



## Brief report: Affluence and college alcohol problems: The relevance of parent- and child-reported indicators of socioeconomic status



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### A B S T R A C T

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A mediational model predicting alcohol problems was tested in a sample of college students ( $n = 130$ ) and their parents ( $n = 115$ ). The indirect effect of substance-use coping and the age of onset of alcohol use were examined in the relationship between socioeconomic status (SES) and alcohol problems. Findings indicated that parent-reported SES was associated with increased alcohol problems; the age of onset of alcohol use partially mediated this relationship. Substance-use coping was not a significant mediator in the model. Student-reported SES was not associated with alcohol problems. Implications for examining social status in relation to college drinking behaviors are discussed.

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Higher socioeconomic status (SES) has been associated with increased rates of college drinking (Wechsler, Dowdall, Davenport, & Castillo, 1995; Wechsler & Kuo, 2003; Wechsler & Nelson, 2008). There is also broad evidence of alcohol use and experimentation among young people from economically privileged backgrounds (Crawford, 1995; Hanson & Chen, 2007; Luthar & Becker, 2002; Luthar & D'Avanzo, 1999; Luthar & Latendresse, 2005). Risk behaviors among higher SES adolescents have been explained in the context of the "culture of affluence," wherein upper-class youth are faced with achievement and social pressures as well as feelings of isolation (Luthar, 2003). These social pressures contribute to negative affect and substance use (Luthar & Latendresse, 2005).

The culture of affluence provides evidence that substance use behaviors emerge as a coping strategy. The use of alcohol to manage negative emotions is associated with problematic outcomes (Buchmann et al., 2010). It is also important to consider that, among college students, those from higher SES backgrounds may have engaged in earlier experimentation with alcohol use. This is a risk factor for college drinking and negative alcohol-related consequences (Buchmann et al., 2010). However, the literature has not sufficiently explored these mechanisms in college drinking outcomes. Furthermore, it has been established that different dimensions of SES (i.e., income, education level, occupation) are unique with respect to their relationship to health outcomes (Duncan, Daly, McDonough, & Williams, 2002; Geyer & Peter, 2000). We address this void in the literature by examining how SES derived from multiple indicators predicts problematic drinking outcomes.

Many young adults have a limited perspective on family finances; this impacts the accuracy of self-reported student SES data. The current study examines both student- and parent-reported SES dimensions as predictors of alcohol problems among college students. Both indicators of income and social class are assessed. We predicted that higher SES would be associated with greater alcohol problems in a college sample. Based on our read of the literature, we proposed that the

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relationship between SES and alcohol problems would be mediated by substance-use coping and the age of onset of alcohol use.

## Method

### Participants

The sample study consisted of parent and student dyads. The final sample of 130 students from a large public university was 72% ( $n = 93$ ) female and 28% ( $n = 36$ ) male. Participants were recruited through campus postings soliciting participation in a study of college drinking. During prescreening, students were asked to identify one parent who might be willing to participate in the study. Student participants were paid \$45.00. The design encouraged and targeted the recruitment of ethnic minority participants resulting in a racially diverse sample. The racial breakdown of the sample was Caucasian/White (62%), Black/African American (18%), Asian American/Pacific Islander (11%), Hispanic/Latino(a) (7%), Native American (2%), and Biracial (2%).

There were 115 parent participants in the study, of which 75% ( $n = 86$ ) were women and 25% ( $n = 29$ ) were men. Parents received a \$20.00 gift card for completing a one-time online survey.

