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Predictive Validity of Established Cut Points for Risk and Protective Factor Scales from the Communities That Care Youth Survey

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Abstract

Community coalitions are a popular strategy to coordinate activities and resources to prevent adolescent substance use and delinquent behavior. Despite early evidence of their lack of effectiveness, a new generation of community coalitions has shown positive results in preventing youth substance use and delinquency. This success can be attributed to coalition decision making focused on reducing local risk factors and increasing local protective factors through the use of evidence-based prevention programs. A previous study using cross-sectional data established cut point values for scales measuring risk and protective factors on the Communities That Care Youth Survey (CTCYS) to identify high levels of risk and low levels of protection in communities on each scale. The current study extended this previous research by using longitudinal data to assess the validity of risk and protective factor cut point values in predicting substance use and delinquent behavior 1 year after risk and protection were measured. The findings demonstrate the predictive validity of cut points for risk and protective factor scales measured by the CTCYS and suggest their utility in guiding prevention efforts.

Keywords

Risk factors; Protective factors; Substance use; Youth surveys

Introduction

Community coalitions are a popular strategy to plan activities and coordinate limited resources to prevent youth substance abuse and delinquent behaviors (Butterfoss, Goodman, & Wandersman, 1993; Chavis, 1995; Harachi, Ayers, Hawkins, Catalano, & Cushing, 1996; Lewis et al., 1996). Specifically, community coalitions allow local leaders, prevention professionals, and community members the opportunity to identify a common vision for community mobilization, to build collaboration and cooperation, and to improve service delivery in order to address problems through joint action and focused local activities (Butterfoss et al., 1993; Foster-Fishman, Berkowitz, Lounsbury, Jacobson, & Allen, 2001; Lasker, 2000; Wandersman & Florin, 2003). In spite of the promise of community coalitions, early research offered little evidence of their effectiveness (Berkowitz, 2001; Hallfors, Cho, Livert, & Kadushin, 2002; Roussos & Fawcett, 2000).

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More recent research, however, has demonstrated the effectiveness of a new generation of community coalition efforts to prevent youth substance abuse and delinquency (Hawkins et al., 2008a; Spoth, Guyll, Lillehoj, Redmond, & Greenberg, 2007). One reason for the success of recent community coalition efforts is the use of a science-based, public health approach that identifies the precursors of adolescent health and behavioral problems (i.e., risk and protective factors) and links them to interventions proven to be effective.

Communities That Care (CTC) is part of the new generation of coalition-based systems for preventing adolescent problem behaviors. Both a quasi-experimental study conducted in Pennsylvania (Feinberg, Greenberg, Osgood, Sartorius, & Bontempo, 2007), and a community-randomized controlled trial conducted in Colorado, Maine, Oregon, Utah, Kansas, Illinois, and Washington, the Community Youth Development Study (CYDS; Brown et al., 2009; Hawkins et al., 2008b), found that CTC had positive effects on adolescent problem behaviors, including drug use and delinquency (Hawkins et al., 2008a, 2009, 2012). Briefly, CTC uses a public health approach to empower community coalitions to choose and implement interventions that have been tested and proven to be effective in preventing youth substance abuse and delinquency. Central elements of CTC are the prioritization of prevention needs and the selection of preventive interventions using epidemiological data on risk and protective factors that predict adolescent problem behaviors (Hawkins, Catalano, & Arthur, 2002). Researchers have identified a number of *risk factors* in multiple domains that increase the likelihood of engaging in problem behaviors, such as poor family management, low commitment to school, and community attitudes or norms favorable to substance use. Similarly, researchers have identified *protective factors* that moderate the risk of engaging in substance use or delinquency, such as a strong attachment to parents, association with friends who engage in positive behaviors, and strong problem-solving and decision-making skills (Hawkins, Catalano, & Miller, 1992). By measuring and monitoring risk and protective factors over time, community coalitions can develop the information necessary to link prevention needs to prevention resources. In the CTC system, effective preventive interventions are selected to target empirically identified risk factors that are elevated in the community and protective factors that are depressed in the community.

