



# Adolescents' Frequency of Alcohol Use and Problems from Alcohol Abuse: Integrating Dating Partners with Parent and Peer Influences

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Received: 29 April 2021 / Accepted: 22 July 2021 / Published online: 19 November 2021

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## Abstract

Despite the centrality of dating relationships for teens, it is unclear whether the influence of romantic partners' alcohol use on adolescents' under-age drinking is distinct from the influence of peers and parents. To address this gap, this study used longitudinal data from a population-based sample of 825 adolescents (49% male, 51% female), ages 12 to 19. Adolescents completed a survey using laptops for privacy, and a parent completed a survey separately. Ordinary least squares and logistic regression models assessed alcohol use frequency and alcohol problems and included dating partners' drinking, adolescents' prior drinking, peers' drinking, parents' substance use, parental monitoring, and sociodemographic background characteristics. Alcohol use frequency and alcohol problems were influenced by dating partners' alcohol use and dating partners' influence was stronger on older adolescents and male adolescents. The study results are useful for public health messaging and prevention efforts by demonstrating the influence of parents, peers, and dating partners on teens' alcohol use.

**Keywords** Alcohol · Dating · Peers · Parents

## Introduction

Parents and peers are important sources of influence for adolescents. Especially with regard to the frequency of adolescents' alcohol use and the odds of alcohol-related problems, both play critical roles (Beier, 2018). During adolescence, however, romantic and dating relationships increasingly become important sources of influence (Davila et al., 2016). A gap in the substance use literature is that researchers know relatively little about the influence of romantic partners' alcohol use and adolescents' under-age drinking, net of the influence of parents and peers. Researchers have tended not to examine romantic partners separately from peers because they conceptualize them to be part of the larger friendship group. That is, friends and dating partners often are viewed as interchangeable same-

age peers who are both part of mixed-gender friendship groups (e.g., Kreager et al., 2016). The purpose of this study is to examine whether dating partners uniquely influence adolescents' alcohol use controlling for parental and peer influences, prior alcohol use, and sociodemographic background characteristics known to be associated with teens' alcohol use. A focus on romantic partners is important for public health messaging that may need to target the health-harming or health protective role of romantic partners in addition to parental and peer influences. Data for this current study are from the longitudinal population-based Toledo Adolescent Relationships Study (TARS), which included 825 male and female youth, ages 12–19, who reported on current/recent dating relationships.

## Adolescents' Dating and Alcohol Consumption

Adolescence, which refers to the age group 12–19, typically is the stage in the life course associated with individuals' initial forays into dating. Based on population-based data (National Longitudinal Study of Adolescent Health–Add Health), estimates indicate that in the United States, about 36% of youth age 13, 53% of youth age 15, and 70% of youth age 17 have had a dating or romantic relationship, and the median duration of dating relationships is 5 months for

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teens under age 14, 8 months for mid-teens, and 22 months for teens age 16 and older (Carver et al., 2003). On average, teens start dating about age 15, although about 30% of youth have not dated during adolescence (Longmore et al., 2009). Dating patterns differ by gender with adolescent boys being more likely to start dating later and to date more sporadically, and adolescent girls being more likely to be in longer-term relationships, more frequent relationships, and more intense relationships (Boisvert & Poulin, 2016).

Further, findings from epidemiological studies confirm what many parents already know: alcohol use often begins during adolescence (CDC, 2018). In 2019, nearly 25% of 14–15 year old youth have reported having at least 1 drink in the past year; moreover, youth ages 12–20 account for 4.1% of all alcohol consumed in the United States (NIAAA, 2020). The median age of initial alcohol use is 14; and although the legal age is 21, about 78% of teens ages 13–18 have ever consumed alcohol (Swendsen et al., 2012), and the teen age range most associated with alcohol use is 16–19 (Hutchinson et al., 2020).

Most teens who drink are binge drinkers (57%) meaning that adolescent boys are consuming five or more drinks, and adolescent girls are consuming four or more drinks in a two-hour period (CDC, 2018). Importantly, a sizable proportion of all teens' drinking patterns reflect problem drinking (Kuntsche et al., 2017). For example, about 15% of teens have reported that they drank eight or more alcohol drinks most recently (Esser et al., 2017). Regarding drinking patterns, researchers have described distinct consumption patterns among high school students including non-drinkers (44%), light drinkers (41%), regular drinkers (11%), and heavy drinkers (2.9%) with male students and older students more likely to be in the higher alcohol use categories (Gohari et al., 2020). Moreover, these patterns are largely stable by mid-adolescence, and both family and peers affect heavy alcohol use. Summarizing, alcohol use typically starts during adolescence, is common, and the normative pattern is to binge drink.

Adolescence is also the stage in the life course in which young people are developing health habits independent of their parents (Aalsma et al., 2012). As such, these habits may be concurrent with or distinct from parents' health habits including patterns of alcohol use. Poor health habits include frequent and problem alcohol use. Adolescents' frequent and problematic alcohol use is associated with a range of detrimental outcomes, including vehicular accidents and poorer well-being ranging from depressive symptoms to suicidal ideation and suicide attempts (Ewing et al., 2015). Especially for adolescent girls, their own or their partners' intoxication is a risk factor for unwanted or regrettable sexual activity (Haas et al., 2017) as well as teen dating violence (Edwards et al., 2020).

Importantly, a significant proportion of adults with alcohol problems reported initially drinking heavily during early adolescence (Richmond-Rakerd et al., 2017). That is, consumption

patterns that develop during adolescence often persist into adulthood with high frequency patterns leading to life-long alcohol-related problems including diminished work capacity and early mortality (Marshall, 2014). From current studies, however, it is unclear whether the influence of romantic partners on adolescents' alcohol consumption differs from that of parents and peers. It is critical to assess the role that dating partners may play in adolescents' newly developing health habits. Identifying whether dating partners act as a possible risk or, conversely, a protective factor net of the influence of parents' and peers' influences may aid in understanding, preventing, and/or attenuating serious long-term alcohol problems.