### Measures

#### Socioeconomic status

Indicators of SES were collected for both parents and students: (1) family income, (2) family situation, and (3) social class. There were eleven categories in the family annual income scale: 1 (\$0–14,999), 2 (\$15,000–\$24,999), 3 (\$25,000–\$34,999), 4 (\$35,000–44,999), 5 (\$45,000–\$54,999), 6 (\$55,000–64,999), 7 (\$65,000–74,999), 8 (\$75,000–84,999), 9 (\$85,000–\$94,999), 10 (\$95,000–104,999), and 11 (\$105,000 or more). Family situation was assessed to determine the participants' experiences of social class. A single item, "How would you best describe the economic situation as you were growing up?" was developed by Pfeffer and Gutierrez (2000) and has been used in other studies of adult development (Winter, Torges, Stewart, Henderson-King, & Henderson-King, 2007). This measure was treated as continuous, with five response options provided: 0 (*had barely enough to get by*), 1 (*enough to get by—but no more*), 2 (*were solidly middle class*), 3 (*had plenty of extras*), and 4 (*had plenty of luxuries*). Participants also indicated their current social class using the following categories: (1) Working class/lower-middle class, (2) middle class, (3) upper-middle class (4), upper class, and (5) other.

#### Alcohol problems

Alcohol problems were assessed by summing the endorsement (yes or no) of 14 items derived from the DSM IV assessment of problem drinking. Examples of these items include "missing time from school or work" and "performing at less than your usual academic standards." The potential range for this subscale was 0–14.

#### Age of onset

The age of onset of drinking was assessed using the self-reported age at first alcoholic drink.

#### Substance-use coping

Substance-use coping was assessed using the two-item subscale of the Brief COPE Inventory (Carver, 1997). Participants indicated their responses to managing stressful life events on a scale ranging from 1 (*I haven't been doing this at all*) to 4 (*I've been doing this a lot*). The alpha for this scale was .87.

#### Analysis plan

Bootstrapping has been advocated as a superior approach to testing mediation (Hayes, 2009; MacKinnon, Fairchild, & Fritz, 2007; Shrout & Bolger, 2002) due to its accuracy, simplicity, and power to detect significant effects (MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2004). We performed bootstrapping to estimate the confidence interval and significance of the indirect effect using the SPSS macro developed by Preacher and Hayes (2008) to obtain bias-corrected bootstrap estimates for the present two-mediator model using 10,000 bootstrapped samples.

## Results

### Preliminary analyses

Students and parents reported three indicators of family socioeconomic status: (a) family income, (b) family situation, and (c) social class. Principal component analysis has frequently been applied to summarize multiple measures of SES into a single indicator (e.g., Avan & Kirkwood, 2010; Spriggs, Halpern, Herring, & Schoenbach, 2009). Similarly, we followed the recommendations of Vyas and Kumaranayake (2006) and conducted a principal component analysis on the three indicators listed above. Based on the Kaiser rule of eigenvalues greater than one, a single component was retained, which accounted for 52%

**Table 1**  
Means, standard deviations, and correlations of study variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Family income (P)	–												
2. Family situation (P)	.48	–											
3. Social class (P)	.15	.11	–										
4. SES (P)	.84	.80	.44	–									
5. Family income (S)	.16	.08	.52	.29	–								
6. Family situation (S)	.09	.13	.57	.29	.63	–							
7. Social class (S)	.13	.11	.55	.29	.61	.67	–						
8. SES (S)	.15	.13	.63	.33	.85	.88	.88	–					
9. Age of onset	–.16	–.12	–.14	–.19	–.04	–.10	–.11	–.10	–				
	–.02	–.03	.03	–.02	–.07	–.06	–.05	–.07	–.07	–			
10. Substance-use coping													
	.34	.18	.11	.31	.05	.02	.07	.05	–.26	.44	–		
11. Alcohol problems													
	–.08	.07	.01	.00	.21	–.01	–.01	.07	–.06	.06	.10	–	
12. Gender													
	–.08	–.22	–.19	–.21	–.38	–.24	–.23	–.33	.03	–.06	–.15	–.32	–
13. Race													
M	6.27	2.57	2.38	–.03	7.92	3.21	2.28	.11	15.95	2.69	1.57	.29	.38
SD	3.15	.81	.79	.98	3.21	.92	.77	.96	2.46	1.25	1.84	.45	.49

Note.  $N = 104$ . For  $|r| \geq .20$ ,  $p < .05$ ; for  $|r| \geq .26$ ,  $p < .01$ ; for  $|r| \geq .32$ ,  $p < .001$ .

