

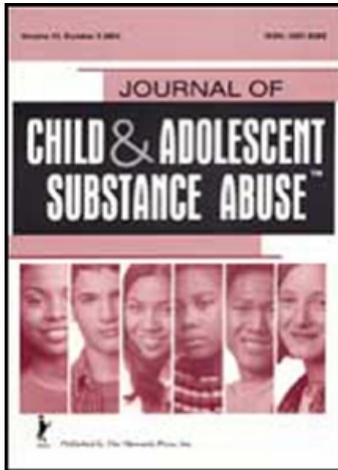
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# Early Alcohol Initiation Increases Risk Related to Drinking Among College Students

Joseph W. LaBrie  
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**ABSTRACT.** This study investigated the influence of age of alcohol initiation on current alcohol use and alcohol-related problems in a diverse college student sample. Participants ( $N = 214$ ) completed a questionnaire assessing attitudes, beliefs, and behavioral habits regarding alcohol and other drugs. Early alcohol initiation (alcohol use before age 15) was more strongly associated with frequent binge drinking in college and positive alcohol perceptions than later initiation. Early initiators used other drugs at earlier ages and were more likely to have used marijuana in the past month than either middle (ages 15-17) or late (ages 18 or older) initiators. Ethnic differences, but no gender differences,

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were observed. Implications for prevention, intervention, and education are discussed. doi:10.1300/J029v17n02\_08 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2007 by The Haworth Press. All rights reserved.]

**KEYWORDS.** Early onset, alcohol initiation, college students, alcohol use, alcohol-related consequences, reasons for drinking, gender

### INTRODUCTION

Compared to the rest of the population, college students typically drink more frequently and more heavily (Ham & Hope, 2003; Schulenberg & Maggs, 2002). Wechsler and colleagues (1998) reported that two in five college students frequently engaged in binge drinking (men who drink five or more drinks and women who drink four or more drinks per drinking occasion). Wechsler, Davenport, Dowdall, Moeykens, and Castillo (1994) reported that frequent college binge drinkers were 25 times more likely than their non-binge drinking peers to experience five or more alcohol-related consequences such as falling behind in school, engaging in unplanned and/or unprotected sexual activity, getting in trouble with law enforcement, or requiring medical treatment for an alcohol overdose. College health educators direct considerable attention and resources toward reducing alcohol consumption and negative consequences of drinking in college students.

Positive attitudes toward drinking formed early in adolescence through peers and activities that socially reinforce drinking carry into the college experience (McCabe, 2002). Thus, adolescents who form positive drinking attitudes by the time they enter college may be predisposing themselves to heavy or frequent college drinking (Kahler, Read, Wood, & Palfai, 2003). Many of these high school students go on to experience difficulties with alcohol in college.

#### *Age of Initiation and Consequences*

Some have suggested that adolescents who begin drinking alcohol at earlier ages have a higher incidence of alcohol abuse and alcohol-related problem behaviors in college (Gruber, DiClemente, Anderson, & Lodico, 1996; Warner & White, 2003). More alarming, individuals who

first use alcohol before age 14 are at increased risk of developing alcohol use disorders, including alcohol dependence (Grant & Dawson, 1997; Ziegler, Wang, & Yoast, 2005). Likewise, Harford, Wechsler, and Muthen (2002) suggested that heavy, episodic drinking at early ages could put an individual at increased risk for experiencing significant negative alcohol-related consequences during the college years. These problems and negative consequences may include alcohol-related violence, injuries, driving under the influence of alcohol and drugs, and falling behind in work or school due to alcohol and drug use. In addition to alcohol-related problems, early onset use of alcohol increases likelihood of other drug use (e.g., Grunbaum et al., 2004; Kandel, 1982; National Institute of Alcohol Abuse and Alcoholism [NIAAA], 2006). The younger the individual is when they begin to drink, the more likely they will engage in risky behaviors, including other drug use.

