

Recent Alcohol Use and Episodic Heavy Drinking Among Multiracial Youth

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Abstract

There is continued concern among public health professionals about youth alcohol use. Multiracial students may be at higher risk than other minority groups for use. Therefore, the purpose of this study was to investigate the influence of student participation in positive (pro-social) activities, negative behaviors, and protective factors on the family/ parent and teacher/ school level on recent alcohol use (past 30 days) and frequent binge drinking among multiracial students. The PRIDE national survey, a nationally recognized survey measuring student behavior, was provided to 7th to 12th grade students in one city. All students self-identifying as multiracial were included in this data analysis ($n = 2134$). Findings indicate that 20.2% of multiracial students recently used alcohol and 10.1% frequently (often/ a lot) reported binge drinking. A series of logistic regression analyses were conducted to examine associations between the variables. Findings indicated the following variables placed students at increased odds for recent alcohol use and frequent binge drinking ($p < 0.001$): Being a 9th/ 10th/ 11th/ 12th grader; having low involvement in positive (pro-social) behaviors, having high involvement in negative behaviors, having low numbers of parent protective factors, and having low numbers of teacher and school protective factors. Protective factors included involvement in positive (pro-social) behaviors and high positive parent, teacher and school factors, which protected multiracial youth from engaging in risky alcohol use. This study may assist health professionals in the health education and public health in understanding how positive (pro-social) behaviors, negative behaviors and parent/ teacher/ school factors are correlated with recent alcohol use and binge drinking among multiracial youth.

Keywords

Multiracial, Alcohol use, Binge drinking, Risk factors, Protective factors

Introduction

Public health professionals acknowledge youth alcohol use is an ongoing concern. In 2015, one in five (20.3%) youth between the ages of 12 to 20 used alcohol in the past 30 days and 12.9% reported binge drinking [1]. Binge drinking, also referred to as episodic heavy drinking, and is defined as any type of alcohol use that increases an individual's blood alcohol concentration to 0.08 grams percent or greater [2]. For males, this usually translates to five or more drinks in approximately two hours whereas for women, this translates to four or more drinks in approximately two hours [3].

Multiracial youth are found to be at greater risk than minority youth of one race or ethnicity for substance use such as alcohol use [4]. In 2014, NSDUH

found 21.1% of multiracial youth reporting using alcohol [5]. Limited data is available on recent alcohol use and binge drinking and multiracial youth.

Alcohol use may result in multiple unintended consequences for adolescents [6]. Such consequences include higher likelihood to engage in criminal activity, attempt suicide or suffer an alcohol-related injury, engage in risky sexual behaviors, drink and drive, ride in a vehicle with someone that has been drinking, impact brain function and development, engage in other drug use, and develop alcohol dependency [6-9].

Differences in alcohol use based on gender and age exist [10] reported that in past years of administration of the *Monitoring the Future (MTF)* survey there are noticeable gender differences in alcohol use and behaviors such as binge drinking; however other surveys of alcohol use rates and binge drinking show no significant differences among male and female youth [11] researched recent alcohol use, binge drinking, and reporting being drunk/ high in the past year among males and females and found no significant differences based on gender. Regarding age, national statistics collected on current alcohol use, heavy alcohol use, and binge drinking each show an increase in use as youth age (from 12-17) [9]. SAMHSA (2008) [9], reported that current alcohol use rates increased from the age of 12 to the age of 17, 3.4% to 26.2% respectively. In addition, rates of binge alcohol use in 2008 increased from age 12 to age 17, 1.5% to 17.2% respectively [9]. Findings by Stueve and O'Donnell [11] are consistent with previous research findings of increased use by age. From baseline (7th graders) to follow-up (10th grade), there were large increases in youth reporting ever using alcohol (+37.6%), recent alcohol use (+19.6%), and being drunk or high on another drug in the past year (+22%).

Risk factors increase the likelihood youth will use alcohol. Research conducted by Terling Watt [12] suggests that youth from racial/ethnic minority groups reporting high risk taking attitudes also report using alcohol more frequently than minority youth without these attitudes. Ho et al. [13] found that youth who reported higher risk-taking tendencies were more likely to suffer from alcohol-related problems. Brook & Brook [14] found that five variables were correlated to a youth's engagement in alcohol use: deviance, tolerance of deviance, noncompliance, rebelliousness, and lack of responsibility. Such research findings suggest that youth who express these personality characteristics are more likely to use alcohol [14]. Brook & Brook [14] also found impulsivity to be a significantly related to alcohol involvement.

