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The association between early conduct problems and early marijuana use in college students

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Abstract

Early conduct problems have been linked to early marijuana use in adolescence. The present study examines this association in a sample of 1,076 college students that was divided into three groups: 1) early marijuana users (began marijuana use prior to age 15; *n*=126), 2) late marijuana users (began marijuana use at or after age 15; *n*=607), and 3) non-users (never used marijuana; *n*=343). A conduct problem inventory used in previous studies was adapted for use in the present study. Early conduct problems were associated with early marijuana use but not with late marijuana use, holding constant other risk factors. Results suggest that early conduct problems are a risk factor for early marijuana use even among academically-achieving college-bound students.

Keywords

conduct problems; marijuana; cannabis; adolescents; college students

Drug use is a continuing problem in the US, especially among youth. Studies have found that early drug use increases opportunity for conduct problems, delinquency, arrests, other substance use, dependence, and antisocial personality disorder (Brunswick & Boyle, 1979; Franken & Hendriks, 2000; Kandel, 1982; Kleinman, 1979; McGue, Ficken, Iacono, & Lykken, 1992; McGue, Iacono, Legrand, Malone, & Elkins, 2001; O'Donnell & Clayton, 1979). In addition, the age at first drug use is a strong predictor of the extent of later involvement with substances and other deviant activities (Brill & Christie, 1974; Kandel, 1982; Kleinman, 1979; Maryland Drug Early Warning System, 2004; Robins, 1978).

Studies have consistently demonstrated an association between early marijuana use and subsequent problems despite different definitions of “early” and “late” onset. For example, compared with individuals who never used marijuana, and individuals who initiated marijuana use later in life, early marijuana users are more likely to use other illegal drugs (Agrawal, Neale, Prescott, & Kendler, 2004; Ellickson, Martino, & Collins, 2004; Fergusson & Horwood, 1997; Fergusson & Lynskey, 1996; Gfroerer, Wu, & Penne, 2002; Lynskey et al., 2003; Maryland Drug Early Warning System, 2004) and to develop other serious substance-related problems (Ellickson et al., 2004; Lynskey et al., 2003; Maryland Drug Early Warning System, 2004). In addition, early marijuana users are more likely to have dropped out of school and to experience other academic difficulties (Ellickson et al., 2004; Fergusson & Lynskey, 1996; Lynskey & Hall, 2000), cognitive problems (Pope Jr et al., 2003), physical problems (Ehrenreich et al., 1999; Wilson et al., 2000) and psychological problems (Fergusson & Horwood, 1997; Fergusson & Lynskey, 1996; Lynskey et al., 2004) in comparison to both late users and nonusers. Early marijuana users are also more likely to engage in other criminal activity at an earlier age and become more involved in crime than

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late users and nonusers (Elliott, 1994; Fergusson & Horwood, 1997; Fergusson & Lynskey, 1996).

Considerable research has described the correlates of early marijuana use, primarily in psychiatric and juvenile delinquent populations. Low peer achievement, peer delinquency, peer and sibling drug use (Kandel, 1978; Kosterman, Hawkins, Guo, Catalano, & Abbott, 2000; Yamaguchi, 1990), and the youth's own drug use, especially early use of alcohol and other drugs (Kandel & Yamaguchi, 1993; Yu & Williford, 1992) are associated with early marijuana use. In addition, being male (Fleming, Kellam, & Brown, 1982; Hammer & Vaglum, 1990; Kosterman et al., 2000; Poikolainen et al., 2001), Native American or African American (Kosterman et al., 2000), and coming from a family of higher socioeconomic status (SES) (Kaplan, Martin, & Robbins, 1985) are significantly related to an increased risk of early marijuana use. Kosterman et al (2000) noted that low levels of parental monitoring and attachment to parents increased youths' risk of using marijuana earlier. Similarly, Brook et al (1999) found that close attachment to parents and attending church with parents lowered the risk of marijuana use at each stage in life. Finally, neurobehavioral disinhibition, described as the delayed or deficient development of behavioral, emotional, and cognitive regulation, is regarded as a potential determinant of early-onset substance use, including marijuana (Clark, Cornelius, Kirisci, & Tarter, 2005).