There is some discrepancy in the literature about what ages are considered early onset. Gruber et al. (1996) reported early alcohol initiators as those who began using alcohol between ages 10 and 12 and late alcohol initiators as those who began using alcohol after the age of 13. According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2003), those under age 15 are considered early users and are compared to those who initiated alcohol use at the age of 20 or older. Based on data collected from the National Longitudinal Alcohol Epidemiological Survey, Grant and Dawson (1997) reported that four times as many individuals who reported drinking alcohol before the age of 15 became alcohol dependent as compared to those who first reported drinking at the age of 20 or older. DeWit and colleagues (2000) report early use as those aged 11-14, which is based on the age at which a rapid progression to alcohol-related harm appeared evident. The age of early onset is often defined in reference to an increase in alcohol-related problems. For the purposes of this study, and in order to encompass the suggested early age of onset by NIAAA and other previous research, early initiation will be defined as those who consumed more than a few sips of alcohol with peers before the age of 15.

Even after controlling for alcohol dependence, early alcohol initiators often report placing themselves in situations while drinking that increased their risk of injury, not only when they were adolescents, but also as adults (Hingson, Heeren, Jamanka, & Howland, 2000). In addition, early alcohol initiators were more likely to believe that they can consume more drinks than others and still drive safely and legally (Hingson, Heeren, Zakocs, Winter, & Wechsler, 2003). Grant and Dawson (1997) reported that age at first use of alcohol is a strong predictor of lifetime

alcohol abuse and dependence, and is associated with a variety of health problems. They further found that 40% of those who initiated drinking before the age of 13 were classified with alcohol dependence at some time in their lives, whereas only 17% of those who began drinking at the age of 18 experienced alcohol dependence. NIAAA reports that those who initiate drinking before the age of 15 are four times more likely to experience alcohol dependence at sometime in their lives compared to those who begin drinking at the age of 20 (Grant & Dawson, 1997). However, it is not clear if early initiation of alcohol use increases the risk of alcohol dependence or if it indicates a predisposed vulnerability to alcohol dependence (Dawson, 2000).

### *Normative Beliefs and Reasons for Drinking*

Frequent college binge drinkers consistently inaccurately estimated the typical drinking behavior of their peers as greater than their own drinking behavior (Baer & Carey, 1993). Moreover, the college students who consumed the most alcohol tended to be the ones who overestimated the amount of alcohol consumed by their peers (Agnostinelli, Brown, & Miller, 1995). The reasons people drink can be broken down into three broad categories; namely, social reasons, disinhibition reasons, and suppression reasons (Labouvie & Bates, 2002). Each category of reasons for drinking can affect how frequently and how much people drink (Maggs, 1997) and people's reasons for drinking may be affected by situational factors (Kairouz, Gliksman, Demers, & Adlaf, 2002). Both suppression and disinhibition reasons have been linked to increase in alcohol use, while suppression reasons also can lead to the use of alcohol as a reactive coping mechanism which is associated with increases in drinking problems (Labouvie & Bates, 2002). Social reasons may be the main reason for drinking in undergraduates (Kairouz et al., 2002), but these reasons do not appear to increase problems associated with drinking. However, no research has explored differences in reasons for drinking and age of alcohol initiation.

### *Age of Alcohol Initiation and Gender*

Research on age of alcohol initiation suggests that early alcohol initiating males drink more frequently and in larger quantities than early alcohol initiating females and later alcohol initiators. In addition, Caucasian males were almost twice as likely as Caucasian females to be

early alcohol initiators (Gruber et al., 1996). Male early initiators are more likely to have developed a tolerance for alcohol, to experience blackouts, to develop dependency, and to have received alcohol or drug abuse treatment than other males. The findings for early alcohol initiating females indicate a similar pattern of drinking behaviors in that they consumed more alcohol with greater frequency, became violent, missed school or work, damaged relationships, and combined drinking and driving more often than other females who began drinking at later ages (Gruber et al., 1996). Although these patterns were true in both males and females, males are more likely to be early initiators and, thus, experience these negative consequences. Further research found that both males and females and persons with and without a family history of alcoholism who started drinking by age 14 were at least three times more likely to have experienced diagnosable alcohol dependence, compared to those who waited until age 21 or older to start drinking (Grant, 1998).