## Parents', Peers' and Adolescents' Alcohol Consumption

### Parents' influence

Scholarship based on theories of social control (e.g., Wright & Beaver, 2005) emphasize the importance of parental support and control in promoting or discouraging adolescents' risk behaviors and attitudes. These include pro-drinking attitudes and behaviors. Social control refers to explicit attempts to monitor, encourage, or pressure a person to adhere to particular practices; yet parental efforts can backfire if control attempts are perceived as overly intrusive (Thoits, 2011). For example, adolescents' perceptions of parents as intrusive in early adolescence was associated with stronger peer orientation, which was then associated with problem behaviors including alcohol use in late adolescence (Goldstein et al., 2005). In addition to parents' attempts to control and inhibit adolescents' risky behaviors. Parents attempt to express a sense of caring and support, which leads adolescents to feel that they matter to parents resulting in greater compliance with parents' views, attitudes, and behaviors (Li & Meier, 2017). In other words, adolescents are amenable to hearing parents' verbal and non-verbal messages and control attempts when parents are perceived as supportive.

One way that parents attempt to control adolescents' involvement in risky activities is by monitoring their behavior. Monitoring refers to paying attention to, and tracking, adolescents' whereabouts and activities (Longmore et al., 2013). Comprehensive reviews of the adolescent risk behavior literature have emphasized the critical importance of monitoring adolescents' activities, more so than providing support (Eaton & Urban, 2016). Key here is restricting adolescents' access to alcohol (Donaldson et al., 2016). Studies have found that higher levels of parental monitoring are associated with lower quantity and lower frequency of alcohol consumption among adolescents (O'Brien et al., 2016).

In addition to social control theory, social learning theory also has contributed to understanding how parents' attitudes

and behaviors influence adolescents' behaviors (Bandura, 1986). Individuals learn vicariously by observing behavioral consequences of others' actions and anticipating rewards and costs if they act similarly. In addition to monitoring adolescents' behavior, a primary mechanism linking parents' and adolescents' behaviors is adolescents observing parental behaviors (Withers et al., 2016). Researchers have shown that parents' modeling of moderate alcohol consumption, and discussions of potential problems that may arise from under-age drinking are associated with adolescents' lower frequency of alcohol use (e.g., Rogers et al., 2018). Conversely, parents' heavy alcohol and substance use is associated with adolescents' higher frequency of alcohol consumption. In a meta-analysis of 131 longitudinal studies of parental risk and protective factors, parents' drinking was a risk factor and parental monitoring was a protective factor for adolescents' drinking (Yap et al., 2017). Similarly, adolescents who reported substance use among adults who mattered to them including parents, were more likely to drink frequently, and to binge drink (Ewing et al., 2015). Also reflecting the notion of modeling, drinking with parents may have negative consequences for adolescents. In a study of American and Australian youths, a higher prevalence of drinking with parents was associated with higher frequency of adolescents' problem drinking (McMorris et al., 2011). Further, permissive parental rules regarding underage drinking were associated with drinking at earlier ages and a pattern of heavy drinking (Janssen et al., 2014).

Thus, there is robust evidence of an association between parents' and adolescents' drinking behavior, and the influence of parents primarily has been understood in terms of parental monitoring, which restricts adolescents' behavior, and adolescents' modeling of parental attitudes and behavior regarding alcohol use. Although parenting practices revolving around expressions of control and parents' modeling behavior are far from a comprehensive roster of ways in which parents influence adolescents, these are critical dimensions mentioned or implied in a vast range of conceptual and empirical papers focused on parents' influences on adolescents' risk behaviors (Buehler, 2020).

### Peer influence

Social learning theory also can be used to understand peer influence on adolescents' behavior. Adolescents likely are influenced by or model their behavior after peers who are like them. Homophily, or similarity, is the result of both selection and modeling. Adolescents tend to select their friends based on attitudinal and behavioral similarity. That is, teens (a) choose their friends based on relatable characteristics, and (b) model friends' attitudes and behaviors through frequent and intense interaction, which leads to the likelihood of attitudinal and behavioral similarity (Laursen, 2017). Researchers have found high levels of homophily regarding adolescents' and their

perceptions of their friendship group's alcohol consumption (e.g., Boman & Mowen, 2018). Similarly, the friendship group's perceived positive attitude about drinking influences adolescents' own alcohol consumption (Leung et al., 2014; Teunissen et al., 2016). Additionally, perceptions that best friends drink is associated with alcohol consumption (Schuler et al., 2019). In particular, close friends' binge drinking, the most common consumption pattern, is associated with adolescents' own binge drinking (Kuntsche et al., 2017). Further, peer deviant behavior, in general, is related to teens' alcohol use, as is parents' alcohol consumption (Cambron et al., 2018).

Moreover, there is empirical evidence of both peer selection and modeling effects (e.g., Leung et al., 2014). For example, adolescents' initial substance use is associated with an increase in the number of friends who are substance users over time reflecting a selection effect; and the initial number of friends who use substances is associated with increases in substance use reflecting a modeling effect (Simons-Morton & Chen, 2006). Importantly, although young people have tended to overestimate heavy drinking among their peers, nevertheless, such perceptions are associated with more frequent heavy drinking (Cox et al., 2019).