P = Parent report; S = Student report. Gender: Male = 1, Female = 0; Race: Majority = 0, Minority = 1.

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and 74% of the observed variance in parent-reported SES and student-reported SES respectively. Loadings on the first component were used as weights to generate the parent-reported SES indicator (family income: .84; family situation: .81; and social class: .46) and student-reported indicator (family income: .84; family situation: .86; and social class: .88).

#### Descriptive statistics and correlations

Table 1 includes descriptive statistics and correlations for study variables. The parent and child ratings indicated that the sample was, on average, middle class. The mean ratings for income for both parents and students were within the range or slightly above the median family income in the United States (DeNavas-Walt, Proctor, & Smith, 2012), and the mean experiential class rating for parents was middle class and a little more luxurious for students.<sup>1</sup> Overall, the participants reported low levels of alcohol problems and moderate amounts of substance-use coping. The correlations between SES measures and alcohol problems indicated that parent-reported SES was a significant predictor of students' alcohol problems ( $r = .31$ ,  $p = .001$ ), whereas student-reported SES was not ( $r = .05$ ,  $n.s.$ ). We further evaluated the effects of two SES variables in a multiple regression model with alcohol problems as the outcome variable. The model was significant,  $R^2 = .10$ ,  $p < .01$ . As expected, parent-reported SES was a significant predictor ( $\beta = .33$ ,  $p = .001$ ) while student-reported SES was nonsignificant ( $\beta = -.06$ ,  $n.s.$ ).

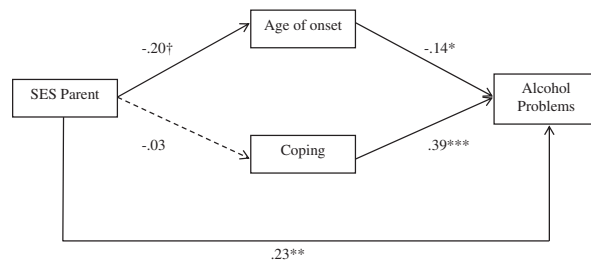
Results of the mediation analysis for parent-reported SES are presented in Fig. 1, with student gender (Male = 1, Female = 0) and race (Minority = 1, White = 0) entered as control variables. The sample included 104 dyads. As expected, alcohol problems were negatively associated with age of drinking onset ( $\beta = -.14$ ,  $p < .05$ ) and positively associated with substance-use coping ( $\beta = .39$ ,  $p < .001$ ). However, the effect of SES on age of drinking onset was only marginally significant ( $\beta = -.20$ ,  $p = .05$ ), while the effect of SES on substance-use coping was near zero ( $\beta = -.03$ ,  $n.s.$ ).

In terms of mediation analysis, the bootstrap results indicated a significant indirect effect through age of onset,  $\beta = .03$ ,  $p < .05$ , as the 95% confidence interval excluded zero (.002–.082). Thus, participants from affluent family environments were more likely to start drinking alcohol at a younger age and were subsequently more likely to have alcohol-related problems. However, the indirect effect through substance-use coping was nonsignificant,  $\beta = -.02$ ,  $n.s.$ , with the 95% confidence interval ranging from  $-.120$  to  $.073$ . In addition to the mediated effects, SES had a significant direct effect on alcohol problems, suggesting additional mediating mechanisms unaccounted for in the present study. Thus, the age of onset only partially mediated the effect of SES on alcohol problems. Finally, the model explained 33% of variance in alcohol problems.<sup>2</sup>

We also performed a mediation analysis with the student-reported SES variable as the predictor, using the same procedure described above. The bootstrapped 95% confidence interval of the indirect effects for both age of onset ( $-.009$  to  $.075$ ) and for substance-use coping ( $-.149$  to  $.038$ ) included zero (Fig. 2). Therefore, neither age of onset nor substance-use coping mediated the effects of student-reported SES.