Conversely, protective factors tend to reduce youth alcohol use. Benson et al. [15] found that youth with more "developmental assets" or protective factors are less likely to use alcohol, tobacco, and other drugs. The *40 Developmental Assets* described by Benson et al. [15] include positive (pro-social) behaviors such as doing homework (asset #23), participation in creative activities (asset #17), youth programs (asset #18), and religious communities (asset #19). Benson et al.'s [15] description of the *40 Developmental Assets* are typically framed in a positive fashion, however the "avoidance"

of becoming involved in risky behaviors might likely include school engagement (asset #22), bonding to school (asset #24), and positive peer influence (asset #15). Parent and school protective factors are identified much more clearly in the *40 Developmental Assets* framework and include positive family communication (asset #2), family boundaries (asset #11), school boundaries (asset #12), and high expectations (asset #16) [15]. Their findings support that youth having a high number of developmental assets are less likely to participate in negative behaviors such as alcohol, tobacco, and other drug use [15].

Additional protective factors such as positive parental relationships, family structure, relationship with school, involvement in activities (sports, church, etc.) may explain the racial/ ethnic differences in alcohol abuse and other substance use behaviors reported [12, 16-19]. Although some of the research on youth activity involvement is mixed, the majority of research finds that youth involvement in positive (pro-social) activities including sport teams, afterschool activities, and religious/ spiritual groups are less likely to use alcohol [14, 19]. Abbey et al. [19] found that for girls, participation in an afterschool activity (identified as school clubs, sports, religious groups, and any other organized activity) was more likely to serve as a protective factor.

Purpose of the Present Study

Although studies have been conducted to illustrate contributing factors to alcohol use and binge drinking among youth, very little research has examined the nature of these relationships with multiracial youth. Much of the literature also focuses on comparison studies with white youth and include small samples of multiracial youth. Additional studies are needed for substance abuse prevention and intervention professionals to effectively target multiracial youth with programs and education by identifying specific risk and protective factors for this population. Therefore, the purpose of the present study is to investigate the effect of involvement in positive (pro-social) behaviors, negative behaviors, parent protective factors, and school/ teacher protective factors on recent alcohol use (past 30 days) and frequent binge drinking among multiracial students. Specifically, for this study, the research questions examined were:

- 1) What is the extent of recent alcohol use and binge drinking among multiracial youth?
- 2) Does recent alcohol use and binge drinking differ based on demographic and background variables?
- 3) Does recent alcohol use and binge drinking differ based on involvement in positive (prosocial) and negative behaviors? and
- 4) Does recent alcohol use and binge drinking differ based on parent protective factors and teacher/ school protective factors?

Methods

Participants

Students in 7th-12th grades in one metropolitan school district participated in this study by completing the PRIDE national survey, which is a nationally recognized survey on student behaviors including substance use [20]. In this study, all students who self-identified as multiracial were included in this analysis ($n = 2134$).

Instrumentation

Variables in this analysis were developed directly from the measures available in the PRIDE youth survey. Five questions on positive (pro-social) behaviors were used to determine involvement in positive (pro-social) behaviors (e.g., *Do you make good grades?* and *Do you take part in school activities such as band, clubs, etc.?*). Four questions were used to determine involvement in negative behaviors (e.g., *Get into trouble at school?* and *Skipped school in past year?*). Three questions were used to determine parent protective factors (e.g., *Parents talk about Alcohol, Tobacco, and other Drugs [ATOD]?* and *Parents set clear rules about ATOD?*). Two questions were used to determine school/ teacher protective factors (e.g., *Teachers talk about ATOD?* and *School set clear rules about using ATOD?*).