A limitation of some studies, however, is not examining gender differences (e.g., Schuler et al., 2019) or only focusing on male (e.g., Kim et al., 2013; Zhang et al., 2012) or female respondents (e.g., Young & d'Arcy, 2005; Young et al., 2005) so comparisons between perceptions of peers' drinking on male and female adolescents' alcohol use cannot be easily made. Yet, research has demonstrated gender differences with respect to peer influence and timing of initial alcohol use. Time spent with peers who drank prospectively predicted more frequent alcohol use among adolescent girls and boys, with peers' influence on alcohol use occurring earlier for girls than boys (i.e., early adolescence) (Boyd et al., 2018). Moreover, positive attitudes toward drinking influenced friendship selection for adolescent girls and boys, although the influence on friendship selection occurred earlier for boys than girls (i.e., mid-adolescence). These findings suggest that limiting involvement with friends who drink as well as discouraging positive attitudes toward underage drinking may be important parental interventions. Overall, then, researchers have concluded that friends influence adolescents' alcohol use, adolescents' alcohol use influences the type of friends selected, and adolescents change their alcohol consumption to be consistent with friends.

### Romantic and Dating Relationships and Alcohol Consumption

Although research has focused on young adult daters' motivations for drinking alcohol and whether dating, as an activity,

influences drinking patterns (e.g., Aalsma et al., 2012; Cornelius et al., 2016), fewer studies have examined whether adolescents' dating partners influence drinking patterns. Thus, the focus has been on whether dating, as a socializing activity, is associated with delinquent behavior including under-age drinking with much of this research demonstrating that teen daters compared to non-daters drink more often. For example, adolescents in dating relationships reported higher levels of alcohol use than those who were not in dating relationships, and that the greater the number of former dating partners, the higher the level of alcohol use (Rouvès & Poulin, 2016). Moreover, serious versus casual dating relationships had a much stronger association with drinking for male and female adolescents with no statistical differences by gender (Beckmeyer, 2015). Further, the significant effect of "relationship seriousness" was not found at age 20 suggesting that adolescence may be a stage in the life course in which youth's alcohol consumption is influenced especially by dating and romantic partners.

These findings are consistent with the more extensive findings from the young adult relationships and the married couples' literatures, which in general has suggested that romantic partners/spouses are sources of influence on heavy drinking with women and men each influencing their partners' heavy episodic drinking (Bartel et al., 2017). Even among high risk samples including individuals with criminal justice involvement, romantic partnerships were associated with greater alcohol use over time (Angulski et al., 2018); yet this sample only focused on males. A recent meta-analysis of 17 studies ( $n = 10,553$  couples) using longitudinal data found support for the partner influence hypothesis such that one partner's alcohol use influences the other partner's use over time with women compared to men exerting a statistically stronger influence (Muyingo et al., 2020). Taken together, these findings suggested that romantic relationships are important sources for understanding alcohol consumption, and that they can serve risk or protective roles. Moreover, women's alcohol use may have a stronger effect on their partners' use.

Further, like friendships, adolescents may select to date, and to model their behavior after romantic and dating partners who are relatively like themselves (Suleiman & Deardoef, 2015), and this likely holds with respect to attitudes toward drinking and levels of alcohol consumption (Osgood et al., 2013). For example, adolescents who drink may tend to select dating partners who also drink (Van der Zwaluw et al., 2009). In addition, similarity on other characteristics, such as socioeconomic background and physical proximity are important factors in the development of dating relationships (McDonald et al., 2013) and are important sources of influence on adolescents' alcohol use.

## Comparing the Influence of Friends and Dating Partners on Alcohol Use

Some studies have compared the influence of friends versus dating partners on adolescents' alcohol use. For example, dating partners may introduce adolescents to new sets of friends. Analysis of couple-level longitudinal data (449 couples) from the Add Health demonstrated support for a "liaison" hypothesis in which dating partners act as network bridges by introducing adolescents to new friend networks that, in turn, encourage changes in adolescents' alcohol consumption (Kreager & Haynie, 2011). There is longitudinal evidence that male ( $n = 574$ ) and female ( $n = 662$ ) daters were less like their friends with respect to alcohol abuse than adolescents without romantic partners (DeLay et al., 2016). Over time, the influence of friends' alcohol use declined after adolescents became involved with romantic partners to the point at which their alcohol use resembled that of their dating partners and not their friends. This suggests that over time, that is, as adolescents get older, their alcohol consumption is more like that of their dating partners. As such, it is important to assess whether influences on adolescents' alcohol use and problems associated with alcohol are conditional on age.

### Gender and the influence of dating partners

Because gender influences adolescents' friendship networks (Haynie et al., 2014), dating experiences (Meier et al., 2016; Olson & Crosnoe, 2017), and levels of drinking (CDC, 2018; NIAAA, 2020), whether the association between dating partners' alcohol consumption and adolescents' consumption differs for male and female adolescents is also examined in the current study. Historically, adolescent boys, compared to girls, were more likely to drink and to binge drink; yet there is some evidence that in recent years, as adolescent boys' frequency of use may be staying the same or declining, adolescent girls may be drinking more frequently and more frequently binge drinking (Chen et al., 2017; NIAAA, 2020).

Gender findings regarding the influence of dating partners, however, are mixed. Research based on the TARS data have found that adolescent boys, compared to adolescent girls, report greater levels of influence from their dating partners (Giordano et al., 2006), justifying the initial expectation that dating partners' alcohol use will have a stronger effect for adolescent boys. Regarding alcohol use, more specifically, some prior literature, albeit based on college samples, has found that dating partners have a larger influence on women's drinking patterns (Young & d'Arcy, 2005). Additionally, in an analysis of gender differences in alcohol consumption, adolescent boys' drinking was influenced more so by peers, and adolescent girls' drinking was influenced more so by romantic partners (Kuhn, 2015). Yet, other studies did not find gender differences in the influence of romantic partners on

adolescents' alcohol use (e.g., Cornelius et al., 2016), and some studies only examined men (e.g., Angulski et al., 2018; Kim et al., 2013). The current study allows an assessment of whether the influence of romantic partners is stronger for adolescent girls and whether adolescent boys' drinking is influenced more so by peers controlling for parental influence, prior alcohol consumption and the other covariates.