Early conduct problems are also associated with substance use, including early marijuana use (Boyle et al., 1993; Brook & Whiteman, 1992; Johnson, Arria, Borges, & Ialongo, 1995; Kratzer & Hodgins, 1997; Loeber & LeBlanc, 1990; Robins & McEvoy, 1990). Conduct problems, rather than conduct disorder, have been the focus of many studies of at-risk youth (Johnson et al., 1995; McCabe, Hough, Wood, & Yeh, 2001; Nurco, Blatchley, Hanlon, & O'Grady, 1999; Ruchkin, Koposov, Vermeiren, & Schwab-Stone, 2003). Nurco et al (1999) found that both variety and severity of conduct problems were associated with adolescent drug use.

Conduct problems often precede early marijuana use. Fergusson and Lynskey (1998) found that children who showed early conduct problems (during middle childhood), were more than twice as likely to engage in early marijuana use than children who did not exhibit early conduct problems. Similarly, Pedersen et al (2001), found a strong prospective association between earlier conduct problems and the subsequent initiation of marijuana use before age 16. Huizinga and Elliott (1981) found that minor deviant behaviors most commonly preceded the onset of alcohol and marijuana use, which preceded other forms of illicit drug use.

Examining the possible association between conduct problems and early marijuana use among a college student sample is an important next step in understanding the development of substance use. Many people may not consider a history of conduct problems to be an important risk factor for problems in college because conduct-disordered youth might tend to be, on average, academically-challenged, and therefore unlikely to attend college. However, as noted by Pederson et al (2001), subclinical levels of conduct problems should also be studied because, whereas youth with clinically diagnosed conduct *disorder* may have a difficult time academically, youth with subclinical levels of conduct *problems* may succeed academically, but be at risk for consequences affecting their health and performance at college, such as the development of substance abuse problems.

Marijuana use is a significant problem among college students (Caldeira, Arria, O'Grady, Vincent, & Wish, 2008), with the annual prevalence of marijuana use among college students being similar to that of non-college attending youth (Johnston, O'Malley, Bachman, & Schulenberg, 2007). To our knowledge, no studies have focused on the association

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between early conduct problems and early marijuana use among college students. Therefore, the purpose of the present study is two-fold. First, we describe the adaptation of a prior conduct problem inventory for use among college students. Second, we test the possible association between early conduct problems and early marijuana use in a college-student sample. We hypothesize that early conduct problems will significantly predict early marijuana use in college students, even after controlling for demographic differences and other risk factors.

Methods

Design

Data were collected as part of a prospective longitudinal study known as the College Life Study (CLS). The sample was ascertained in two stages. First, 3,401 incoming first-year students, ages 17 to 19 completed a screening survey during summer orientation in 2004, representing 89% of the target population. Second, screener data were used to stratify the screened population by race, sex, and prior illicit drug use. Drug users were oversampled (100% probability), and all others were randomly sampled at 40% probability (Arria et al., 2008). The resulting sample of 1,253 individuals completed a two-hour face-to-face interview at some point during their freshman year of college (86.5% response rate). Interviews were administered by trained interviewers and included a self-administered portion. Participants received $5 for completing the screener and $50 for the interview. The demographic characteristics of the sample were similar to the general student population at that university (Arria et al., 2008).

For the present study, 177 students were excluded due to missing data on some items, resulting in a final sample of 1,076 students. Informed consent was obtained at each stage of the study following protocols approved by the University's Institutional Review Board, and a federal Certificate of Confidentiality was obtained.

Measures

Demographics—Sex was recorded as observed by the interviewer. Race was self-reported, and then grouped into the following categories: white, African-American, Asian-American, and other/unknown. The mean adjusted gross income (AGI) of each student's self-reported home zip code in 2003 was used as a proxy for SES. For the present analyses, AGI was measured in thousands.

Academic achievement—Scholastic Acheivement Test (SAT) scores were used as a measure of academic achievement, and were obtained from the university's administrative datasets, as allowed by participants' informed consent. SAT scores were treated as a continuous variable.

Behavioral dysregulation—The Dysregulation Inventory (Mezzich, Tarter, Giancola, & Kirisci, 2001) is a 92-item self-administered questionnaire measuring aspects of temperament and behavior that are regarded as indicators of substance abuse liability in adolescence (Clark et al., 2005). For each item, the participant was asked to read a statement and indicate how well it described their own behaviors and experiences, with response options of “never true,” “occasionally true,” “mostly true,” and “always true.” Item scores were summed to compute three subscales representing affective, behavioral, and cognitive dysregulation. Reliability for all three subscales was high in our sample (Cronbach's α were .89, .90, and .84, respectively).

