.143$). Finally, no racial differences appeared for marijuana use at home, in cars, in other locations, before and after school, and on weeknights ($p = .010-.997$).

Discussion

This study systematically examined age, gender, and racial differences in substance use locations and times and identified the most common locations and times of adolescent use of cigarettes, alcohol, and marijuana in a large sample of public school students. The most popular locations for all substances were one's own home, friends' homes, and

"other" locations, with weekends the most common time. However, location and time differences emerged among the three substances. For instance, marijuana use was more common at friends' homes compared with cigarettes or alcohol, and cigarettes and marijuana were used more frequently in cars, at school, and during school days than alcohol. Times and locations of use also differed by age, gender, and race, as discussed below.

Age trends

Although overall alcohol use was most common at home and at friends' homes, younger adolescents were more likely to use alcohol at home compared with older adolescents, who drank more often outside the home (friend's house, car, school). This is consistent with previous research indicating that location convenience and access to alcohol contribute to early adolescent alcohol use at home (Anderson and Brown, 2010; Casswell et al., 1991; Harford and Spiegler, 1983). Similarly, cigarette and marijuana use in cars and at school were more common among older youth, as was marijuana use at friends' houses. These trends extend previous research (Anderson and Brown, 2010; Harford and Grant, 1987; Lee et al., 1997) and are

TABLE 4. Location and time of marijuana use by age, gender, and race among users

Variable	All users (<i>N</i> = 2,818)	Early adol. (6th–8th gr.)	Middle adol. (9th–10th gr.)	Late adol. (11th–12th gr.)
Locations–				
Gender (male, female)				
At home	37%, 33%	36%, 31%	37%, 34%	37%, 33%
At friend's house	57%, 64%	51%, 56%	59%, 64%	62%, 70%
In car	34%, 37%	24%, 26%	33%, 36%	46%, 48%
At school	15%, 10%	9%, 9%	17%, 8%	18%, 12%
Elsewhere	46%, 44%	43%, 50%	43%, 41%	51%, 44%
Times–				
Gender (male, female)				
Before school	23%, 16%	18%, 12%	23%, 16%	28%, 18%
During school	13%, 7%	7%, 5%	12%, 7%	19%, 9%
After school	37%, 29%	29%, 27%	38%, 27%	43%, 33%
Weeknights	37%, 32%	30%, 30%	35%, 27%	46%, 38%
Weekends	77%, 86%	74%, 83%	78%, 89%	78%, 86%
Locations–				
Race (White, Black)				
At home	35%, 35%	38%, 32%	34%, 36%	33%, 36%
At friend's house	70%, 55%	64%, 48%	70%, 57%	74%, 59%
In car	35%, 36%	23%, 25%	35%, 34%	44%, 49%
At school	9%, 14%	8%, 9%	9%, 15%	10%, 19%
Elsewhere	42%, 47%	41%, 49%	41%, 43%	44%, 50%
Times–				
Race (White, Black)				
Before school	18%, 20%	16%, 14%	19%, 20%	20%, 26%
During school	7%, 11%	7%, 6%	5%, 12%	9%, 18%
After school	32%, 33%	30%, 26%	30%, 34%	35%, 40%
Weeknights	36%, 33%	32%, 30%	31%, 31%	44%, 40%
Weekends	85%, 79%	81%, 76%	88%, 81%	85%, 80%

Notes: **Bold** gender and race analyses indicate significant differences ($p < .001$) between males/females or White/Black adolescents. Adol. = adolescents; gr. = grade.

best explained by increased independent driving and unsupervised time with friends (Borawski et al., 2003).

The rates of after-school and weeknight use of cigarettes and marijuana followed a similar age pattern, with use increasing with age during these times. By contrast, rates of alcohol use after school and on weeknights remained at similar, lower levels across all age groups. On the other hand, weekend use of cigarettes and marijuana remained stable and high across age (around 71% and 80%, respectively), whereas the rates of alcohol use on weekends kept increasing with age from 85% to 94%. These results paint a picture of afternoons and weeknights becoming more popular times for cigarette and marijuana use with age, and weekend drinking becoming overwhelmingly normative as adolescent drinkers age. Older youth were also more likely to report using cigarettes and marijuana before and during school. These trends may reflect heavier and more frequent use with age and the addictive nature of cigarette smoking leading to more frequent use by “hooked” adolescents to avoid withdrawal (National Institute on Drug Abuse, 2010), as well as lower risk of detection of cigarettes and marijuana and their use at school compared with alcohol. Alternately, this trend may also be related to more permissive attitudes toward cigarette and marijuana use among older youth and their adult caregivers.