### ***Age of Alcohol Initiation and Ethnicity***

National studies such as the Monitoring the Future Study (2001) and the MMWR CDC Surveillance Summary (2000), have reported lower prevalences of early alcohol initiation among African Americans and Hispanics than among Caucasian adolescents. In turn, Caucasian college students tend to drink the heaviest and are at the highest risk for problematic drinking. Wechsler, Dowdall, Davenport, and Castillo (1995) found African American college students to have the lowest rates of heavy drinking, with Hispanic American college students having rates in between Caucasian and African American college students. Kahler and colleagues (2003) suggested that before enrolling in college, Caucasian students may already have culturally biased attitudes that are more favorable to drinking in college, which may lead to their seeking out social activities that revolve more heavily around drinking. Overall, Caucasian college students showed a steep increase in drinking up to about age 19, which was followed by a gradual decrease (Jackson, Sher, Cooper, & Wood, 2002).

### ***Present Study***

College drinkers who experience the most negative alcohol-related consequences may also be those who began drinking at earlier ages.

With this in mind, the present study sought to determine college student drinking patterns in relation to their onset of alcohol initiation. We hypothesized that early alcohol initiators (those who initiate drinking prior to age 15) would be heavier drinkers and would have greater alcohol-related consequences in college than later onset drinkers. Further, we hypothesized that early alcohol initiators would initiate other drug use earlier than others. We also hypothesized that certain alcohol beliefs (e.g., reasons for drinking, beliefs about peer drinking) would differ as a function of age of initiation, with early alcohol initiators endorsing greater reasons for drinking and higher levels of normative peer drinking than later initiators (Baer & Carey, 1993; Agostinelli, Brown, & Miller, 1995). We further hypothesized that men would be more likely to be early initiators than women and, thus, more at risk for subsequent alcohol-related problems during collegiate years. Finally, the role of ethnicity in alcohol onset and in subsequent drinking and in alcohol-related issues was explored.

## METHOD

### *Participants*

College students ( $N = 243$ ; Female = 160, Males = 83) at two universities in the Western United States participated in this study. Subjects were recruited through their psychology classes and received course credit for participation. After giving consent for participation, each participant completed a confidential questionnaire designed specifically for this study to assess their opinions, attitudes, beliefs, and behavioral habits with respect to alcohol and other drugs. The participants completed the questionnaire individually in a lab setting and were given as much time as was necessary for completion of the measures. Eighty-eight percent ( $N = 214$ ) of the participants reported drinking alcohol at least once in the past year. Only these drinkers were included in subsequent analyses. The drinkers ranged in age from 17 to 24 and had an average age of 20.66 years ( $SD = 1.73$ ). Thirty-four percent ( $n = 73$ ) were males and 66% ( $n = 141$ ) females. Participants' ethnicity reflected the diversity of the campus populations with 26% ( $n = 56$ ) Caucasian, 40% ( $n = 86$ ) Asian, 24% ( $n = 50$ ) Hispanic, 2% ( $n = 4$ ) African American, and 8% ( $n = 18$ ) mixed. In addition, 20% of participants belonged to a fraternity or sorority.

## Measures

*Alcohol use.* Participants completed a quantity and frequency index for alcohol use within the previous month. They reported the number of days they drank and the average number of drinks they consumed per drinking occasion. The average number of drinks item contained five choices from “1” to “5 or more” drinks. They were informed that a “drink” is one shot of liquor (1.5 oz), a glass of wine (4-6 oz), or one beer (12 oz). Participants also reported the age at which they first drank more than a few sips of alcohol with peers.