The CTC prevention system uses the CTC Youth Survey (CTCYS; Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002) to identify community needs, guide selection of appropriate tested–effective prevention programs, and plan future prevention-related activities by community coalitions. The CTCYS measures 19 risk and 13 protective factors in four domains (community, school, family, and individual/peer) as well as 22 behavioral outcomes, such as drug use and delinquent behaviors. The anonymous survey is typically administered in classrooms and designed for 6th-, 8th-, 10th-, and 12th-grade students to be completed in a 45-min period. Intraclass correlations reported by Hawkins, Van Horn, and Arthur (2004) showed that there are meaningful differences in levels of risk and protection as measured by the CTCYS between communities and that these differences are correlated with community levels of substance use.

In a previous study using a large cross-sectional sample (N = approximately 80,000 students in six states), Arthur et al. (2007) established cut point values for risk and protective factor scales on the CTCYS and demonstrated the concurrent validity of these cut point values by comparing levels of student risk and protection across prosocial and problem behavior outcomes. Dichotomizing the distribution of risk/protection by the derived cut points into “low” and “high” risk/protection groups facilitated reporting of community levels of risk and protection in terms of the proportions of students at elevated risk for each risk factor and at depressed levels of protection for each protective factor. This method was favored over other reporting methods, such as the reporting of means or z scores, because of its ease of

interpretability. The previous study that established the method to determine the cut point values for all the CTCYS scales relied on cross-sectional data to determine cutoff values on the risk and protective factor scales that maximized both the specificity and sensitivity in identifying individuals engaged in problem behaviors. The current study extended the previous research by using longitudinal CTCYS data from a panel of elementary school students to test the validity of these established cut point values for risk and protection scales in predicting substance use and delinquent behavior 1 year after risk and protective factors were measured.

Methods

Sample

Starting in the spring of 2004, we began surveying a longitudinal panel of 5th-grade students using the risk and protective factor scales and substance use and delinquent behavior outcomes from the CTCYS. The sample used in the current study, which consisted of 1,910 students surveyed in both 6th and 7th grades, was drawn from the 12 control communities of the CYDS. The analytic sample was taken from a larger pool of 2,002 students in the control condition. There were no significant differences between students in the analytic sample (n = 1,910) and those excluded due to missing data (n = 92; all $p \geq .05$). However, compared with students in the analytic sample, a significantly greater proportion of those excluded were Hispanic and non-White ($p < .05$). The analytic sample was confined to the control group to eliminate any potential confounding effect of the CTC intervention. Descriptive statistics for the analytic sample were: 6th-grade mean age = 11.6 years (SD = 0.54); 51 % male; 25 % Hispanic; and 70 % White. A full description of the CYDS longitudinal panel design, response rates, and recruitment procedures is reported elsewhere (Brown et al., 2009).

Measures

The 6th-grade CTCYS risk and protective factor scales were dichotomized based on the cutoff values established by Arthur et al. (2007). We assessed various methods for determining optimally discriminating cut point values for the risk factor scales. We determined that the cut point value of the median scale score plus 0.15 times the mean absolute deviation statistic (a measure of central tendency of a distribution around a median comparable to a standard deviation around a mean; see Hays [1988]) offered the greatest ability to discriminate between low- and high-risk students. For protective factor scales, on which low scores indicate less protection, the cut point value of the median scale score minus 0.15 times the mean absolute deviation statistic was the established cutoff value. The independent variables in the current analysis were the risk and protective factors scale scores dichotomized using the previously established method.

In addition, the number of risk factors above each respective cut point and the number of protective factors below each respective cut point were summed separately for each student to create overall risk and protection index scores. The risk factor index score was grouped into six categories ranging from 0–2 factors, 3–5 factors, 6–8 factors, 9–11 factors, 12–14 factors, and 15–19 factors above the cut point value. The protective factor index was scored in a similar manner.