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High school religious participation—Interviewers asked participants how often they participated in religious or church groups during high school. Response options were "none," "irregular," and "regular."

Early use of alcohol—Students were asked the age at which they first drank any drink with alcohol in it. A binary variable was derived, with early alcohol use defined as use prior to age 15 (coded as 1). Individuals who never drank alcohol, or who first drank alcohol at or after age 15, were coded as 0.

Early opportunity to use marijuana—Students were asked the age at which they were first offered any type of marijuana. A binary variable was derived representing early opportunity to use marijuana (before age 15) or late/no opportunity to use marijuana (at or after age 15 or never).

Early conduct problems—Early conduct problems were captured through a self-administered survey that asked about 16 behaviors corresponding to the DSM-IV criteria for conduct disorder (American Psychiatric Association, 1994). Students were asked how many times each behavior had occurred prior to age 18, and how old they were the first time it occurred. Response options for frequency of the behavior problem were "never," "once," "twice," "three times," and "more than three times." The behaviors assessed were similar to those used in prior measures of conduct problems in younger (Johnson et al., 1995) and at-risk adolescent populations (Nurco et al., 1999). However, whereas prior studies typically asked participants about their behaviors during the past year, our questions, which we named the College Early Conduct Problems Index (CECPI), provided a more comprehensive review of the student's entire childhood, based on their point of view at a more mature age.

The CECPI score was derived as follows. After examining the distributions for age of onset for each conduct problem, a median split was used to define the cutpoint between "early" and "late" onset for each behavior. If the median age fell between two numbers, age was rounded down in order to be more conservative. Behaviors occurring prior to the median age were considered early conduct problems. The total number of early conduct problems was then summed for each participant to derive the index score.

Early marijuana use—Participants were asked the age at which they first used marijuana. Consistent with earlier work with public high school students (Lynskey & Hall, 2000; Maryland Drug Early Warning System, 2004), "early marijuana use" was defined as use before age 15. A trichotomous dependent variable was derived and coded as early use (prior to age 15), late use (at or after age 15), or never used.

Statistical Analysis

Because illicit drug users were overrepresented in our sample, we weighted our descriptive data on conduct problems and marijuana use, so that the resulting prevalence estimates would more accurately reflect the entire population of screened first-year students. (Arria et al., 2008).

A series of multinomial logistic regression models were used to test for a possible association between early conduct problems and the trichotomous marijuana use variable. Bivariate models were first developed, testing each predictor variable separately. Two additional variables, early alcohol use and early opportunity to use marijuana, were excluded from further testing after exploratory analyses revealed that all the early marijuana users had both early alcohol use and early opportunity to use marijuana. Finally, all the remaining variables were tested simultaneously in a multivariate model, to determine the extent to

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which early conduct problems were associated with early marijuana use independent of the other risk factors and demographic variables. Following determination of a significant effect for a predictor variable, multiple comparisons were examined to isolate statistically significant differences between early marijuana users and non-users, late marijuana users and non-users, and early and late marijuana users.

Results

Descriptive Results from the CECPI

Table 1 provides descriptive data on the 16 conduct problems assessed. Nearly all of the problems were reported by only a minority of the weighted sample. Only two conduct problems were reported by a majority of the weighted sample, namely, break the rules (84%$_{wt}$) and lie to get something or avoid responsibility (84%$_{wt}$). Median ages for the onset of a conduct problem ranged from 10 to 16, and the later-onset problems tended to be more serious in nature (e.g., broke into someone else's house, building, or car). Applying the median age of onset as a cutpoint to define “early onset,” the proportion of participants with early onset of a conduct problem ranged from <1%$_{wt}$ to 39%$_{wt}$.

Table 2 presents the frequency distribution of CECPI scores, statistically weighted to represent the general population of screened first-year students. More than half of the sample received a score of zero or one. The CECPI score demonstrated reasonably high internal consistency reliability in this sample (Cronbach's α=.765).

Timing of Marijuana Use

Table 3 presents descriptive data on the age of first marijuana use, which ranged from 8 to 19 years. In our analysis sample of 1,076 students, 733 (48.9%$_{wt}$) individuals used marijuana at least once in their lives prior to their interview; 7.3% were early marijuana users.