Question responses were listed on a 5-point Likert scale and consisted of “Never/ Seldom/ Sometimes/ Often/ A lot”. For the purpose of this research, responses were dichotomized based on the median split into the following responses: “Never/ Seldom” representing a “low or no” response and “Often/ A lot” representing a “high or yes” response. For involvement in positive (pro-social) behaviors, an index was developed based on the possible response value of scale with the median value representing the division point between low participation and high participation. Low involvement in positive (pro-social) behaviors range from five to 15 whereas high involvement in positive (pro-social) behaviors ranged from 16 to 25. For negative behaviors, an index was developed based on the possible response values (four questions with a possible score range from four to 20) and dichotomizing into high and low based on the median split. Low involvement in negative behaviors range from four to five. High involvement in negative behaviors ranged from six to 20. The next items, parent protective factors, were also computed based on the median split into “high” and “low.” Low parent protective factors were considered scores three to ten whereas high parent protective factors were represented by scores 11 to 15. Similarly, teacher/ school protective factors were also dichotomized into “high” and “low” categories based on the median split. Low teacher/ school protective factors ranged from two to six whereas high teacher/ school protective factors ranged from seven to ten.

Previously and prior to survey administration, the PRIDE survey was tested for validity and reliability. Statistics conducted yielded correlation coefficients for stability reliability and internal consistency reliability > 0.81 .

Procedures

All schools participating in this study were recruited by

a local community coalition with an emphasis in substance abuse prevention. After obtaining parent consent, all students were surveyed in their classrooms by survey administrators. The local substance abuse prevention coalition trained all administrators on survey distribution procedures. In order to enhance participant comfort, all administrators remained in front of the classroom during data collection as a means of enhancing participant comfort. Students were provided information on the purpose of this study, the voluntary nature of participating in the study, and the anonymity of survey responses. Once surveys were completed, all students placed completed surveys in envelopes, which were then collected by survey administrators.

Data Analysis

All data was analyzed using IBM Statistical Package for the Social Sciences (Version 22.0). Chi Square analyses was used to determine any statistically significant differences between gender, level in school, recent alcohol use, and binge drinking. Chi-square analyses and odds ratios were computed to whether recent alcohol use and binge drinking differed based on gender, level in school (middle school versus high school), involvement in positive (pro-social) behaviors, involvement in negative behaviors, parent protective factors, and school/ teacher protective factors. As stated previously, certain variables were recoded into high and low categories (never/ seldom vs. often/ a lot) based on the median split.

Results

Demographic and background characteristics

Multiracial students ($n = 2,134$) enrolled in Greater Cincinnati areas schools completed the PRIDE survey. Students in the survey represented 7th through 12th graders from participating schools. The gender of students in this study was equally representative of both males and females with 51.2% female and 48.8% male (Table 1). The majority (56.4%) of the respondents were high school students (9th, 10th, 11th and 12th grades), with grade representation decreasing through 12th grade. Middle school students (7th and 8th grades) represented 43.6% of the sample. The grade representations were as follows: 7th grade (21.5%), 8th grade (22.2%), 9th grade (21.2%), 10th grade (15.2%), 11th grade (10.8%) and 12th grade (9.1%). More students reported that they did not have either a full or part-time job (74%) and 41.8% of students stated they resided with both of their biological parents (41.8%).

Extent of recent alcohol use and binge drinking

The percentage of males reporting recent alcohol use (18.7%) was only slightly lower than recent alcohol use reported by females (20.7%) (Table 2); however, gender was not statistically significant according to the analysis ($\chi^2 = 1.20$; $p = 0.273$). The percentage of males reporting binge drinking (10.3%) was only slightly higher than females (8.9%) and again was not statistically significant ($\chi^2 = 0.877$; $p = 0.349$).

Cross tabulations between level in school, recent alcohol

use, and binge drinking found that the percentage of high school students reporting regular alcohol use was considerably higher than the percentage reported by middle school students (29.1% and 8.2%, respectively) (Table 2). The same held true for the percentage of high school students reporting binge drinking (15.9%) when compared to middle school student reports of the same (2.9%). According to the analysis, the difference between middle school and high school students and regular alcohol use was statistically significant with high school students almost five times more likely to engage recent alcohol use ($\chi^2 = 136.17$, OR = 4.58, 95% CI = 3.49-6.01, $p < 0.001$). Differences among middle school and high school students and binge drinking were also statistically significant with high school students six times more likely to engage in binge drinking when compared to middle school students ($\chi^2 = 86.85$, OR = 6.26, 95% CI = 4.07-9.64, $p < 0.001$).

Table 1: Demographic and background characteristics of multiracial respondents.