Dependent variables were substance use and delinquent behavior outcomes measured in the 7th-grade CTCYS. Dichotomous measures were constructed for past 30-day use of cigarettes, alcohol, and marijuana, as well as past 2-week binge drinking measured as five or more drinks in a row, to indicate *use* (coded as “1”) versus *nonuse* (coded as “0”) of the substance during the specified time period. An additional dichotomous measure of past-year

delinquent behavior was constructed as any engagement in any of nine delinquent behaviors measured in the CTCYS (e.g., having attacked someone with the idea of seriously hurting them; having taken something from a store without paying for it). A full list of CTCYS items and an item dictionary are available online at www.communitiesthatcare.net.

Statistical Analysis

Logistic regression analysis was used to test the ability of risk and protective factor scores obtained from 6th graders in the spring of 2005 to predict involvement in substance use and delinquent behavior as 7th graders assessed in the spring of 2006. Odds ratios were used to indicate the likelihood of engaging in each problem behavior outcome for those above the cut point on each risk factor versus those below it, and those below each protective factor cut point versus those above it. Tests of statistical significance for the differences in the proportions between students who engaged in each problem behavior outcome were assessed using a Chisquare test (two-tailed $p \leq .05$). All analyses were performed using SPSS software (version 15.0.1).

Results

Results of the logistic regression analysis for the risk and protective factor scales are shown in Tables 1 and 2, respectively. As shown in Table 1, using the established cut points, all 19 risk factor scales significantly predicted at least one of the behavior outcomes, and for 17 of the 19 scales, scoring above the cut point doubled or more than doubled the odds of engaging in at least four of the five substance use or delinquent behavior outcomes, compared with scoring below the cut point. For example, on the Community Disorganization scale, students who scored above the cut point (indicating a high level of risk in 6th grade) were more than 3 times as likely to report tobacco use, twice as likely to report alcohol use, almost 5 times as likely to report marijuana use, and 3 times as likely to engage in binge drinking in 7th grade, compared with students who scored below the cut point The results are consistent across risk factors in the different domains measured by the CTCYS.

As shown in Table 2, using the established cut points, 12 of the 13 protective factor scales significantly predicted at least one of the four behavior outcomes in 7th grade. For 8 of the 13 protective factor scales, scores below the cut point (indicating low levels of protection) doubled or more than doubled the odds of engaging in at least three of the five outcomes. For example, high scores on the Family Opportunities for Prosocial Involvement scale in 6th grade were associated with a lower risk of problem behaviors in the 7th grade. Twenty-seven percent of 6th-grade students scoring above the cut point for this protective factor (i.e., “high protection”) engaged in a delinquent behavior, whereas 45 % of 6th-grade students scoring below the cut point (i.e., “low protection”) engaged in delinquent behavior in 7th grade.

The overall risk factor index showed that exposure to a greater number of risk factors above the cut point significantly predicted a higher prevalence of problem behavior outcomes 1 year later (Fig. 1). The overall protective factor index also showed the expected results: Exposure to fewer protective factors above the cut point significantly predicted a greater number of substance use and delinquent behavior outcomes 1 year later (Fig. 2).

To rule out the possibility that predictive associations between risk/protective factors and outcomes were confounded by previous substance use or delinquent behavior, a follow-up set of analyses were conducted restricting the 6th-grade analytic sample to those who did not engage in the behavior prior to 6th grade. Results of these follow-up analyses indicated that the ability of the dichotomized risk and protective factors to predict substance use or

delinquent behavior did not differ from results obtained in the analysis of the entire sample (data not shown).

Discussion

Overall, we found that risk and protective factor scales from the CTCYS measured in the spring of 6th grade and scored using established cut points predicted substance use and delinquent behaviors measured 1 year later in the spring of 7th grade. These findings support the use of the cut point reporting methodology for the CTCYS to guide community prevention planning efforts. The use of cut points to dichotomize the CTCYS risk and protective factor scales simplifies and facilitates the presentation of data on community levels of risk and protection exposure for community audiences. Results from samples surveyed using the CTCYS allow community coalition members to identify specific elevated risk factors in the community and specific depressed protective factors in the community and then to directly target these factors with tested–effective prevention policies and programs.