## Current Study

A critical gap in the literature is whether the influence of romantic partners' alcohol use on adolescents' under-age drinking is distinct from the influence of peers and parents. In the current investigation, a preliminary analysis examines whether there are differences between daters and non-daters with respect to alcohol consumption. Next, the study examines whether dating partners' frequency of alcohol consumption contributes to adolescents' own use, once the more heavily investigated impact of parents and friends has been considered. These associations also account for adolescents' prior alcohol use and demographic background. Consistent with the notion of homophily, it is hypothesized that dating partners' alcohol use will be associated with adolescents' frequency of alcohol use and higher odds of experiencing alcohol-related problems.

The study examines age and gender as moderating influences on the association between dating partners' alcohol use and adolescents' frequency of alcohol consumption and experiencing alcohol-related problems. It is expected that associations between dating partners' alcohol use and adolescents' drinking will be stronger for older compared to younger adolescents, since romantic relationships are described generally as becoming more important, longer in duration, and more intimate with age. Yet, based on prior research on alcohol use, it is unclear whether the influence of dating partners will differ for male and female adolescents. Nevertheless, building on research suggesting that adolescent boys perceive their partners to be more influential, it is expected that adolescent girls will have a stronger influence on their dating partners. In addition to prior alcohol use, all multivariate models include known correlates of adolescents' alcohol consumption e.g., family structure, race/ethnicity, parental education, parental monitoring, adolescents' academic grades, and mother's education—a proxy for socioeconomic background (Donaldson et al., 2016).

## Methods

### Data and Sample

The investigation uses longitudinal survey data from the Toledo Adolescent Relationships Study ( $n = 1316$ ). The

sample was drawn from the 2000 enrollment records for all youth in the 7th, 9th, and 11th grades residing in Lucas County, Ohio, which included 62 schools across 7 school districts. The sampling design, created by NORC, and made available through Ohio's Freedom of Information Act, included oversamples of Black and Hispanic adolescents, and class attendance was not required to be in the sample, allowing for greater representation. Follow-up interviews were conducted in 2002/03, 2004/05, 2007, and 2011. Most interviews took place in adolescents' homes using preloaded laptops to administer the interviews. Separately, in the first interview, parents (generally mothers) completed a questionnaire that included information about their parenting practices and lifestyle factors including monitoring of adolescents' activities and their own substance use. Although a regional sample, the TARS is demographically similar to the national population, in terms of race/ethnicity and gender compositions, and parents' employment status, union status, and education and educational, per the 2011 American Community Survey (ACS). As this analysis is focused on adolescents, we draw on data from the first and second interviews, as the average age in the second interview is 15.

The second adolescent interview was conducted approximately one year after the first ( $n = 1177$ , 89% of the first interview). At the second interview, 971 (82%) adolescents reported that they had either a current or most recent dating partner, and 231 (18%) had not yet dated. Apart from the preliminary analysis that compared alcohol use among daters and non-daters, the analyses focus on adolescents who had dated and participated in both interviews ( $n = 878$ ). Adolescents who reported on same-sex relationships ( $n = 19$ ) or who reported a biracial identity or a race/ethnicity other than Black, White, or Hispanic ( $n = 15$ ) were excluded due to small cell sizes. Adolescents with missing information on their alcohol consumption ( $n = 2$ ), or who were missing on perceptions of their partners' alcohol consumption ( $n = 22$ ), or whose parents did not report their alcohol consumption ( $n = 12$ ) were excluded from analyses. The final analytic sample was  $n = 825$ . The sample descriptive statistics are shown in Table 1 and reviewed in the Results.

## Dependent Variables

### Frequency of alcohol use in the past year

This measure was asked at interviews one and two—approximately one year apart—and was assessed with two questions: (1) “In the past 12 months, how often have you drunk alcohol,” and (2) “In the past 12 months, how often have you been drunk in a public place?” Response categories included (0) never, (1) once or twice a year, (2) once every 2–3 months, (3) once a month, (4) once every 2–3 weeks, (5) once a week, (6) 2–3 times a week, (6) 2–3 times a week, and (7) once a day, and (8) more than once a

**Table 1** Sample description for recent/currently dating respondents ( $n = 825$ )

Variables	Mean/%	SD	Range
<b>Dependent Variables</b>			
Adolescent drinking - current	2.77	4	0–8
Adolescent alcohol problems - current	0.33	0.47	0–1
<b>Independent Variables</b>			
Adolescent prior drinking	2.18	1.67	0–8
Adolescent prior alcohol problems	0.10	0.30	0–1
Dating partner alcohol use	0.96	5.12	0–8
Friend alcohol use	1.38	5.77	0–8
Parent substance use	0.95	3.12	0–6.25
<b>Controls</b>			
Age ( <i>M</i> )	15.37	5.65	12–19
<b>Gender</b>			
Male	0.49		
Female	0.51		
<b>Race/Ethnicity</b>			
White	0.70		
Black	0.23		
Hispanic	0.07		
<b>Respondent letter grades</b>			
<b>Family structure</b>			
Two biological	0.49	6.76	1–9
Single	0.24		
Step	0.15		
Other	0.12		
<b>Parental Education</b>			
<12 Years	0.13		
12 years	0.32		
Some college	0.33		
College +	0.22		
Parental monitoring	3.41	0.38	1–4

Data from Toledo Adolescent Relationships Study (TARS)

day. The mean frequency of alcohol use is calculated (interview 1  $\alpha = 0.69$ , interview 2  $\alpha = 0.72$ ).

### Alcohol-related problems

This measure was asked at interviews one and two, and is an alcohol-specific adaptation of a self-report delinquency scale, itself a modified variant of Elliott and Ageton's (1980) National Youth Survey delinquency scale. Respondents were asked the following: "In the past 12 months, how often have you experienced these things because of drinking": (1) "not felt so good"; (2) "unable to do job"; (3) "hit a family member"; (4) "gotten into a fight"; (5) "had problems with friends"; and (6) "had problems with romantic partners?" Responses ranged from 0 (never) to 7 (almost daily).