*Behavioral effects of alcohol use.* Participants reported the frequency with which they experienced the following behavioral consequences related to alcohol use: (1) used alcohol longer than intended to; (2) spent a lot of time recovering from the effects of alcohol; (3) used alcohol to keep from feeling hung-over or sick; and (4) drank more alcohol but did not feel the same high. These items represent symptoms of potential alcohol abuse. They responded to these items on a 5-point Likert scale (1 = Never to 5 = Very Frequently). Higher scores indicate more risk-related behavioral effects from drinking and the items displayed an internal consistency of  $\alpha = .82$ .

*Reasons for drinking.* Participants responded to several items designed for this study measuring their reasons for drinking. These items included: (1) I drink to be liked by other students; (2) I drink alcohol to feel less shy and make friends; (3) I drink to get my mind off my problems; (4) I drink when I am alone; and (5) I drink to get drunk. They responded to each of these items on a 5-point Likert scale (1 = Never to 5 = Always). These items represent the social (1, 2), disinhibition (5), and tension reduction/coping (3, 4) factors identified by LaBouvie and Bates (2002) and displayed adequate internal consistency ( $\alpha = .80$ ).

*Beliefs about peer drinking.* Using a Likert scale (1 = Strongly Disagree and 5 = Strongly Agree), participants rated their beliefs and attitudes pertaining to alcohol use among their peers. These items included: (1) I believe most students at my school drink alcohol; (2) I believe it is okay to drink if you are under 21; and (3) I believe students at my school binge drink when they drink (defined as 5 or more drinks in one sitting for males and 4 or more drinks in one sitting for females). These items had internal consistency of  $\alpha = .84$ .

*Drug use.* After assessing alcohol variables, other drug use, including marijuana use, was assessed. Participants reported age at first use of tobacco, marijuana, and other drugs, as well as reported current

frequency of use in the past month (none, 1-2, 3-5, 6-9, 10-19, 20-39, or 40 or more times).

## RESULTS

*Age of initiation groups.* We first split the participants into groups based on the age when they first began drinking alcohol with peers. Each participant was placed into one of three groups. The early alcohol initiator group included participants who reported first drinking more than a few sips with peers before age 15. The middle alcohol initiator group included participants who reported first drinking more than a few sips with peers between ages 15 and 17. The late alcohol initiator group included participants who reported first drinking more than a few sips with peers after they turned 18 (generally post-high school). In this sample, 40% ( $n = 85$ ) were early initiators, 42% ( $n = 89$ ) were middle initiators, and 19% ( $n = 40$ ) were late initiators.

For the early initiator group, approximately 65% ( $n = 54$ ) were women, 42% ( $n = 36$ ) Caucasian, 23% ( $n = 19$ ) Asian, 23% ( $n = 19$ ) Hispanic, and 12% ( $n = 11$ ) African American or mixed. In addition, 20% ( $n = 17$ ) belonged to a fraternity or sorority. The middle initiator group consisted of approximately 67% ( $n = 60$ ) women, 21% ( $n = 19$ ) Caucasian, 48% ( $n = 43$ ) Asian, 23% ( $n = 20$ ) Hispanic, and 8% ( $n = 7$ ) African American or mixed. About 24% ( $n = 21$ ) of this group belonged to a fraternity or sorority. For the late initiator group, approximately 58% ( $n = 23$ ) were women, 7% ( $n = 3$ ) Caucasian, 58% ( $n = 23$ ) Asian, 23% ( $n = 9$ ) Hispanic, and 13% ( $n = 5$ ) African American or mixed. Finally, 13% ( $n = 5$ ) belonged to a fraternity or sorority. Compared to the overall amount of Caucasians in the sample, a disproportionate number (42% or  $n = 36$ ) of the early initiator group was Caucasian. Fully 67% of Caucasians began drinking before age 15.

*Data analyses.* Prior to analyses, variables were tested to determine distribution normality and all those used in subsequent analyses met assumptions of normality. Means comparisons were conducted using One-way ANOVAs among initiation groups. If the overall Anova  $F$  was significant, post hoc analyses were performed using a Bonferroni test in the case of equal variances and a Dunnett's T-3 test when equal variances were not assumed.