This study offers evidence of the validity of the established cut points for the CTCYS; however, this study is not without limitations. First, it relied on self-reported survey data from 6th- to 7th-grade students. Reliance on self-reported data could introduce a social desirability bias in the risk and protective factor scales and outcome measures. However, the validity of self-reported substance use data has been established (e.g., Campanelli, Dielman, & Shope, 1987; Smith, McCarthy, & Goldman, 1995), and these data have been used widely in prevention and other social science research (e.g., Ilgen et al., 2011). Second, the generalizability of the current findings is limited by the fact that the analyzed data came from small to mid-sized communities with populations ranging from 1,921 to 32,885. Thus, the current findings may not generalize to youth from larger urban populations; however, it should be noted that previous research on the CTCYS supports its use across gender and racial/ethnic groups (Glaser, Van Horn, Arthur, Hawkins, & Catalano, 2005). Third, this study does not establish a causal association between risk/protective factors and outcomes; the findings only indicate that the risk and protective factors measured by the CTCYS are predictive of future problem behaviors of adolescents when dichotomized using the established cut points. Finally, the risk and protective factors examined in this study may be correlated with each other. However, the utility of examining the prevalence of separate risk and protective factors resides in their use by community coalitions to indicate specific patterns of risk and protection in schools and communities that allow for prevention programming that seeks to reduce specific risk factors that are prevalent in the community and increase protective factors that are not prevalent in the community.

The current findings indicate the ability of the dichotomized cut points to identify risk and protective factors that predict future substance use and delinquent behavior among youth. Thus, these cut points can be used by community prevention planners to identify elevated risk factors and depressed protective factors in the community and to plan and tailor their prevention activities accordingly.

Community coalitions' efforts to reduce youth substance abuse and delinquent behaviors should be guided by empirical data on the prevalence of risk and protective factors for these problems in the community. These data, in turn, can be used to guide the selection of preventive interventions. Coalitions need to collect and assess data in ways that are valid, meaningful, and easily interpreted by coalition members. The cut point scoring methodology for assessing and reporting the prevalence of the risk and protective factors measured in the CTCYS gives community coalitions the information necessary to identify prevention needs in order to address needs with evidence-based prevention programming. In the CYDS, the

12 CTC communities used this methodology to identify and implement a variety of evidence-based prevention programs, with each CTC community targeting a specific set of elevated risks in their community. The current study demonstrates the predictive validity of cut points for risk and protective factor scales measured by the CTCYS and suggests their utility in guiding efforts to prevent health and behavioral problems among youth.

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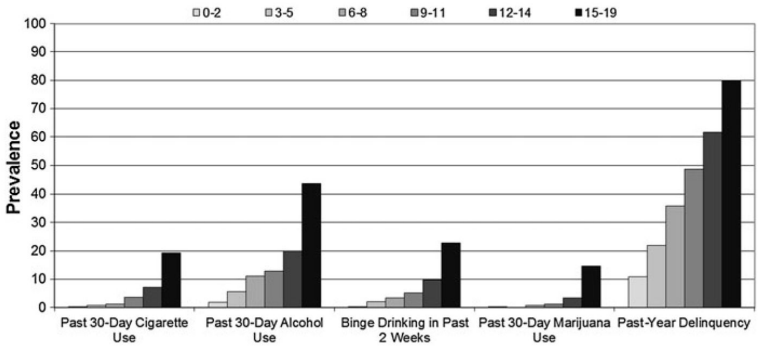

Fig. 1.

Prevalence of substance use and delinquent behavior outcomes in 7th grade by number of risk factors above cut point to which individuals were exposed in 6th grade

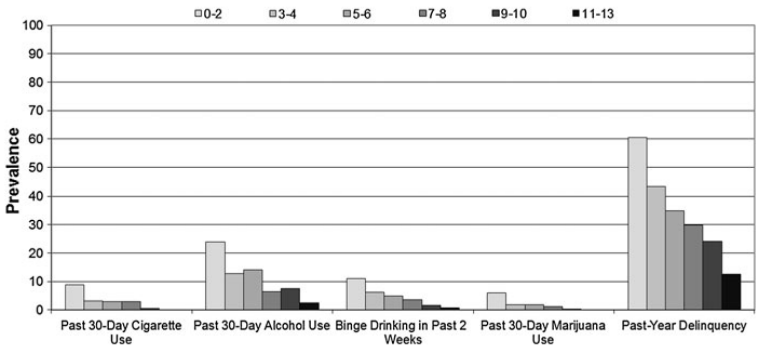

Fig. 2.