Item	n	%
Sex		
Female	995	51.2%
Male	950	48.8%
Grade		
MS (7 th & 8 th)	913	43.6%
HS (9 th -12 th)	1180	56.4%
Have a Job		
Yes, full time	41	2.0%
Yes, part time	481	24.0%
No	1483	74.0%
Resides with		
Both parents	872	41.8%
Mother only	532	25.5%
Father only	77	3.7%
Mother & Stepfather	308	14.8%
Father & Stepmother	64	3.1%
Other	232	11.1%

Note: n = 2,134; percent refers to valid percent's; missing values excluded.

Involvement in positive (pro-social) behaviors

Although the majority of students reported that they made good grades (93.7%), students were nearly equally split on their participation in sports or other activities with more students reporting greater participation in school sports teams (48.4%) and the lowest participation in community activities (31.1%). Nearly half (49.3%) of the students reported attending church, synagogue, etc. "Often or A lot". In order to determine level of involvement in positive (pro-social) behaviors between "high" and "low", an index was developed based on the possible response value of scale (5 questions with a possible score range from five to 25) with the median value representing the division point between low participation and high participation. Low involvement in positive (pro-social) behaviors was represented by scores from five to 15. High involvement in positive (pro-social) behaviors was represented

Table 2: Recent alcohol use and frequency of binge drinking by sex and grade.

Item	Used in the past month n (%)	Did not use in the past month n (%)	Reported Binge Drinking n (%)	Did not report Binge Drinking n (%)
Sex				
Female	200 (20.7%)	767 (79.3%)	80 (8.9%)	815 (91.1%)
Male	172 (18.7%)	749 (81.3%)	87 (10.3%)	761 (89.7%)
Grade				
Middle School (7 th & 8 th)	73 (8.2%)	814 (91.8%)	25 (2.9%)	829 (97.1%)
High School (9 th -12 th)	333 (29.1%)*	811 (70.9%)	162 (15.9%)*	858 (84.1%)

Note: Chi-Square analyses were conducted separately sex and grade.

*** $p < 0.001$

Table 3: Recent alcohol use and participation in positive (pro-social) activities, involvement in negative behaviors, parent protective factors, and school/teacher protective factors.

	Used in the past month n (%)	Did not use in the past month n (%)	OR	CI	p
Level of Participation in Positive Activities					
Low Participation	247 (23.9%)	787 (76.1%)	0.65	0.52-0.82	< 0.001
High Participation	151 (16.9%)	740 (83.1%)			
Level of Involvement in Negative Behaviors					
Low Involvement	76 (7.9%)	883 (92.1%)	5.49	4.19-7.18	< 0.001
High Involvement	321 (32.1%)	680 (67.9%)			
Parent Protective Factors					
Low Protective Factors	260 (30.6%)	590 (69.4%)	0.467	0.37-0.59	< 0.001
High Protective Factors	127 (17.1%)	617 (82.9%)			
School/Teacher Protective Factors					
Low Protective Factors	225 (26.6%)	620 (73.4%)	0.521	0.42-0.65	< 0.001
High Protective Factors	187 (15.9%)	989 (84.1%)			

by scores from 16 to 25. Statistical analyses found a significant difference in recent alcohol use based on level of involvement in positive (pro-social) behaviors with students reporting high

involvement in positive (pro-social) behaviors were almost half as likely to engage in recent alcohol use ($\chi^2 = 14.06$, OR = 0.65, 95% CI = 0.519-0.815, $p < 0.001$) (Table 3). Results indicated no statistically significant difference in binge drinking based level of involvement in positive (pro-social) behaviors ($\chi^2 = 3.24$, $p = .072$) (Table 4).

Table 4: Frequency of binge drinking and participation in positive (pro-social) activities, involvement in negative behaviors, presence of parent protective factors, and presence of school protective factors.

	Reported Binge Drinking n (%)	Did not report Binge Drinking n (%)	OR	CI	p
Level of Participation in Positive Activities					
Low Participation	107 (11.5%)	826 (88.5%)	0.752	0.55-1.03	0.072
High Participation	75 (8.9%)	770 (91.1%)			
Level of Involvement in Negative Behaviors					
Low Involvement	32 (3.4%)	903 (96.6%)	5.92	4.0-8.77	< 0.001
High Involvement	157 (17.3%)	748 (82.7%)			
Parent Protective Factors					
Low Protective Factors	126 (16.3%)	647 (83.7%)	0.481	0.35-0.67	< 0.001
High Protective Factors	60 (8.6%)	641 (91.4%)			
School/Teacher Protective Factors					
Low Protective Factors	109 (14.3%)	654 (85.7%)	0.483	0.36-0.65	< 0.001
High Protective Factors	82 (7.5%)	1018 (92.5%)			