Gender differences

Contrary to expectations, girls did not use substances at home more often than boys. However, older boys were more likely than girls to drink alcohol in cars and use alcohol and marijuana at and/or before school. These gender differences are consistent with previous research on males engaging in more risky behaviors than females, including drinking and driving (Harré et al., 1996). Similarly, males are more likely than females to break school rules (Lahey et al., 2000), which may manifest in using alcohol before and during school. Additionally, boys were more likely to report using alcohol and marijuana after school and alcohol also on weeknights. These differences may be explained by gender differences in parental monitoring (Webb et al., 2002). Interestingly, girls were more likely than boys to use alcohol and marijuana on the weekends. Girls' weekend use likely occurs during unsupervised time with friends (Patrick and Schulenberg, 2010). Particularly, male friends (Velazquez et al., 2011) and dating partners (Collins et al., 2009) represent strong influences on girls' substance use (Mrug et al., 2011; Poulin et al., 2011). Together, these results suggest that adolescent girls' use of alcohol and marijuana occurs primarily during weekends, whereas boys tend to use in a wider range of times and situations. Finally, the lack of any

gender differences in the location and time of cigarette use was intriguing and may be best explained by the need for frequent use among nicotine-addicted boys and girls across different times and locations. Additionally, smoking is a more individual phenomenon compared with the more social nature of alcohol and marijuana use.

Racial differences

As expected, White adolescents were more likely than Black youth to use cigarettes at a greater variety of locations and times. However, alcohol was used in a greater variety of places and times by Black youth, and few differences emerged for marijuana. Specifically, White adolescents were more likely to smoke cigarettes before and after school, on weeknights and weekends, in cars, and at their own and friends' houses. Most of these differences appeared in early adolescence, likely reflecting earlier initiation and more frequent smoking by White compared with Black youth (CDC, 2010; Johnston et al., 2011; Kandel et al., 2011; Myers, 2010).

By contrast, Black adolescents were more likely to use alcohol before, during, and after school and on weeknights, and use at home or in cars, whereas Whites' alcohol use was more likely to occur on weekends and at friends' houses. These differences appeared primarily for middle and late adolescents (high school students). One explanation of these findings is greater disengagement from school experienced by Black adolescents (Ogbu, 2003), which may facilitate alcohol (and marijuana) use on school days. However, substance use on school days is also likely to contribute to poor academic performance, leading to further school disengagement, low educational attainment, and increasing racial disparities in educational outcomes. Other possible explanations include possible lower adult presence or monitoring of Black students on school days and the "culture" of weekend parties with alcohol and marijuana among White adolescents. Clearly, racial differences in substance use and their roots and consequences require further study.

Implications

This study demonstrates that adolescent substance use varies systematically across times and locations, with some differences by age, gender, race, and type of substance. These patterns should be exploited by substance use prevention and intervention programs to tailor interventions to patterns of substance use exhibited by youth overall, as well as by specific demographic subgroups. For instance, most adolescent users reported using substances on weekends and at their own and friends' houses. Thus, interventions should target eliminating access to substances at home, increasing parental monitoring and knowledge of what their children do when home and at friends' houses, and facilitating "dry" alternatives to parties or other social youth events that could

involve substance use. Targeting parental attitudes toward adolescent substance use and increasing parental education about the dangers of adolescent substance use also are crucial (McMorris et al., 2011). Additionally, efforts to reduce drinking and marijuana use while driving need to continue and should focus particularly on males and Black youth, who are more likely to report using substances in cars. Finally, the higher rates of substance use at school reported by older male and Black youth warrant attention, as does more frequent alcohol use on school days by Black youth. Interventions promoting students' school engagement and effective methods of enforcing no-drug policies may be needed, particularly in schools serving mostly Black students.