*Age of initiation, alcohol use and other drug use.* There were significant differences between initiation groups on both number of drinks per drinking occasion ( $F(2, 207) = 10.04, p < .05$ ) and number of drinking

days in the prior month ( $F(2, 209) = 7.45, p < .001$ ). Subsequent post hoc Dunnett's T-3 analyses revealed significant differences on all group comparisons for drinking days in the past month. Early initiators drank more frequently than middle initiators, who, in turn, drank more frequently than late initiators. Means, standard deviations, and  $p$ -values for all groups are contained in Table 1.

Early initiators consumed significantly more alcohol per occasion than either middle or late initiators as indicated by chi square analyses examining expected values. This was true even though an artificially bounded scale for average number of drinks, that had as its highest values "5 or more drinks," likely muted the full extent of the difference. Nonetheless, 63% (31 of 49) of the participants who reported averaging "5 or more drinks" in a typical drinking event were early initiators compared to only 32% (54 of 167) of those who drank on average less than five drinks ( $\chi^2 = 15.19, p < .001$ ). Early initiators were twice as more likely to drink five or more drinks per drinking occasion than they were to drink less than five drinks. In addition, 36% ( $n = 31$ ) of early initiators drank on average five or more drinks per occasion, significantly differing from only 13% ( $n = 12$ ) of middle initiators ( $\chi^2 = 12.35, p < .001$ ) and 15% ( $n = 6$ ) of late initiators ( $\chi^2 = 6.02, p < .001$ ) who drank five or more drinks per occasion. Thus, early initiators were nearly three times more likely than middle initiators and more than twice as likely as late initiators to average five or more drinks per drinking occasion.

TABLE 1. Age of Onset on Present Alcohol and Other Drug Use

Variable	Early Onset 11-14	Middle Onset 15-17	Late Onset 18-21
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Drinks per Drinking Occasion	3.38 (1.54)	2.62 (1.50)*	2.18 (1.59)*
Drinking Days Past Month	6.30 (6.78)	4.22 (4.67)**	2.46 (2.79)* <sup>A</sup>
Age First Used Drugs	15.79 (2.32) <i>n</i> = 62	17.59 (3.29)* <i>n</i> = 46	20.07 (1.71)* <i>n</i> = 13
Times Used Marijuana in Last 30 Days	.73 (1.39)	.42 (1.07)	.14 (.42)*
Times Used Drugs Other than Marijuana	.24 (.85)	.20 (.66)	.06 (.24)

\*Significant from Early Initiators at  $p < .001$ .

\*\*Significant from Early Initiators at  $p < .05$ .

<sup>A</sup>Significant from Middle Initiators at  $p < .05$ .

In addition, early initiators first used other drugs significantly earlier in life than middle and late alcohol initiators. Early initiators were also significantly more likely to have used marijuana in the month prior to the study than either middle ( $\chi^2 = 8.34$ ,  $p < .001$ ) or late initiators ( $\chi^2 = 18.53$ ,  $p < .001$ ).

*Age of initiation and behavioral effects.* There were significant differences between the initiation groups on the following items: spending a lot of time recovering from the effects of alcohol ( $F(2, 196) = 4.62$ ,  $p < .05$ ); drinking to keep from feeling hung-over or sick ( $F(2, 196) = 5.75$ ,  $p < .05$ ); and consuming more alcohol but not feeling the same high ( $F(2, 195) = 9.13$ ,  $p < .001$ ). For each of these items, the early initiator group reported more severe negative consequences than either the middle or late initiators. Means and standard deviations for each group, as well as group comparisons, are contained in Table 2.