Involvement in negative behaviors

The majority of multiracial youth reported no involvement in negative behavior at the time of the survey (Table 4). The area that represented the highest involvement in negative behaviors was “getting into trouble at school” at 11.8%. The remaining areas of negative behaviors remained quite low at less than 10% of multiracial students in each area: “been in trouble with the police” (7%), “skipped school” (6.4%), and “take part in gang activities” (6.4%). In order to determine level of involvement in negative behaviors between “high” and “low”, an index was developed based on the possible response value of scale (4 questions with a possible score range from four to 20) with the median value representing the division point between low involvement and high involvement. Low involvement in negative behaviors was represented by scores from four to five. High involvement in negative behaviors was represented by scores from 6 to 20. Statistical analyses were computed to examine whether differences existed in recent alcohol use and

binge drinking based on low or high involvement in negative behaviors. Results indicated significant differences were found in recent alcohol use with multiracial students reporting high involvement in negative behaviors were approximately five times more likely to engage in recent alcohol use ($\chi^2 = 176.74$, OR = 5.49, 95% CI = 4.19-7.18, $p < 0.001$) (Table 3). Binge drinking was also significant based on level of involvement in negative behaviors with students with high involvement nearly six times more likely to engage in binge drinking ($\chi^2 = 96.76$, OR = 5.92, 95% CI = 4.00-8.77, $p < 0.001$) (Table 4).

Parent protective factors

Overall, the frequency of parent protective factors reported by multiracial students who completed the survey was mixed. The majority (79.2%) of students reported that their “parents set clear rules about using alcohol and other drugs”, however a nearly equivalent percentage of students reported that their “parents talk about alcohol, tobacco, and other drugs” (56.3% reported “Often/ A lot” and 43.7% reported “Never/ Seldom”) and “parents punish them when they break the rules about alcohol and other drugs” (47.9% reported “Often/A lot” and 52.1% reported “Never/ Seldom”). In order to determine level of parent protective factors between “high” and “low”, an index was developed based on the possible response value of the scale (3 questions with a possible score range from three to 15) with the median value representing the division point between low protective factors and high protective factors. Low parent protective factors were represented by scores from three to ten. High parent protective factors were represented by scores from 11 to 15. Analyses were also computed to investigate if differences existed in recent alcohol use and binge drinking based on low or high parent protective factors and found statistically significant differences. Logistic regression analysis found that multiracial students reporting high parent protective factors were half as likely to report either recent alcohol use or binge drinking ($\chi^2 = 39.44$, $p < 0.001$, OR = 0.47, 95% CI = 0.37-0.59 (Table 3) and OR = 0.48, 95% CI= 0.35-0.67, and $\chi^2 = 19.98$, $p < 0.001$, respectively) (Table 4).

School/teacher protective factors

The percentage of school/ teacher protective factors reported by multiracial students was also represents mixed findings. A total of 82.4% of students stated that their “school set clear rules about using alcohol and other drugs.” Approximately two-thirds (63.9%) of students also reported that their “teachers talk about alcohol, tobacco, and other drugs.” In order to determine level of school/ teacher protective factors between “high” and “low”, an index was developed based on the possible response value of the scale (2 questions with a possible score range from two to 10) with the median value representing the division point between low protective factors and high protective factors. Low school/ teacher protective factors were represented by scores from two to six. High school/ teacher protective factors were represented by scores from seven to ten. Statistical tests to examine whether differences existed in recent alcohol use and binge drinking based on low or high school/ teacher protective factors were

conducted and found statistically significant differences on both recent alcohol use ($\chi^2 = 34.85$, OR= 0.52, 95% CI = .42-0.65, $p < 0.001$) (Table 3) and binge drinking ($\chi^2 = 22.85$, OR = 0.48, 95% CI= 0.36-0.65, $p < 0.001$) (Table 4).