Limitations and conclusions

The results need to be interpreted within the context of the study limitations. First, the study was cross-sectional; therefore, age trends may reflect both developmental and cohort differences. Second, the school-based sample was restricted to one metropolitan area; therefore, the results may not replicate to other geographical settings or to youth who are truant or who dropped out of school. A related limitation is that a sizable portion (21%) of the sample was excluded because of invalid, highly inconsistent, or missing data. Unfortunately, this is a common concern with school-wide surveys, and data exclusion is preferable to including data that are clearly invalid. However, as in all research, the results may not generalize to students unable or unwilling to provide the requested information. Further, we do not know how many students were absent on the day of the assessment or how many students refused to participate. Third, the Pride Survey questionnaire does not include an exhaustive list of locations where adolescents typically use substances, leading to high endorsement of the "other" category. For instance, older adolescents commonly use in parks, beaches, and malls (Anderson and Brown, 2010; Harford and Grant, 1987; Lee et al., 1997), whereas younger adolescents may be introduced to substances at family members' homes (e.g., older cousins). Thus, a greater differentiation of substance use locations is needed in future studies. Additionally, this study did not examine gender or racial differences in risk and protective factors for substance use, such as parental supervision or peer substance use. Future studies should consider how these differences may contribute to patterns of substance use among these subgroups. Further, heterogeneity in substance use patterns across times and locations could not be evaluated, such as identifying locations or times associated with experimentation versus heavy substance use. Finally, this study examined only the three most commonly used substances and did not include other illicit drugs besides marijuana.

Despite these limitations, this study provides the first systematic examination of age, gender, and racial differences

in the location and time of adolescent use of the three most common substances. Further, this study extends previous findings on locations and timings of adolescent substance use to highlight that adolescents' own and friends' homes are the most common locations for substance use, with weekends as the most popular time of use. This study provides an initial step in understanding possible patterns of adolescent substance use. Important age, gender, and racial differences in both location and time of substance use emerged, with implications for prevention and intervention programs targeting specific subgroups of youth. By decreasing availability of substances, increasing appropriate adult supervision, and providing attractive alternatives to substance use at times and places most closely associated with substance use, adolescent substance use can be more effectively decreased.