Association between Early Conduct Problems and Marijuana Use

The results of the multinomial logistic regression analyses are presented in Table 4. Higher scores for CECPI (p=.02) and behavioral dysregulation (p<.01) were associated with increased risk for being an early marijuana user, even controlling for all other independent variables in the multivariate model. Demographic differences were also apparent: higher AGI (p<.01), and irregular participation in religious groups (p<.01) or non-participation (p<.01) were all independently associated with early use.

Late marijuana users and non-users were not significantly different with regard to their CECPI score. However, behavioral dysregulation (p=.01), higher AGI (p<.01), and participating in religious groups irregularly (p<.01) or not at all (p<.01) were independently associated with late use, and being African-American (p=.02) or Asian-American (p<.01) was associated with decreased risk. Thus, marijuana users could consistently be differentiated from non-users on the basis on behavioral dysregulation and demographics, regardless of whether they started using early or late. However, early conduct problems distinguished early users, but not late users, from non-users.

Lastly, we compared early marijuana users with late users. Both CECPI (p<.01) and behavioral dysregulation (p=.02) were independently associated with early use, even holding constant demographics. Non-participation in religious groups (compared with regular participation) was the only demographic variable that distinguished early users from late users (p=.02).

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In summary, a higher CECPI score appeared to differentiate early marijuana users from both non-users and late users, but did not differentiate late users from non-users. By contrast, a higher behavioral dysregulation score was consistently significant in distinguishing all three groups from each other.

Post-hoc Analyses

Being congnizant of the possibility that, in some cases, early marijuana use may precede conduct problems and act as an early warning sign of emerging conduct problems, it was of interest to look at the order of onset of conduct problems and marijuana use. We therefore replicated the multinomial models after excluding the 28 individuals whose onset of marijuana use occurred prior to or during the same year as their first conduct problem behavior. Results did not differ from the main results substantially, with one notable exception. Unlike in the main results, behavioral dysregulation did not distinguish between early and late users. However, the association between the CECPI score and early use was similar to the main results.

Discussion

In this study of college students, early conduct problems were significantly associated with early marijuana use relative to both late marijuana use and non-use, even holding constant behavioral dysregulation and demographics. In addition, higher behavioral dysregulation scores increased the odds of being an early user versus a non-user, and students who did not participate in religious groups in high school compared to those who participated regularly were more likely to be early users as opposed to non-users.

The finding that early conduct problems were linked to early marijuana use is consistent with prior evidence (Fergusson, Lynskey, & Horwood, 1993; Pedersen et al., 2001), and supports the notion that subclinical levels of conduct problems may be a meaningful risk factor for early use, even among academically achieving, college-bound adolescents. In addition, the current study extends prior evidence linking behavioral dysregulation and early marijuana use (Clark et al., 2005), and that involvement in religious groups is a protective factor against early use (Brook et al., 1999). Unlike prior studies, demographic differences in the risk for early marijuana use were not consistently observed in this study. This inconsistency could be due to inherent differences in our college student sample, or simply due to the non-inclusion of potential confounders in prior studies (Fleming et al., 1982; Kosterman et al., 2000).

Because students were sampled from one university, the present findings are in need of replication as they may have limited generalizability to other college student populations. In addition, our study is subject to the limitations of self-report data, and recall bias may have introduced additional error in reporting. However, the validity and reliability of self-report data on conduct problems and substance abuse have been demonstrated previously (Johnson et al., 1995; Kosterman et al., 2000; Nurco et al., 1999), and prior studies have concluded that measures of first tobacco, alcohol, and illicit drug use have good test-retest reliability (Brener, Collins, Kann, Warren, & Williams, 1995; Cottler, Robins, & Helzer, 1989; Grant, Harford, Dawson, Chou, & Pickering, 1995; Reinisch, Bell, & Ellickson, 1991). Additionally, while sex was not significantly associated with early marijuana use in multivariate models, we did not test for interactions between sex and other variables that might play a role in the association with early use. A thorough investigation of possible sex differences in the risk for early use in college students is beyond the scope of the present paper, but warrants further study given that prior research has found sex differences with respect to risk for early marijuana use in other populations (Fleming et al., 1982; Kosterman et al., 2000). Finally, we did not attempt to examine the extent to which early use would

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predict more severe levels of marijuana involvement and/or dependence in college. In light of substantial extant evidence on that association (Chen, O'Brien, & Anthony, 2005; Fergusson, Horwood, Lynskey, & Madden, 2003; Kalant, 2004), we regard early marijuana use as a proxy for a high-risk trajectory of marijuana use.