Discussion

Recent alcohol use and binge drinking have multiple negative consequences for youth and society. Youth who use alcohol are more likely to be involved in criminal activity, attempt suicide or suffer an alcohol-related injury, engage in risky sexual behaviors, drink and drive, ride in a vehicle with someone that has been drinking, impact their brain function and development, engage in other drug use, and develop alcohol dependency [6-9, 11]. Prevention programs designed to prevent youth from engaging in negative behavior and increasing engagement in positive (pro-social) behaviors are likely to reduce youth involvement in recent alcohol use and binge drinking. Another strategy might include encouraging parents, teachers and schools to foster positive connections with youth in order to foster healthy parent/ adult relationships and connectedness. These protective factors can reduce youth involvement with recent alcohol use and binge drinking.

Findings from the present study indicated being a high school student; having low involvement in positive (pro-social) behaviors, having high involvement in negative behaviors, having low levels of parent protective factors (only increased odds of recent alcohol use, binge drinking was not significant), and having low levels of school/ teacher protective factors increased the risk of recent alcohol use and binge drinking among multiracial youth. Both national statistics and previous research found that current alcohol use, heavy alcohol use, and binge drinking also increase as youth age (from 12-17) [9, 11, 21]. The current study found that recent alcohol use and binge drinking was significantly higher among multiracial high school students (9th- 12th). This difference may exist for a number of reasons. As youth age, perception of harm related to alcohol use, parental acceptance of youth use, changes in social norms, and/ or greater access to alcohol through older siblings/ friends, alcohol outlets, or parents all begin to change. If this risk increases for any or all of these reasons, then effective interventions may need to also include environmental and policy efforts to address efforts related to youth and parental norms and youth access to alcohol.

Previous research found that youth involved in positive (pro-social) behaviors are less likely to use alcohol [13, 19, 22]. Additional research in this area suggested that the impact of involvement in positive (pro-social) behaviors between males and females and middle school and high school students may differ and that the impact of involvement in school team sports may, in fact, increase involvement with alcohol [19, 22, 23]. The present study found significant results on recent alcohol use among multiracial students and involvement in positive (pro-social) behaviors, however, no significance between involvement in positive (pro-social) behaviors and binge drinking among multiracial students. Further research in this area is needed to understand the dynamics of involvement in positive (pro-social) behaviors and activities and how

involvement is determined. Findings from additional research may suggest that involvement in positive (pro-social) behaviors on recent alcohol use and binge drinking differs based on gender and age. Based on future findings, the development of and target audience of interventions to address recent alcohol use and binge drinking may need to be modified.

Previous research suggests that youth reporting low involvement in negative behaviors are also less likely to use alcohol [8, 12-14, 24]. This research suggests not only increased risk of alcohol use but also increased risk of heavy alcohol use and alcohol-related problems [8, 24]. Multiracial students in this study who reported low involvement in negative behaviors were also significantly less likely to recently use alcohol or binge drink. This study is consistent with other research on involvement in risky behaviors and alcohol, however it is difficult to determine the impact that “type” of negative behavior involvement and “level” (how much they engage in the behavior) of negative behavior involvement has on recent alcohol use and binge drinking. An additional consideration that needs to be explored is whether alcohol involvement itself should be considered a “risky behavior”.

Research demonstrates that youth with high levels of parent protective factors are less likely than their counterparts to use alcohol [14, 18, 25-27]. Previous research found youth with parents who have tolerant attitudes about alcohol use and use by youth are more likely to engage in alcohol use [14, 27]. Based on survey variables, it is not possible to determine parent use of alcohol and the possible relationship parent alcohol use may have on parent protective factors. It is likely multiracial youth in households exhibiting high parent protective factors have parents who do not abuse alcohol. Similarly, youth in low parent protective factor households may be experiencing a parent with an alcohol problem. Based on previous research [28], parental inconsistency, including unpredictable rule setting and enforcement, and unrealistic parent expectations have been identified as issues in households with parent who abuse alcohol. Youth in such households may experience low parent protective factors and therefore may be placed at risk for alcohol use and binge drinking.