The summed scores were recoded to indicate either the (1) presence or (0) absence of alcohol-related problems.

## Independent Variables

### Frequency of dating partner's alcohol use

This measure was assessed with two questions asked at the second interview that assessed perceived frequency of dating partner's alcohol use: "To your knowledge, during the last 12 months, how often has (dating partner's name) drunk alcohol," and "How often has (dating partner's name) been drunk in a public place?" Items were scored similar to respondent's alcohol use ( $\alpha = 0.80$ ).

### Frequency of friends' alcohol use

Two questions with the same response format were used to assess adolescent's alcohol consumption and perceptions of dating partner's consumption: "Sometimes teens do things that could get them into trouble. The next questions ask how often your friends have done one of the following in the last 12 months: 'How often have your friends drunk alcohol,' and 'Been drunk in a public place?'" Items are scored in a manner similar to the adolescent's alcohol use ( $\alpha = 0.79$ ).

*Parent's substance use.* Four items were from the parent questionnaire, asked at the first interview. Parents answered a survey separately from adolescents. Parents were asked about participation in the following behaviors: (1) "used alcohol to get drunk"; (2) "gone out partying with a spouse or partner"; (3) "gone out to party with friends"; and (4) "used drugs to get high." Responses ranged from 0 (never) to 7 (almost daily). Responses were averaged to create an index of parental alcohol and drug use ( $\alpha = 0.65$ ).

## Sociodemographic Variables

### Age

This item is calculated from the adolescent's self-reported birth date, and is coded as a continuous variable.

### Gender

This item is coded as female or male, with male as the reference group in analyses.

### Race/ethnicity

This measure is coded as three mutually exclusive categories: White, Black, and Hispanic.

### Adolescents' letter grades

This is a measure of academic achievement, which is assessed with the question: "What grades did you get in school this year?" Responses ranged from 1 (mostly F's) to 9 (mostly A's).

### Family structure

This item is the adolescent's response to the question: "During the past 12 months, who were you living with most of the time?" Responses included single parents, biological parents, stepparent, and other household types including living with relatives and foster homes. Three dichotomous variables were created with two biological parents as the contrast category.

### Mother's education

This item is reported by the parent using three dichotomous variables with 12 years of education as the contrast category.

### Parental monitoring

This is a measure of adolescent's perceptions of parenting, which included the following prompt and items: "tell me how often your parents let you make your own decisions about (1) the time you must be home on weekend nights; (2) the people you hang around with, what you wear; (3) your social life; (4) who you can date, and (6) how often you can date" (Longmore et al., 2009). Response categories were 1 (never), 2 (hardly ever), 3 (sometimes), 4 (often), and 5 (very often). Responses were averaged to create an index of parental monitoring ( $\alpha = 0.83$ ).

### Analysis Plan

Analyses rely on the first and second interviews of the TARS, which were approximately one year apart. The analyses were conducted in three stages: (1) comparison of alcohol consumption among daters and non-daters; (2) comparison of alcohol use among dating partners, peers, and parents on daters alcohol use; and (3) comparison of parents, peers, and romantic partners net of known correlates of alcohol use that may be confounded with the key socializing influences. Alcohol consumption among daters and non-daters are compared to initially demonstrate that daters may consume more alcohol. Table 1 included the means, standard deviations, ranges, and frequencies for all variables included in the multivariate analyses for the total sample (Pearson correlation coefficients for all variables are shown in the appendix, Table 4). The study then examined whether dating partners' alcohol use is associated

significantly with adolescents' own use (frequency and drunkenness) net of parents' and peers' alcohol consumption using OLS regression models (Table 2), followed by the analysis of problem alcohol use relying on logistic regression models (Table 3). In the multivariate models (Table 2 and Table 3), the zero-order associations between adolescents' frequency and problem use, respectively, and the dependent variables are shown. Model 1 included measures of friends' and romantic partners' alcohol use (frequency of alcohol use and drunkenness within the past 12 months) and an index of parents' substance use within the past 12 months, controlling for the influence of adolescents' drinking at the first interview. This modeling strategy was chosen to permit an assessment of the relative impact of parents', peers', and romantic partners' influence controlling for adolescents' earlier alcohol consumption. The full models (Model 2) are estimated that include the following demographic characteristics: parents' education, family structure and parental monitoring, variables that may confound the influence of the key independent variables on alcohol consumption. These analyses allow determination of whether dating partners' alcohol use contributed to an understanding of adolescents' alcohol use once these known correlates have been considered. Additionally, models are estimated in which dating partners' alcohol use is introduced last in the sequence and a nested F test is calculated to determine whether knowledge of dating partners' alcohol use added significantly to the explained variation in adolescents' alcohol use.

## Results

### Distribution of Variables

The first step in the analyses included examining the self-reported alcohol use of non-daters at the first interview compared to the daters. The analyses found a strong negative zero-order association ( $r = -0.19$ ,  $p < 0.001$ ), with non-daters reporting significantly lower alcohol frequency (0.15) than current/recent daters (0.76) (available from authors) suggesting that a focus on the effect of dating partner's alcohol use among daters is warranted.

Table 1 included the means, standard deviations, ranges, and frequencies for the total sample. The average level of adolescents' alcohol use was relatively low ( $M = 2.77$ ,  $SD = 4.00$ ). Approximately half the sample (51.1%) reported that they had drunk alcohol in the past 12 months, but most of the sample (76.2%) reported no instances of public drunkenness during the same period (available from authors). Of the adolescents who reported ever using alcohol or an incident of public drunkenness within the past 12 months ( $n = 409$ ), 34.7% reported one or more alcohol-related problems.