*Age of initiation and reasons for drinking.* There was a significant difference between groups on drinking to get their mind off problems ( $F(2, 208) = 3.20$ ,  $p < .05$ ), drinking to have fun ( $F(2, 209) = 8.29$ ,

TABLE 2. Differences Between Initiator Group on Expectancies, Reasons for Drinking, and Behavioral Effects of Alcohol Use

Variable	Early (11-14)	Middle (15-17)	Late (18-21)
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Believe students binge drink when drinking	3.74 (1.08)	3.53 (1.00)	3.20 (1.09)**
Drink to get drunk	2.94 (1.27)	2.32 (1.22)*	2.15 (1.25)*
Drink to get mind off problems	2.41 (1.28)	2.05 (1.16)	1.88 (1.11)**
Drink to have fun	3.71 (1.28)	3.37 (1.32)	2.70 (1.29)*
Used more alcohol but did not feel the same high	1.61 (.79)	1.24 (.51)*	1.19 (.40)* <sup>A</sup>
Used alcohol to keep from feeling sick or hung over	1.23 (.53)	1.06 (.24)**	1.03 (.16)**
Used alcohol longer than intended	1.68 (.76)	1.46 (.76)	1.21 (.41)*
Spent time recovering from effects of alcohol	1.70 (.66)	1.49 (.53)**	1.37 (.68)**

\*Significant from Early Initiators at  $p < .001$ .

\*\*Significant from Early Initiators at  $p < .05$ .

<sup>A</sup>Significant from Middle Initiators at  $p < .001$ .

$p < .001$ ), and drinking to get drunk ( $F(2, 210) = 7.64, p < .001$ ). Early initiators drank to get their minds off problems significantly more than late initiators. In addition, early initiators used alcohol to have fun significantly more than middle initiators, who, in turn, used alcohol and/or drugs to have fun significantly more than late initiators. Finally, early initiators endorsed drinking to get drunk at significantly higher levels than either middle or late initiators (see Table 2).

*Age of initiation and beliefs about peer drinking.* Although there were no significant differences between initiator groups on beliefs about whether it is okay to drink if you are under age 21 and whether they thought their school has an alcohol abuse problem, significant differences emerged on beliefs that students at their school typically binge drank ( $F(2, 209) = 3.65, p < .05$ ). Early initiators believed that an average college student typically binge drinks (5/4 drinks in one sitting for males and females, respectively) more than middle or late initiators. Thus, early initiators have a different set of normative beliefs about their peers' drinking behavior than do the other two groups (see Table 2).

*The role of ethnicity.* Since a disproportionate number of Caucasians were early initiators, it seemed likely that Caucasians would drink more and have more negative behavioral consequences than other ethnicities. To determine this we grouped all non-Caucasians together and conducted ANOVAs comparing the two groups. Caucasians consumed significantly more drinks per occasion ( $F(2, 216) = 10.47, p < .001$ ) and reported more drinking days in the past month ( $F(2, 218) = 6.75, p < .001$ ) than students of other ethnicities. They also reported drinking to get drunk ( $F(2, 216) = 11.25, p < .001$ ) significantly more than the others. In addition, Caucasian students used drugs other than alcohol in the past month ( $F(2, 205) = 2.013, p < .05$ ) more often than non-Caucasian students.

In an effort to determine if the age of initiation effects previously reported were due to ethnicity, we performed one-way ANOVAs on the drinking and drug variables with initiator group as the independent factor on all non-Caucasians, excluding Caucasian participants. Results from the non-Caucasian sub-sample revealed similar patterns as in the overall sample with overall group differences between age of initiation among non-Caucasians on drinks per occasion ( $F(2, 156) = 5.19, p < .01$ ), drinking days ( $F(2, 157) = 5.82, p < .01$ ) and age of onset of other drug use ( $F(2, 78) = 6.35, p < .01$ ). Post hoc tests revealed that among non-Caucasians, early initiators drank more frequently, had more drinks per occasion, and began using drugs earlier than middle or late initiators.