<sup>1</sup> According to the census, the real median household income in the United States in 2011 was \$50,054, and the median family household income was \$62,273.

<sup>2</sup> The same pattern of results emerged after conducting the same analysis without using participant gender and minority status as covariates. Results without covariates are available from the first author upon request.



**Fig. 1.** Standardized coefficients for the mediation model. Note.  $N = 104$ . Students' gender and minority status were entered as covariates. † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . Model  $R^2 = .33$ ,  $p < .001$ . Dashed lines indicate nonsignificant paths.

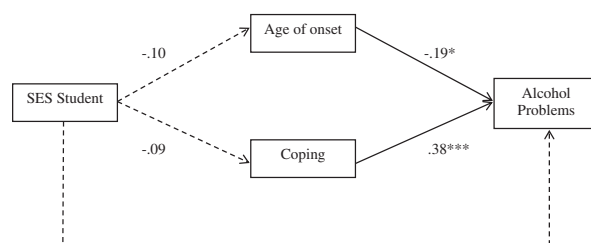
## Discussion

The current study examined parent- and child-reported SES as predictors of alcohol problems among college students. The indirect effects of substance-use coping and the age of onset of drinking were tested. We found that parent-reported SES was associated with greater alcohol problems, and this relationship was indirectly influenced by the earlier age of alcohol-use initiation among higher SES young adults. Interestingly, substance-use coping was not a significant mediator. We also found that student-reported SES was not predictive of alcohol problems.

Past studies have asserted that social stressors experienced by upper class youth may result in the use of substances to cope, particularly that the pressure for achievement accompanied by feelings of isolation can result in distress, depression, and externalizing behaviors (Luthar, 2003). However, our findings support that earlier alcohol experimentation is the mechanism that is relevant to alcohol problems. Thus, we propose that a greater understanding of the factors supporting early experimentation among high SES youth merits further investigation, particularly among college students. Studies point to the earlier onset of substance use as it relates to family structure and parental relationships (Barrett & Turner, 2006). However, many studies examining parental monitoring and the quality of the parental relationship in risk behaviors have focused on single-parent families, low-income youth, or youth otherwise classified as at-risk (Hemovich & Crano, 2009). Similar to findings based on low SES adolescent samples, early alcohol experimentation might point to less parental monitoring and involvement among those from higher SES backgrounds, as well. Furthermore, coping did not mediate the relationships between SES and alcohol problems in our sample. These findings offer a preliminary challenge to the assertion that the primary mechanism for the “culture of affluence” is that higher SES youth use substances to manage distress.

There are several limitations to the current study. These data are cross sectional; thus, causal relationships cannot be assumed. We are unable to examine how SES influences patterns of alcohol use over time during important developmental periods of social transition (e.g., from adolescence to young adulthood). The sample was not random, and the majority of the dyads were young women and their mothers. A sample with more male participants might reveal different mechanisms (Costigan & Cox, 2001). Additionally, it is important to note that student-reported SES was not associated with alcohol problems in this sample. Student-reported SES may be less accurate than parent-reported indicators, and future studies should further explore the predictive differences in self-reported and objective SES indicators (i.e., census tract data). Other dimensions of SES, including parental educational background and employment status, should also be investigated in future studies.

The majority of students will “mature out” of excessive alcohol use after college (Jackson, Sher, Gotham, & Wood, 2001); however, it is important to distinguish dimensions that indicate the potential for current and future risks associated with alcohol use. SES correlates of college drinking allow a more contextual examination as it relates to social status and privilege (Capraro, 2000). Considering the risk factors related to social status offers a more complete understanding of underlying influences in order to develop more efficacious plans for interventions.



**Fig. 2.** Standardized coefficients for the mediation model. Note.  $N = 104$ . Students' gender and minority status were entered as covariates. † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . Model  $R^2 = .31$ ,  $p < .001$ . Dashed lines indicate nonsignificant paths.

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