**Table 2** Multiple regression models of adolescents' frequency of alcohol use (*n* = 825)

Parameter	Zero-order		Model 1		Model 2	
	b	se	b	se	b	se
Partner drinking	0.559	0.03***	0.247	0.03***	0.266	0.03***
Peer drinking	0.583	0.03***	0.361	0.03***	0.332	0.03***
Parent substance use	0.140	0.08	0.044	0.06	0.032	0.06
Prior drinking (Wave 1)	0.715	0.03***	0.335	0.04***	0.323	0.04***
Age	0.456	0.04***			0.053	0.04
Female (male)	-0.072	0.14			-0.408	0.11***
Race/Ethnicity (white)						
Black	-1.179	0.17			-0.123	0.14
Hispanic	-0.400	0.22			-0.279	0.17
Grades	0.063	0.03			0.043	0.03
Family structure (two bio.)						
Single parent	-0.409	0.16*			-0.181	0.13
Step parent	-0.385	0.21*			-0.13	0.16
Other	-0.872	0.31**			-0.178	0.25
Mother's education (12 years)						
<12 years	-0.503	0.24*			-0.15	0.18
Some college	0.094	0.17			0.029	0.13
College complete	0.344	0.19			-0.008	0.15
Parental monitoring	-1.228	0.18***			0.013	0.15
Intercept			0.086	0.16	-0.906	0.97

Contrast categories are in parentheses. Data from Toledo Adolescent Relationships Study (TARS)

\**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001

**Table 3** Logistic regression predicting the probability of reporting an alcohol problem (*n* = 825)

Parameter	zero-order		Model 1		Model 2	
	b	OR	b	OR	b	OR
Partner drinking	0.436***	1.55	0.265***	1.30	0.283***	1.33
Peer drinking	0.492***	1.64	0.367***	1.44	0.374***	1.45
Parent use	0.225**	1.25	0.239*	1.27	0.242	1.27
Age	0.327***	1.39			-0.044	0.96
Female	-0.058	0.94			-0.259	0.77
Race (white)		1.00				
Black	-1.365***	0.26			-0.988*	0.37
Hispanic	-0.157	0.86			-0.774	0.46
Grades	-0.010	0.99			-0.015	0.99
Family structure (two bio.)		1.00				
Single parent	-0.502*	0.61			-0.190	0.83
Step	-0.212	0.81			0.354	1.43
Other	-0.333	0.72			-0.277	0.76
Mother's ed (12 years)		1.00				
<12 years	-0.259	0.77			0.244	1.28
Some college	-0.043	0.96			-0.082	0.92
College complete	0.092	1.10			-0.100	0.91
Parental monitoring	-0.810***	0.44			-0.217	0.81
Prior drinking	2.235	9.35	1.695***	5.45	1.675***	5.34
Intercept			-4.544***	0.418	-2.6637	

Contrast categories are in parentheses. Data from Toledo Adolescent Relationships Study (TARS)

\**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001



About 65.5% of adolescents perceived that their peers drank alcohol, and 51% perceived that their dating or romantic partners drank alcohol. Nearly a third, that is, 32.15% of parents reported some alcohol or drug use in the year prior to their interview. Regarding demographic characteristics, the average age of the sample was 15.37 years, and slightly over 50% was female. About 23% identified as Black, 7% as Hispanic and 70% as White. Just under half the sample (48.97%) reported living with both biological parents, while nearly a quarter of the sample (23.55%) reported living with one parent. The majority, 55%, of respondents' mothers reported some college education or higher. Adolescents reported high levels of parental monitoring compared to similar TARS subsamples (e.g., Johnson et al., 2011; Warner et al., 2011), with over half of our sample reporting above "sometimes" in the mean frequency scale. About 35% of the sample reported grades as "mixed A's and B's" or above, 43% reported Mostly C's to Mostly B's, while the rest of the sample (22%) reported grades that were a mix of C's and D's or lower on average.

### Frequency of Alcohol Use

The association of dating partners' alcohol use and other covariates on adolescents' self-reports of current levels of alcohol use controlling for prior alcohol use are shown in Table 2. These analyses are restricted to current/recent daters from the first interview. Dating partners' and peers' alcohol use is associated significantly with adolescents' own level of alcohol use (Model 1). Teens who reported that their dating partners frequently drink alcohol are themselves more likely to report higher levels of alcohol use. Both dating partners' alcohol and friends' alcohol use remained significant when the demographic and other covariates (e.g., age, gender, race/ethnicity, family structure, parental education, parental monitoring) were included in the model (Model 2). The control variables operated in the expected directions. Older adolescents reported higher levels of alcohol use, and Black, compared to White and Hispanic, adolescents reported lower levels of alcohol use. While bivariate analyses (appendix) indicated that academic grades, family structure, parental education, and parental monitoring were related to adolescents' alcohol use, these variables were not significant in the multivariate model. Finally, based on nested *F* tests, dating partner alcohol use significantly contributed to the fit of the model for alcohol use frequency ( $F = 9.58, p < 0.01$ ) (1520).

### Alcohol-related Problems

The next series of models (Table 3) presented logistic regression coefficients predicting the odds that adolescents' reports of having experienced one or more problems

involving the use of alcohol. Bivariate regression results (available from authors) suggested that adolescents who reported higher levels of dating partners' alcohol use, on average, are more likely to have experienced alcohol-related problems. The first model in Table 3, which included friends' alcohol use and dating partners' alcohol use, showed that net of prior drinking behavior, the association between dating partners' use and alcohol-related problems was statistically significant. Friends' and parents' alcohol use also were positively related to problematic alcohol use. Model 2 added the control variables and partner alcohol use was still significantly related to problematic alcohol use ( $p < 0.001, \chi^2 = 348.65, 15$ ). Friends' alcohol use also was associated with problem alcohol use. Parental substance use, however, was no longer significantly associated with problem alcohol use ( $p < 0.06$ ).

Consistent with results of the OLS model assessing the frequency of alcohol use, older adolescents had significantly higher odds of alcohol-related problems while Black adolescents reported the lowest odds of experiencing problems created by alcohol use. Male, compared to female, adolescents were no more likely to report alcohol-related problems. Letter grades were related negatively to alcohol use. Family factors were not related to problem alcohol use in model 2.