## DISCUSSION

Early drinking onset is associated with subsequent greater alcohol consumption and alcohol-related problems in college students. In the present sample those students who began to drink more than a few sips of alcohol with peers before age 15 (early initiators) drank more days per month, binge drank more frequently, and were more likely to consume five or more drinks every time they drank during college than persons who began drinking later in their lives. Earlier initiators also reported higher levels of several negative behavioral effects of drinking, including spending time recovering from the effects of drinking, needing more and more alcohol to feel the same "high effect," and drinking to mitigate the effects of feeling sick or hung-over, which are all symptoms of potential alcohol dependence. Early initiators are more likely to fall victim to alcohol dependence (Grant & Dawson, 1997). Higher levels of drinking and the symptoms of growing tolerance and withdrawal are correlated with negative consequences in students' lives (Wechsler, Lee, Kuo, & Lee, 2000), which may include poor academic performance, physical assault, drunk driving, negative encounters with the law or university judicial officers, sexual assault, accidental death, and many others. These findings may help dispel the myth held by some students that those who encounter problems or engage in negative behaviors after drinking are the least experienced drinkers (Institute of Medicine, 1990). If, as research clearly suggests, higher levels of drinking are correlated to negative consequences, and early initiation of drinking is related to higher levels of drinking in college, it appears that early familiarity with drinking is a significant risk indicator.

The role of early alcohol initiation as a risk indicator is further highlighted by findings on illicit drug involvement. Not surprisingly, early alcohol initiators began using other drugs at younger ages than either late or middle initiators. With respect to lifetime prevalence, 73% (62 of 85) of the early initiation group had used recreational illicit drugs, compared to only 51% (46 of 89) of the middle initiation group and 36% (13 of 40) of the late initiation group. Thus, early alcohol initiators are more likely to use illicit recreational drugs and to begin using them at younger ages than the other groups. Early initiators also were significantly more likely to have used marijuana in the month prior to the study than both middle and late initiators.

Age of initiation differentiated the participants on reasons for drinking as well, including "drinking to have fun," "drinking to keep my mind off problems," and "drinking to get drunk." Self-reported reasons

for drinking are similar to alcohol expectancies, but are considered more proximal than expectancies to actual drinking along the continuum from initial cue to actual drinking (Cronin, 1997). Labouvie and Bates (2002) found social (i.e., to have fun), disinhibition (i.e., to get drunk), and suppression (i.e., to keep mind off problems) as the three principal factors among reasons for drinking given by college students. In the present sample, early initiators endorsed stronger reasons on all three items than the other groups. Particularly disturbing is the "drink to get drunk" item. Since early initiators more strongly endorsed this item, it is likely that they more likely do drink to get drunk, putting themselves more at risk for the negative consequences associated with overdrinking. These reasons are important since they point out increased risk potential of early initiators as well as a potential locus for intervention. Targeting the attractiveness or validity of motives for drinking among early initiators may decrease the strength of these motives and, thus, decrease actual consumption and reduce risk.

Early initiators are at risk as well because they tend to have more extreme normative beliefs in comparison to the other initiation groups. They are significantly more likely than either middle or late initiators to believe that students in their university drink five or more drinks each time they drink. These norms can lead to overdrinking. Researchers have consistently found that heavier college drinkers tend to overestimate drinking norms for their peers (Agnostinelli et al., 1995; Baer & Carey, 1993; Perkins & Berkowitz, 1986). The early initiators both estimate higher alcohol consumption among their peers and consume more alcohol than middle or late initiators. While the direction of the relationship between overestimated norms and overdrinking is not determined, it is clear that a relationship exists and is particularly strong in those who began drinking at earlier ages. Interventions such as increasing awareness of social norms, which are popular on many college campuses, might increase effectiveness if targeted directly at early initiators; those who are more likely to have extreme norms.

Unlike the findings of Gruber et al. (1996), which indicated that males were nearly twice as likely as females to be early initiators, there were no significant gender differences between the initiator groups. Therefore, the hypothesis that more men than women are early initiators is not supported and it appears that in this sample women are developing drinking patterns similar to their male counterparts. These results are tempered by the relatively small sample size and the over-representation of women in the sample. Nonetheless, the present results are consistent with Ham and Hope (2003) who found that college women are

approaching male college students' level of alcohol use and alcohol-related problems as gender drinking norms change with other evolving gender norms.