Prevalence of substance use and delinquent behavior outcomes in 7th grade by number of protective factors below cut point to which individuals were exposed in 6th grade

Table 1

Sixth-grade risk factors predicting seventh-grade substance use and delinquent behavior outcomes

Risk factors	Past 30-day tobacco use in 7th grade			Past 30-day alcohol use in 7th grade			Binge drinking in past 2 weeks in 7th grade		
	Percentage reporting		Odds ratio	Percentage reporting		Odds ratio	Percentage reporting		Odds ratio
	Low risk in 6th grade	High risk in 6th grade		Low risk in 6th grade	High risk in 6th grade		Low risk in 6th grade	High risk in 6th grade	
Community domain									
Low neighborhood attachment	**2.2**	**4.2**	**1.98**	**9.3**	**12.9**	**1.45**	**3.7**	**5.7**	**1.58**
Community disorganization	**1.5**	**5.4**	**3.70**	**7.6**	**15.8**	**2.28**	**2.6**	**7.4**	**3.04**
Laws and norms favorable toward drugs	**1.2**	**6.3**	**5.46**	**7.5**	**17.2**	**2.56**	**2.6**	**8.0**	**3.31**
Perceived availability of drugs	**1.5**	**7.0**	**5.08**	**7.5**	**20.5**	**3.19**	**2.6**	**10.0**	**4.13**
Family domain									
Poor family management	**1.4**	**5.6**	**4.31**	**7.3**	**16.8**	**2.55**	**2.9**	**7.3**	**2.67**
Family conflict	2.5	3.7	1.48	**8.2**	**15.6**	**2.07**	**3.5**	**6.4**	**1.89**
Family history of antisocial behavior	**0.9**	**6.9**	**8.26**	**6.1**	**19.2**	**3.65**	**1.6**	**9.8**	**6.77**
Parental attitudes favorable toward drug use	**1.5**	**8.6**	**6.03**	**7.4**	**24.0**	**3.95**	**2.7**	**11.4**	**4.71**
Parental attitudes favorable toward antisocial behavior	**1.0**	**6.0**	**6.59**	**5.6**	**18.3**	**3.80**	**1.4**	**9.0**	**6.81**
School domain									
School academic failure	**0.3**	**5.6**	**17.18**	**6.7**	**15.0**	**2.47**	**2.6**	**6.4**	**2.57**
Low commitment to school	**1.6**	**5.2**	**3.41**	**7.5**	**16.3**	**2.40**	**3.2**	**6.6**	**2.11**
Peer/individual domain									
Rebelliousness	**1.0**	**5.2**	**5.21**	**5.8**	**16.5**	**3.22**	**1.6**	**7.8**	**5.33**
Attitudes favorable toward antisocial behavior	**1.3**	**5.2**	**4.18**	**6.5**	**17.1**	**2.95**	**2.5**	**7.5**	**3.18**
Attitudes favorable toward drug use	**1.2**	**10.2**	**9.07**	**7.3**	**26.2**	**4.49**	**2.6**	**13.0**	**5.61**
Perceived risk of drug use	**1.6**	**5.9**	**3.83**	**7.8**	**18.1**	**2.62**	**2.9**	**8.1**	**2.95**
Friends' antisocial behavior	**0.8**	**7.4**	**10.30**	**6.6**	**18.8**	**3.24**	**2.0**	**9.4**	**5.02**
Friends' use of drugs	**1.2**	**10.1**	**9.25**	**6.8**	**26.0**	**4.83**	**2.5**	**12.4**	**5.43**
Rewards for antisocial involvement	**1.6**	**7.8**	**5.21**	**7.8**	**20.9**	**3.13**	**2.7**	**10.4**	**4.11**
Intentions to use drugs	**0.9**	**6.3**	**7.42**	**4.4**	**21.3**	**5.86**	**1.5**	**9.5**	**6.79**
Average	1.4	6.3		7.1	18.6		2.5	8.6	
SD	0.5	1.8		1.1	3.7		0.6	2.1	