### Effects of Age and Gender, and Partners' Alcohol Use

Interaction terms of age and partner alcohol use were added to Model 2 for both sets of outcomes (available from authors). For both dependent variables, frequency of alcohol use and alcohol-related problems, results indicated a significant age by partners' alcohol effect. The effect of partners' alcohol use was greater for older adolescents. This result was consistent with prior literature suggesting that older adolescents' romantic relationships are more intimate and potentially more influential.

Interaction terms of gender and partners' alcohol use were added to model 2 for both outcomes (available from authors). The effect of dating partners' alcohol use on frequency of use was significant for both male and female adolescents and the magnitude of the association indicated a significantly greater effect of partner alcohol use for male adolescents. For alcohol-related problems, results indicated a significant effect of partners' alcohol use for both male and female adolescents but did not indicate that this effect differed for male and female adolescents. Overall, an interesting gender dynamic was suggested: female adolescents in the sample reported significantly greater mean levels of alcohol use by their partner (1.28) than did male adolescents in the sample (0.71); yet multivariate analyses suggested that female adolescents influenced the alcohol use frequency of their dating partners more strongly than did male adolescents.

## Discussion

A gap in the literature on adolescents' alcohol use is whether the influence of romantic partners' alcohol use is distinct from the well-known influence of peers and parents. The results showed that adolescents' alcohol use frequency and alcohol problems were influenced by their perceptions of dating partners' alcohol use, and dating partners' influence was stronger on older adolescents and male adolescents. Exploring three sources of influence aligns with the notion of homophily—individuals seek friends and partners like themselves—and in this case regarding drinking behavior. Consistent with the broader developmental literature on the heightened role of friends' influence among adolescents, the findings demonstrated the central importance of both friends and dating partners. Yet, dating partners and friends have unique and positive influences on alcohol use during this important developmental period. Although drinking may occur outside the context of the dating relationship, the current study is guided by theoretical insights emphasizing homophily and social interaction.

Results of the interaction analysis between age and partner suggested that the use of alcohol by a dating partner may be an especially salient influence on drinking behavior of older teens. The finding that older teens are more strongly influenced by their dating partners is consistent with Esser and colleagues (2017) findings. Early influence by a dating partner may set the stage for later high use patterns among dating individuals, with or without the same partner. Unlike adult drinkers, teenage drinkers have only recently begun drinking and are doing so illegally, which suggests they may be drinking for very different reasons as compared to adults. Generalizing research findings conducted among adult samples may be inappropriate for drawing conclusions regarding the behavior of adolescents.

The results of the interaction analyses moderating partner alcohol use by gender point to a unique context and structure of romantic relationships. The influence of a dating partner on drinking is salient for both male and female adolescents, but the effect on frequency of use is stronger for male adolescents. The data indicated that the role of the partners' alcohol use is stronger for male than female adolescents regarding the frequency of alcohol use, but not regarding alcohol-related problems.

In other ways, however, these findings are consistent with the more extensive findings from the young adult relationships and the married couples' literatures, which in general have suggested that romantic partners/spouses are sources of influence on drinking patterns for young adults with women and men each influencing their partners' heavy drinking (Bartel et al., 2017). Angulski and colleagues (2018), studying the influence of romantic partners' alcohol use during emerging adulthood, found significant longitudinal effects within high-risk samples. The findings are

also consistent with research on adolescent dating relationships demonstrating that adolescent boys perceive their romantic partners as quite influential.

There are important implications of these findings regarding the influence of adolescents' romantic partners. Alcohol consumption may reduce inhibitions, and therefore may increase the likelihood that adolescents engage in risk behaviors, with a host of negative potential outcomes including drunk driving and risky sexual behaviors, which are associated with a host of deleterious possible outcomes (Edwards et al., 2020; Ewing et al., 2015; Haas et al., 2017). Prevention programs targeting concurrent alcohol use and risk behaviors among youth will benefit from an increased understanding of the romantic context of alcohol use. For some youth, a romantic partner's drinking may set the stage for the hazardous use of alcohol and other drugs in adult relationships. The analyses presented here were generated with the goal of being usable research for public engagement with the study of youth behavior. Recognizing the important joint influences of partners, family, and friends on the drinking behavior of adolescents and young adults can, and should, be communicated to the target population. Reciprocally, this analysis is heavily informed by the authors' experiences and engagement with adolescents and young adults and with youth advocates—a necessary element in producing research that is relevant to others and society collectively. Finally, dissemination of the findings and implications of this study and those that inform it is a necessary and often overlooked step in public engagement with research (Morgan, 2019). In the present case, part of the significance of this research is the need to communicate—to the public—the understanding that young people are influenced by the most important people in their lives in the meanings they attach to drinking, and the behaviors that follow.

The study is limited by the nature of self-reports. However, most studies of alcohol use are self-reports. Although the alcohol use measure did tap frequency and severity of respondent, and perceptions of dating partner's alcohol use, and perceptions of friend's alcohol use, an item measuring quantity of alcohol per episode was not available within this sample of adolescents. Every effort was made to collect this sensitive data in a confidential manner from both adolescent and parent respondents; however, parents overly concerned with promoting a socially acceptable image may have been likely to underreport their own alcohol/drug use. Additionally, respondents were drawn from an urban Midwestern city and the surrounding area, and despite the demographic similarities to the United States population based on U.S. Census data, generalizations should be made with caution. Although the study oversampled Hispanic and Black youth, these findings may not generalize to populations vulnerable to high levels of alcohol-related problems

(e.g., treatment populations) or residing outside the Midwest. Although a significant proportion of lesbian, gay, and bisexual adults have reported early alcohol initiation (Schuler et al., 2019), a third limitation of the current work is that it only addressed relationships between male and female adolescents and did not address relationships between other groups. A fourth limitation of the current study is that some participants may have been unaffected by the level of alcohol use of their dating partner. Without direct measures of multiple factors influencing drinking behavior, detecting the extent of a specific dating partner's alcohol consumption on respondent's self-reported drinking behavior is not possible. Thus, it is possible that reports of dating partners' drinking are subject to distortion. However, it is important to note that perceptions that others are heavy drinkers is associated with adolescents' heavy use (Cox et al., 2019). Additionally, the initial analyses indicated that daters compared with non-daters reported higher frequency of drinking. The challenge of future work will be to identify the dynamics influencing the context of alcohol use among adolescent dating partners.