Additional research suggests lack of parent monitoring and low levels of parent communication are related to youth alcohol use [25]. In research conducted by Nash et al. [25], it was suggested that parental communication may influence both engagements in negative behaviors and involvement in positive (pro-social) behaviors. This may suggest that parental influence may indirectly influence other behaviors that in turn increase alcohol use. The research conducted by Radina & Cooney [18] on adolescents reviewing measures such as communication with mother, emotional closeness with mother, and contact with mother found that these maternal measures did not significantly differ among multiracial adolescents and their single-race peers. However, Radina & Cooney [18] reported significant differences for minority females of one race on the amount of communication with mothers compared to their multiracial and white counterparts. Radina & Cooney [18] also found that there were significant differences among multiracial boys, reporting lower levels of emotional closeness and communication with their father than their single race

peers. In another study conducted by Bossarte & Swahn [26], findings illustrated a significant negative association between the early initiation of alcohol use and parental monitoring. Research found that white students reported higher levels of parental monitoring than other single race group in the study (Black and Hispanic students) [26]. The current findings suggest that multiracial students that have high parental protective factors use alcohol at lower rates than students with low levels of parent protective factors. Additional research is needed to determine the impact of family level and parent level protective factors (e.g., parental communication and parental monitoring) on multiracial youth's recent alcohol use and binge drinking.

Youth with high levels of teacher and school protective factors are less likely to use alcohol [26, 29]. In the study conducted by Brossarte & Swahn [26] that measured school support, results found that there were "no differences" in level of school support and early initiation alcohol, however an examination of the racial/ ethnic differences revealed that white students were significantly less likely than their Black or Hispanic peers to engage in early alcohol use when high levels of school support were reported. The current study found that multiracial youth who report high levels of teacher and school protective factors are less likely to participate in either recent alcohol use or binge drinking. Additional research is needed to identify the specific factors that youth identify as "school and teacher support" and how that influences recent alcohol use and binge drinking among multiracial youth.

Practical Implications

Protective factors such as involvement in positive (pro-social) behaviors and positive parent, teacher and school factors appear to prevent multiracial youth from engaging in recent alcohol use and binge drinking. The results of the current study should be considered as health professionals are engaging in alcohol prevention and intervention activities for multiracial youth. Findings indicate the importance of health educators, program developers, parents, schools, and youth serving professionals to encourage youth involvement in positive (pro-social) behaviors and avoidance of negative behaviors. Additional program and policy should focus on the intentional development of positive relationships and connections between youth and their parents and/ or school/ teachers. Programs, policies, and perhaps social marketing campaigns that (1) promote communication with youth about the risk of recent alcohol use and binge drinking, (2) establish policies and informal parent rules that enact clear rules, guidelines, and enforcement around alcohol use, and (3) foster positive relationships between youth, their parents, and the large community are likely to have a significant impact on multiracial youth involvement in alcohol.

Limitations of the Study

This study used a cross-sectional survey design, which limits the data available to one point in time making it difficult to determine causation. It is also difficult to completely

guarantee the accuracy of responses provided by students in this study. Also, the independent variables selected may in fact co-vary with each other. For example, involvement in afterschool activities may decrease a student's likelihood of being involved in negative behaviors. Another limitation of this study that also surfaced in previous literature was that recent alcohol use and binge drinking may each be considered "risky/ negative behavior". Significant relationships may have diminished or disappeared entirely if these variables were more accurately specified on the survey.

Conclusion

The present study found approximately one in five male and female students reported recent alcohol use and approximately one in ten reported binge drinking. Grade level, involvement in positive (prosocial) behaviors, involvement in negative behaviors, and holding a high number of parent level and teacher and school level protective factors were all significantly associated with alcohol use. Based on study findings, initiatives that specifically address the needs of multiracial youth may be warranted. Increasing engagement in positive (prosocial) behaviors and increasing positive parent and teacher/ school factors may be important as a means of reducing recent alcohol use and binge drinking among this population.

Future research initiatives may wish to examine individual variable protective factors to determine associations with recent alcohol use and binge drinking. Rather than combining variables into a global scale, leaving variables as stand-alone in analyses may also be interesting for substance use professionals and others. In addition, in order to examine multiracial youth in depth, no comparisons were made with other races and ethnicities. Comparing multiracial youth to white peers and other racial groups, may also lead to additional data that would benefit future programming and intervention efforts. Lastly, it would also be interesting to examine the effect of parent alcohol use and abuse on parent protective factors and multiracial youth alcohol use. Multiracial youth may experience greater adverse effects from parent alcohol use as this population is already at higher risk for use than other single races and ethnicities. The current study provides an important analysis for an understudied, vulnerable population. Study findings may encourage tailored culturally appropriate programs on alcohol use for multiracial youth.

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