References

- Anderson, K. G., & Brown, S. A. (2010). Middle school drinking: Who, where, and when. *Journal of Child & Adolescent Substance Abuse, 20*, 48–62.
- Bohnert, K. M., Ríos-Bedoya, C. F., & Breslau, N. (2009). Parental monitoring at age 11 and smoking initiation up to age 17 among Blacks and Whites: A prospective investigation. *Nicotine & Tobacco Research, 11*, 1474–1478.
- Borawski, E. A., Ievers-Landis, C. E., Lovegreen, L. D., & Trapl, E. S. (2003). Parental monitoring, negotiated unsupervised time, and parental trust: The role of perceived parenting practices in adolescent health risk behaviors. *Journal of Adolescent Health, 33*, 60–70.
- Brown, S. A., Vik, P. W., & Creamer, V. A. (1989). Characteristics of relapse following adolescent substance abuse treatment. *Addictive Behaviors, 14*, 291–300.
- Casswell, S., Stewart, J., Connolly, G., & Silva, P. (1991). A longitudinal study of New Zealand children's experience with alcohol. *British Journal of Addiction, 86*, 277–285.
- Centers for Disease Control and Prevention. (2010). Tobacco use among middle and high school students—United States, 2000–2009. *Morbidity and Mortality Weekly Report, 59*, 63–68.
- Chuang, Y.-C., Ennett, S. T., Bauman, K. E., & Foshee, V. A. (2005). Neighborhood influences on adolescent cigarette and alcohol use: Mediating effects through parent and peer behaviors. *Journal of Health and Social Behavior, 46*, 187–204.
- Cohen, D. A., Farley, T. A., Taylor, S. N., Martin, D. H., & Schuster, M. A. (2002). When and where do youths have sex? The potential role of adult supervision. *Pediatrics, 110*, e66.
- Collins, W. A., Welsh, D. P., & Furman, W. (2009). Adolescent romantic relationships. *Annual Review of Psychology, 60*, 631–652.
- Connolly, G. M., Casswell, S., Stewart, J., Silva, P. A., & O'Brien, M. K. (1992). The effect of parents' alcohol problems on children's behaviour as reported by parents and by teachers. *Addiction, 88*, 1383–1390.
- DiClemente, R. J., Wingood, G. M., Crosby, R., Sionean, C., Cobb, B. K., Harrington, K., . . . Oh, M. K. (2001). Parental monitoring: Association with adolescents' risk behaviors. *Pediatrics, 107*, 1363–1368.
- Dishion, T. J., Capaldi, D., Spracklen, K. M., & Li, F. (1995). Peer ecology of male adolescent drug use. *Development and Psychopathology, 7*, 803–824.
- Dishion, T. J., & McMahon, R. J. (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. *Clinical Child and Family Psychology Review, 1*, 61–75.
- Flannery, D. J., Williams, L. L., & Vazsonyi, A. T. (1999). Who are they with and what are they doing? Delinquent behavior, substance use, and early adolescents' after-school time. *American Journal of Orthopsychiatry, 69*, 247–253.
- Harford, T. C., & Grant, B. F. (1987). Psychosocial factors in adolescent drinking contexts. *Journal of Studies on Alcohol, 48*, 551–557.
- Harford, T. C., & Spiegler, D. L. (1983). Developmental trends of adolescent drinking. *Journal of Studies on Alcohol, 44*, 181–187.
- Harré, N., Field, J., & Kirkwood, B. (1996). Gender differences and areas of common concern in the driving behaviors and attitudes of adolescents. *Journal of Safety Research, 27*, 163–173.
- Jacobson, J. O. (2004). Place and attrition from substance abuse treatment. *Journal of Drug Issues, 34*, 23–50.
- Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2011). *Monitoring the Future national survey results on drug use, 1975–2010: Volume I, Secondary school students*. Ann Arbor, MI: Institute for Social Research, The University of Michigan.
- Kandel, D., Schaffran, C., Hu, M.-C., & Thomas, Y. (2011). Age-related differences in cigarette smoking among Whites and African-Americans: Evidence for the crossover hypothesis. *Drug and Alcohol Dependence, 118*, 280–287.
- Lahey, B. B., Schwab-Stone, M., Goodman, S. H., Waldman, I. D., Canino, G., Rathouz, P. J., . . . Jensen, P. S. (2000). Age and gender differences in oppositional behavior and conduct problems: A cross-sectional household study of middle childhood and adolescence. *Journal of Abnormal Psychology, 109*, 488–503.
- Laird, R. D., Criss, M. M., Pettit, G. S., Bates, J. E., & Dodge, K. A. (2008). Parents' monitoring knowledge attenuates the link between antisocial friends and adolescent delinquent behavior. *Journal of Abnormal Child Psychology, 36*, 299–310.
- Laird, R. D., Pettit, G. S., Bates, J. E., & Dodge, K. A. (2003). Parents' monitoring-relevant knowledge and adolescents' delinquent behavior: Evidence of correlated developmental changes and reciprocal influences. *Child Development, 74*, 752–768.
- Lansford, J. E., Deater-Deckard, K., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Ethnic differences in the link between physical discipline and later adolescent externalizing behaviors. *Journal of Child Psychology and Psychiatry, 45*, 801–812.
- Lee, J. A., Jones-Webb, R. J., Short, B. J., & Wagenaar, A. C. (1997). Drinking location and risk of alcohol-impaired driving among high school seniors. *Addictive Behaviors, 22*, 387–393.
- Magnusson, D. (1995). Individual development: A holistic integrated model. In P. Moen, G. H. Elder, & K. Lusher (Eds.), *Linking lives and contexts: Perspectives on the ecology of human development* (pp. 19–60). Washington, DC: APA Books.
- Mason, M., Cheung, I., & Walker, L. (2004). Substance use, social networks, and the geography of urban adolescents. *Substance Use & Misuse, 39*, 1751–1777.
- Mason, M. J., & Korpela, K. (2009). Activity spaces and urban adolescent substance use and emotional health. *Journal of Adolescence, 32*, 925–939.
- McLafferty, S. (2008). Placing substance abuse. In Y. Thomas, D. Richardson, & I. Cheung (Eds.), *Geography and drug addiction* (pp. 1–16). Berlin, Germany: Springer.
- McMorris, B. J., Catalano, R. F., Kim, M. J., Toumbourou, J. W., & Hemphill, S. A. (2011). Influence of family factors and supervised alcohol use on adolescent alcohol use and harms: Similarities between youth in different alcohol policy contexts. *Journal of Studies on Alcohol and Drugs, 72*, 418–428.
- Mennis, J., & Mason, M. J. (2012). Social and geographic contexts of adolescent substance use: The moderating effects of age and gender. *Social Networks, 34*, 150–157.
- Metze, L. (2000). *The PRIDE questionnaire for grades 6-12: Validity and reliability study*. Retrieved from <http://www.pridesurveys.com/support-files/tr99612.pdf>