## Conclusion

This work addresses a significant uncertainty in the alcohol-use homophily literature: in proximity to parents and peers, where do dating partners fit in as critical influences on adolescent alcohol use? Overall, perceptions of dating partners' alcohol use significantly influenced drinking behavior and problems associated with alcohol use above and beyond parents' use and perceptions of peer alcohol use. In both direct and moderated associations, the effect of homophilic influences on alcohol use is contextualized by gender and age. Partner drinking was significant for both male and female adolescents, but was moderated by gender such that male adolescents' frequency of use was more heavily influenced by partners drinking, though the same was not true for alcohol-related problems. Initial associations by age are noteworthy: older adolescents reported significantly higher frequencies of both use and problem use, alongside higher partner and peer drinking. These joint associations (as well as the lack of significance when controlling for partner and peer use) may be due to older adolescents (up to age 19 in this sample) being connected to peers and/or partners of legal drinking age in the US. The significant interaction effect of dating partners' use with age suggests an additional effect consistent with the view that romantic partners take on a greater weight in the transition to young adulthood. Thus, research focused on how early alcohol use across romantic contexts shapes the character and

stability of adult intimate relationships is also likely to inform prevention work. However, the findings have documented that adolescents' perceptions of romantic partners affect alcohol use and the problem behaviors associated with it. Future research should expand the traditional focus on perceptions of peers and friends to include more attention to the ways in which romantic liaisons potentially influence a range of consequential health related outcomes.

**Authors' Contributions** M.A.L. conceived of the study and its design, coordinated the study, drafted the manuscript, and serves as a primary investigator of the TARS study from which the data analyzed was produced; E.E.S. participated in study design, data interpretation, and coordination, helped draft the manuscript, and performed statistical analysis and measurement; W.D.M. conceived of the study, participated in its design and coordination, drafted the manuscript, and serves as a primary investigator of the TARS study; P.C.G. conceived of the study, its design and coordination, helped draft the manuscript, and serves as a primary investigator for the TARS study; W.M.C. participated in study design and data interpretation, and performed statistical analysis; H.L.T. participated in study design and data interpretation. All authors read and approved the final manuscript.

**Funding** This research received support from The Eunice Kennedy Shriver National Institute of Child Health and Human Development (HD036223), and the Center for Family and Demographic Research, Bowling Green State University, which has core funding from The Eunice Kennedy Shriver National Institute of Child Health and Human Development (R24HD050959-01). The opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the official views of the National Institutes of Health.

**Data Sharing and Declaration** The datasets generated and/or analyzed during the current study are available in the ICPSR repository [<https://www.icpsr.umich.edu/web/DSDR/series/252>].

## Compliance with Ethical Standards

**Conflict of Interest** The authors declare no competing interests.

**Ethical Approval** This project involved human subjects and received approval from Bowling Green State University Institutional Review Board (IRB).

**Informed Consent** Parent and adolescent respondents each provided written informed consent.

**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

## Appendix

Table 4

**Table 4** Pearson correlation coefficients

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Respondent drinking	1.000																
2. Prior drinking	0.357***	1.000															
3. Partner drinking	0.408***	0.234***	1.000														
4. Peer drinking	0.422***	0.255***	0.513***	1.000													
5. Parent substance use	0.091**	0.075*	0.029	0.049	1.000												
6. Age	0.211***	0.174***	0.328***	0.376***	0.062	1.000											
7. Gender	0.012	-0.040	0.244***	0.002	-0.059	0.015	1.000										
8. Black	-0.169***	-0.088**	-0.204***	-0.223***	-0.012	0.036	-0.024	1.000									
9. Hispanic	0.010	0.075*	-0.031	0.059	0.073*	0.035	-0.031	-0.183***	1.000								
10. Grades	-0.008	-0.140***	0.076	-0.012	-0.023	0.074*	0.176***	-0.218***	-0.135***	1.000							
11. Single parent	-0.076*	0.049	0.015	-0.045	0.020	-0.021	0.084*	0.273***	0.041	-0.181***	1.000						
12. Step family	-0.005	-0.010	-0.073	-0.023	-0.013	-0.049	-0.020	0.024	0.059	-0.077**	-0.260***	1.000					
13. Other family form	-0.014	0.011	-0.031	-0.009	-0.008	0.019	0.011	0.116**	0.023	-0.107**	-0.150***	-0.095**	1.000				
14. Less than high school	-0.033	0.013	-0.091*	-0.033	0.053	0.014	-0.008	0.099**	0.220***	-0.179***	0.094**	0.023	0.116**	1.000			
15. Some college	-0.006	0.013	-0.027	0.022	-0.008	0.040	-0.003	0.092**	-0.054	-0.003	0.046	0.049	-0.024	-0.256***	1.000		
16. College complete	0.026	-0.009	0.074	0.020	-0.072*	0.012	-0.007	-0.167***	-0.140***	0.262***	-0.101**	-0.063	-0.118**	-0.204***	-0.389***	1.000	
17. Parental monitoring	-0.131***	-0.137***	-0.149***	-0.225***	-0.115***	-0.408***	0.099**	0.062	-0.035	0.034	-0.006	0.038	-0.106**	-0.011	-0.013	0.048	1.000

Data from Toledo Adolescent Relationships Study (TARS)

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

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