Risk factors	Past 30-day marijuana use in 7th grade			Past-year delinquency in 7th grade		
	Percentage reporting		Odds ratio	Percentage reporting		Odds ratio
	Low risk in 6th grade	High risk in 6th grade		Low risk in 6th grade	High risk in 6th grade	
Community domain						
Low neighborhood attachment	**1.1**	**2.6**	**2.31**	**28.5**	**40.9**	**1.74**
Community disorganization	**0.7**	**3.2**	**4.70**	**26.3**	**46.2**	**2.41**
Laws and norms favorable toward drugs	**0.4**	**4.1**	**9.99**	**26.0**	**48.4**	**2.66**
Perceived availability of drugs	**0.6**	**4.8**	**8.13**	**26.9**	**53.1**	**3.08**
Family domain						
Poor family management	**0.5**	**3.5**	**6.69**	**24.7**	**48.3**	**2.86**
Family conflict	1.3	2.3	1.77	**27.9**	**43.9**	**2.03**
Family history of antisocial behavior	**0.4**	**4.1**	**9.58**	**24.1**	**50.7**	**3.24**
Parental attitudes favorable toward drug use	**0.7**	**5.6**	**8.35**	**28.3**	**53.9**	**2.97**
Parental attitudes favorable toward antisocial behavior	**0.1**	**3.6**	**7.68**	**22.5**	**49.7**	**3.40**
School domain						
School academic failure	**0.6**	**2.8**	**5.12**	**26.4**	**41.1**	**1.95**
Low commitment to school	**0.7**	**3.5**	**5.06**	**25.8**	**47.1**	**2.56**
Peer/individual domain						
Rebelliousness	**0.5**	**3.1**	**6.05**	**19.8**	**49.5**	**3.98**
Attitudes favorable toward antisocial behavior	**0.6**	**3.4**	**6.38**	**23.3**	**49.3**	**3.20**
Attitudes favorable toward drug use	**0.7**	**6.2**	**9.66**	**27.6**	**60.2**	**3.96**
Perceived risk of drug use	**1.0**	**3.5**	**3.71**	**30.8**	**39.7**	**1.48**
Friends' antisocial behavior	**0.3**	**4.6**	**18.88**	**23.6**	**53.7**	**3.76**
Friends' use of drugs	**0.5**	**6.5**	**14.13**	**26.1**	**62.9**	**4.80**
Rewards for antisocial involvement	**0.7**	**5.3**	**8.60**	**28.5**	**50.7**	**2.58**
Intentions to use drugs	**0.4**	**4.0**	**11.46**	**24.7**	**48.4**	**2.86**
Average	0.6	4.0		25.8	49.2	
SD	0.3	1.2		2.6	6.0	

Statistically significant ($p \leq .05$) differences based on two-tailed tests are indicated in bold

Table 2

Sixth-grade protective factors predicting seventh-grade substance use and delinquent behavior outcomes