A particular advantage of this sample is its ethnic diversity. While accurately depicting the diversity of universities involved, it also allowed for close inspection of relationships between ethnicity and the alcohol variables. A disproportionate percentage of Caucasians were in the early initiation group as compared to the middle or late initiation groups. Caucasians also tended to drink more days and consume more drinks per drinking occasion than other ethnic groups. Caucasians also endorsed stronger beliefs and reasons for drinking associated with increased alcohol-related risk. Thus, Caucasians tend to begin drinking at earlier ages and then, when in college, drink more and endorse more risk-related beliefs and attitudes than other ethnicities. Nonetheless, non-Caucasians exhibited a similar pattern of increased risk and drinking behavior among early initiators as did the entire sample, albeit at a lower level of magnitude. Therefore, the relations reported are not simply the result of Caucasian students. It appears that early alcohol initiation increases risk-related drinking and results in more positive attitudes and beliefs toward drinking among adolescents regardless of ethnicity, with Caucasians showing the highest overall level of risk.

This study has several limitations. First, the participants completed a retrospective self-report questionnaire. Responses to items that ask about past drinking behavior may be prone to memory error and may not be as accurate as more prospective measures. Studies in which participants record their behaviors and attitudes prospectively over time would add greatly to this field, particularly if the study begins before onset of drinking. Second, the present study utilized individual items rather than previously validated multi-item scales. While the individual items utilized in the present study appear to have good face validity as well as adequate reliability, future studies attempting to explore similar relationships should use more standardized scales that have well-documented statistical properties. A third limitation is that this is a college student sample made up of students in introductory psychology courses, which potentially reduces the generalizability of the findings to larger populations of college students. Furthermore, the quality of the sample and its representativeness is unknown. The current study is essentially a pilot study; thus, all conclusions are preliminary and need replication.

Nonetheless, these findings provide further evidence of the connection between age of alcohol initiation and subsequent problem drinking and problem-drinking-linked beliefs and indicators. With this in mind,

research and intervention strategies might attempt to delay age of drinking onset in early adolescents. Adolescent alcohol expectancies could prove a useful target for alcohol prevention programs (Killen et al., 1996). More positive expectancies toward drinking and its effects may lead to alcohol use at younger ages. Expectancy challenges have proved helpful in changing drinking behavior. Further, parental influence could play a role in delaying drinking onset and, thus, changing college students' drinking tendencies. Parent-based interventions conducted by Turrisi, Jaccard, Taki, Dunnam, and Grimes (2001) focused on educating parents about different teen expectancies and social experiences with regard to drinking. This intervention reduced college-bound adolescent drinking and tendencies toward overdrinking, increased negative perceptions toward drinking activities, reduced perceived peer and parental approval of drinking, and decreased alcohol-related problems. Wood, Read, Mitchell, and Brand (2004) observed that higher levels of perceived parental permissiveness were associated with stronger relations between peer influences and alcohol use and problems. Given these data, it appears that interventions aimed at parents explicitly promoting parental involvement and communication with children around alcohol initiation might be another strategy, researchers and health educators could employ to promote delaying alcohol initiation among young persons.

Among college students, early alcohol initiation (beginning to drink with peers before the age of 15) is related to heavier drinking, problems related to drinking, potential symptoms of alcohol dependence, more extreme normative beliefs, more strongly held reasons for drinking, and greater contact with other licit and illicit drugs. In contrast, it appears that later onset of drinking is related to more positive outcomes with respect to alcohol use and related issues during college. These findings appear to be robust across both gender and ethnic groups. As a result, intervention projects targeting young adolescents and their alcohol-related beliefs, as well as their parents, in order to delay their onset of alcohol use continue to appear useful.

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