The present study reports on the adaptation of a prior measure of early conduct problems for use among college student samples. The finding that early conduct problems were associated with early marijuana use—but not late marijuana use—raises the possibility that early conduct problems may have some specificity as a marker for a higher-risk trajectory of marijuana use, one that is more likely to lead to marijuana dependence and other drug involvement in adulthood (Boyle et al., 1993; Brook & Whiteman, 1992; Johnson et al., 1995; Kratzer & Hodgins, 1997; Loeber & LeBlanc, 1990; Robins & McEvoy, 1990). Future studies should examine the extent to which early conduct problems might be predictive of substance abuse and other problem behaviors during the college years, as has been observed in other young adult populations (Johnson et al., 1995; Nurco et al., 1999). Another important area for future research is to identify other characteristics that differentiate early marijuana users from other college students. For example, the parenting styles that were present in students' homes when the students were young may influence the progression from early conduct problems to marijuana use. In addition, students with early conduct problems may have other comorbid mental health problems such as depression or anxiety, leading to marijuana use early in their lives as a means of escape or self-medication.

Prior studies have illustrated the extent of marijuana use in college students. While many students use marijuana at a level that could be considered non-problematic, there are a substantial minority for whom marijuana use leads to adverse consequences, including dependence (Caldeira et al., 2008). Prior evidence suggests that these problematic users might be identified early if certain risk factors are recognized, such as early age of onset and other drug use (Chen et al., 2005). Based on the present findings, it appears that conduct problems that occurred early in childhood might serve as an additional indicator of high risk for a more problematic pattern of marijuana use.

An important implication of the present study is that early conduct problems may be a relevant indicator of riskier forms of marijuana use later, even if the child is academically achieving in a college-bound track. Parents of adolescents should be given information about how to assess their child's risk for early marijuana use—including paying attention to early conduct problems. A history of early conduct problems might help parents distinguish between high-risk and low-risk marijuana users in later adolescence and college, thereby making parents better equipped to exercise an appropriate level of vigilance and monitoring once their child leaves for college.

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Table 1

Lifetime history of 16 conduct problem behaviors and their age of onset, among 2,873 (N_{wt}) first-year college students

	Lifetime History of Behavior *n* (%$_{wt}$)	Median Age of Onset	"Early Onset" of Behavior *n* (%$_{wt}$)
Break the rules	939 (84)	10	437 (39)
Lie to get something or avoid responsibility	914 (84)	10	356 (34)
Take property belonging to others	550 (48)	13	271 (26)
Hurt others physically	420 (39)	10	172 (17)
Bullied, threatened, or intimidated another person	358 (33)	12	150 (15)
Shoplifted	351 (27)	14	160 (13)
Damage property on purpose	341 (27)	14	133 (11)
Steal something from someone	320 (27)	12	136 (12)
Start fights with other people	271 (24)	12	128 (12)
Set fires on purpose	151 (12)	13	72 (6)
Often stay out at night without parental permission (before age of 13)	102 (8)	12	40 (4)
Caused physical harm to an animal	74 (6)	11	33 (3)
Skip school before age of 13	60 (5)	12	29 (2)
Broke into someone else's house, building, or car	60 (4)	16	27 (2)
Ran away from home (overnight) at least twice while living at home or once without returning for lengthy period	53 (4)	15	20 (2)
Used a weapon in a fight	19 (1)	14	9 (<1)

Results are based on data from a high-risk sample of 1,076 individuals and weighted to represent the general population of screened first-year students (N_{wt}=2,873). Results are presented as the unweighted number (*n*) of interviewed students and the weighted percent (%$_{wt}$) of all screened freshmen. Weighted data do not always sum to the total due to rounding. For each behavior, median age of onset is based on data from individuals who ever engaged in that behavior. "Early onset" was defined as any occurrence of that behavior prior to the median age of onset for that behavior.

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Table 2

Weighted distribution of scores for the College Early Conduct Problems Index (N_{wt}=2,873)

Number of Early Conduct Problems	n_{wt}	$\%_{wt}$	Cumulative $\%_{wt}$
0	1066	37.1	37.1
1	527	18.3	55.5
2	371	12.9	68.4
3	288	10.0	78.4
4	196	6.8	85.2
5	147	5.1	90.3
6	112	3.9	94.2
7	80	2.8	97.0
8	28	1.0	98.0
9	31	1.1	99.1
10	6	0.2	99.3
11	11	0.4	99.7
12	8	0.3	100.0
Totals	2873	100%	100%
Mean (SD)=1.98 (2.33)			

Results are based on data from a high-risk sample of 1,076 individuals and weighted to represent the general population of screened first-year students (N_{wt}=2,873). Weighted data do not always sum to the total due to rounding.