Protective factors	Past 30-day tobacco use in 7th grade			Past 30-day alcohol use in 7th grade			Binge drinking in past 2 weeks in 7th grade		
	Percentage reporting		Odds ratio	Percentage reporting		Odds ratio	Percentage reporting		Odds ratio
	High protection in 6th grade	Low protection in 6th grade		High protection in 6th grade	Low protection in 6th grade		High protection in 6th grade	Low protection in 6th grade	
Community domain									
Community opportunities for prosocial involvement	2.1	3.6	1.73	**7.1**	**14.3**	**2.20**	**2.8**	**6.2**	**2.34**
Community rewards for prosocial involvement	**1.6**	**4.3**	**2.76**	**7.4**	**14.2**	**2.08**	**2.7**	**6.3**	**2.38**
Family domain									
Family attachment	**2.0**	**4.5**	**2.37**	**8.3**	**14.7**	**1.91**	**3.4**	**6.1**	**1.83**
Family opportunities for prosocial involvement	**2.0**	**4.6**	**2.40**	**8.1**	**15.8**	**2.14**	**3.3**	**6.7**	**2.09**
Family rewards for prosocial involvement	**2.1**	**3.9**	**1.86**	**7.3**	**15.3**	**2.31**	**3.1**	**6.1**	**2.01**
School domain									
School opportunities for prosocial involvement	2.8	3.2	1.14	9.6	12.5	1.34	4.0	5.2	1.32
School rewards for prosocial involvement	**2.2**	**4.5**	**2.14**	**8.3**	**15.6**	**2.05**	**3.6**	**6.2**	**1.78**
Peer/individual domain									
Social skills	**0.9**	**5.2**	**5.77**	**5.4**	**17.0**	**3.61**	**1.7**	**7.7**	**4.88**
Belief in moral order	**1.2**	**6.5**	**5.78**	**7.0**	**18.2**	**2.98**	**2.0**	**9.2**	**4.92**
Interaction with prosocial peers	**1.3**	**4.6**	**3.65**	**7.6**	**13.8**	**1.94**	**2.6**	**6.3**	**2.55**
Prosocial involvement	**1.2**	**4.3**	**3.68**	**8.5**	**12.6**	**1.55**	**2.9**	**5.7**	**2.00**
Rewards for prosocial involvement	**1.8**	**4.6**	**2.65**	**8.2**	**14.4**	**1.88**	**3.0**	**6.6**	**2.24**
Religiosity	**1.8**	**4.5**	**2.51**	10.1	12.1	1.22	3.8	5.5	1.45
Average	1.8	4.5		7.9	14.7		3.0	6.4	
SD	0.5	0.8		1.2	1.8		0.7	1.0	

Protective factors	Past 30-day marijuana use in 7th grade			Past-year delinquency in 7th grade		
	Percentage reporting		Odds ratio	Percentage reporting		Odds ratio
	High protection in 6th grade	Low protection in 6th grade		High protection in 6th grade	Low protection in 6th grade	
Community domain						
Community opportunities for prosocial involvement	**1.1**	**2.3**	**2.05**	**26.4**	**40.0**	**1.86**
Community rewards for prosocial involvement	**0.7**	**2.7**	**4.02**	**27.0**	**40.1**	**1.81**
Family domain						
Family attachment	**1.0**	**2.6**	**2.62**	**28.3**	**42.2**	**1.85**
Family opportunities for prosocial involvement	**1.1**	**2.8**	**2.66**	**27.2**	**44.9**	**2.18**
Family rewards for prosocial involvement	**0.7**	**2.9**	**4.17**	**25.6**	**43.7**	**2.26**
School domain						
School opportunities for prosocial involvement	1.4	2.2	1.63	**29.5**	**39.0**	**1.53**
School rewards for prosocial involvement	1.3	2.5	1.96	**28.8**	**42.6**	**1.84**
Peer/individual domain						
Social skills	**0.4**	**3.2**	**7.87**	**23.5**	**45.4**	**2.70**
Belief in moral order	**0.5**	**4.0**	**8.24**	**22.7**	**54.3**	**4.06**
Interaction with prosocial peers	**0.7**	**2.7**	**3.96**	**25.0**	**41.8**	**2.16**
Prosocial involvement	**0.8**	**2.4**	**3.03**	**27.7**	**38.1**	**1.60**
Rewards for prosocial involvement	**1.0**	**2.8**	**2.85**	**27.8**	**40.9**	**1.80**
Religiosity	1.6	1.9	1.19	**31.6**	**36.3**	**1.23**
Average	0.9	2.7		27.0	42.3	
SD	0.4	0.5		2.4	4.5	

Statistically significant ($p \leq .05$) differences based on two-tailed tests are indicated in bold