- Mrug, S., Borch, C., & Cillessen, A. H. N. (2011). Other-sex friendships in late adolescence: Risky associations for substance use and sexual debut? *Journal of Youth and Adolescence, 40*, 875–888.
- Myers, L. L. (2010). Health risk behaviors among adolescents in the rural South: A comparison of race, gender, and age. *Journal of Human Behavior in the Social Environment, 20*, 1024–1037.
- National Institute on Drug Abuse (2010). Cigarettes and other tobacco products. In *NIDA InfoFacts*. Retrieved from <https://www.drugabuse.gov/publications/drugfacts/cigarettes-other-tobacco-products>
- Ogbu, J. U. (2003). *Black American students in an affluent suburb: A study of academic disengagement (Sociocultural, political, and historical studies in education)*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Osgood, D. W., & Anderson, A. L. (2004). Unstructured socializing and rates of delinquency. *Criminology, 42*, 519–550.
- Patrick, M. E., & Schulenberg, J. E. (2010). Alcohol use and heavy episodic drinking prevalence and predictors among national samples of American eighth- and tenth-grade students. *Journal of Studies on Alcohol and Drugs, 71*, 41–45.
- Pettit, G. S., Keiley, M. K., Laird, R. D., Bates, J. E., & Dodge, K. A. (2007). Predicting the developmental course of mother-reported monitoring across childhood and adolescence from early proactive parenting, child temperament, and parents' worries. *Journal of Family Psychology, 21*, 206–217.
- Poulin, F., Denault, A.-S., & Pedersen, S. (2011). Longitudinal associations between other-sex friendships and substance use in adolescence. *Journal of Research on Adolescence, 21*, 776–788.
- Radziszewska, B., Richardson, J. L., Dent, C. W., & Flay, B. R. (1996). Parenting style and adolescent depressive symptoms, smoking, and academic achievement: Ethnic, gender, and SES differences. *Journal of Behavioral Medicine, 19*, 289–305.
- Richardson, J. L., Dwyer, K., McGuigan, K., Hansen, W. B., Dent, C., Johnson, C. A., . . . Flay, B. (1989). Substance use among eighth-grade students who take care of themselves after school. *Pediatrics, 84*, 556–566.
- Richardson, J. L., Radziszewska, B., Dent, C. W., & Flay, B. R. (1993). Relationship between after-school care of adolescents and substance use, risk taking, depressed mood, and academic achievement. *Pediatrics, 92*, 32–38.
- Rosenthal, R., & Rosnow, R. L. (2008). *Essentials of behavioral research: Methods and data analysis*. New York, NY: McGraw-Hill.
- Smith, T. E., Koob, J., & Wirtz, T. (1985). Ecology of adolescents' marijuana abuse. *International Journal of the Addictions, 20*, 1421–1428.
- Steinberg, L., Fletcher, A. C., & Darling, N. (1994). Parental monitoring and peer influences on adolescent substance use. *Pediatrics, 93*, 1060–1064.
- Sussman, S., Stacy, A. W., Ames, S. L., & Freedman, L. B. (1998). Self-reported high-risk locations of adolescent drug use. *Addictive Behaviors, 23*, 405–411.
- Velazquez, C. E., Pasch, K. E., Perry, C. L., & Komro, K. A. (2011). Do high-risk urban youth also have older friends? *Journal of Adolescent Health, 48*, 467–472.
- Webb, J. A., Bray, J. H., Getz, J. G., & Adams, G. (2002). Gender, perceived parental monitoring and behavioral adjustments: Influences on adolescent alcohol use. *American Journal of Orthopsychiatry, 72*, 392–400.
- Wilson, W. J. (1987). *The truly disadvantaged: The inner city, the underclass, and public policy*. Chicago, IL: University of Chicago Press.
- Windle, M. (2003). Alcohol use among adolescents and young adults. *Alcohol Research & Health, 27*, 79–85.