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Table 3

Weighted distribution of age at first marijuana use (N_{wt}=2,873)

	Age	n_{wt}		$\%_{wt}$	
EARLY	8	2	Total 208	.1	Total 7.3%$_{wt}$
	11	7		.2	
	12	17		.6	
	13	54		1.9	
	14	128		4.5	
LATE	15	225	Total 1,200	7.8	Total 41.6%$_{wt}$
	16	288		10.0	
	17	349		12.1	
	18	305		10.6	
	19	33		1.1	
NEVER	Never used	1466		51.0	
TOTALS		2873		100.0	

Results are based on data from a high-risk sample of 1,076 individuals and weighted to represent the general population of screened first-year students (N_{wt}=2,873). Weighted data do not always sum to the total due to rounding.

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Table 4

Multiple comparison results from multinomial logistic regression on early marijuana use, late marijuana use, and no marijuana use (*n*=1,076)

	Early *v.* No Marijuana Use		Late *v.* No Marijuana Use		Early *v.* Late Marijuana Use	
Explanatory Variables	**Bivariate** ***OR (95% CI) p***	**Multivariate** ***AOR (95% CI) p***	**Bivariate** ***OR (95% CI) p***	**Multivariate** ***AOR (95% CI) p***	**Bivariate** ***OR (95% CI) p***	**Multivariate** ***AOR (95% CI) p***
College Early Conduct Problems	1.15 (1.06, 1.25) <.01	1.10 (1.02, 1.20) .02	.97 (.91, 1.03) .35	.96 (.90, 1.02) .17	1.19 (1.10, 1.29) <.01	1.15 (1.07, 1.24) <.01
Behavioral Dysregulation	1.04 (1.03, 1.06) <.01	1.05 (1.02, 1.07) <.01	1.02 (1.01, 1.03) <.01	1.02 (1.01, 1.04) .01	1.03 (1.01, 1.04) <.01	1.03 (1.01, 1.05) .02
Mean Adjusted Gross Income	1.01 (1.01, 1.02) <.01	1.01 (1.01, 1.02) <.01	1.01 (1.01, 1.02) <.01	1.01 (1.01, 1.02) <.01	1.00 (.99, 1.01) .73	1.01 (.99, 1.01) .67
Sex (Reference=Male)	.51 (.33, .77) <.01	--	.80 (.61, 1.04) .09	--	.63 (.43, .94) .02	--
Race (Reference=White)						
Black/African American	.39 (.18, .86) .02	.65 (.28, 1.52) .33	.43 (.27, .68) <.01	.57 (.35, .93) .02	.91 (.41, 2.01) .82	1.15 (.51, 2.64) .73
Asian-American	.35 (.15, .80) .01	.23 (.10, .53) <.01	.48 (.31, .76) <.01	.43 (.28, .67) <.01	.73 (.32, 1.66) .45	.54 (.24, 1.23) .14
Other	.71 (.35, 1.46) .36	.63 (.31, 1.28) .20	.95 (.61, 1.48) .82	.88 (.57, 1.36) .57	.75 (.38, 1.47) .40	.71 (.37, 1.38) .31
Participation in religious groups (Reference=Regular)						
None	2.79 (1.65, 4.72) <.01	2.89 (1.72, 4.84) <.01	.58 (.35, .96) .04	1.57 (1.15, 2.13) <.01	1.72 (1.04, 2.86) .04	1.85 (1.13, 3.02) .02
Irregular	2.43 (1.34, 4.41) <.01	2.77 (1.55, 4.95) <.01	.84 (.48, 1.48) .56	2.07 (1.47, 2.92) <.01	1.19 (.67, 2.08) .56	1.34 (.78, 2.31) .29

For each pairwise comparison, the column header is labeled as “criterion category *v.* reference category.” In the multivariate model, odds ratios are adjusted for SAT score, affective dysregulation, cognitive dysregulation, and all other explanatory variables shown. Odds ratios are reported in the table only for variables for which the overall χ^2 was statistically significant.