

## Does the Alcohol Make Them Do It? Dating Violence Perpetration and Drinking Among Youth

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Strong evidence links alcohol use to partner violence perpetration among adults, but the relation between youth alcohol use and dating violence perpetration (DVP) is not as well studied. The authors used meta-analytic procedures to evaluate current knowledge on the association between alcohol use and DVP among youth. The authors reviewed 28 studies published in 1985–2010; most (82%) were cross-sectional. Alcohol use was measured in 3 main ways: 1) frequency or quantity of use, 2) frequency of heavy episodic drinking, or 3) problem use. Collectively, results support the conclusion that higher levels of alcohol use are positively associated with youth DVP. With fixed-effects models, the combined odds ratios for DVP for frequency/quantity, heavy episodic drinking, and problem use were 1.23 (95% confidence interval (CI): 1.16, 1.31), 1.47 (95% CI: 1.17, 1.85), and 2.33 (95% CI: 1.94, 2.80), respectively. This association persisted even after accounting for heterogeneity and publication bias. No studies were designed to assess the immediate temporal association between drinking and DVP. Future research should assess whether there are acute or pharmacologic effects of alcohol use on youth DVP. Furthermore, few studies have been hypothesis driven, controlled for potential confounding, or examined potential effect measure modification. Studies designed to investigate the youth alcohol–DVP link specifically, and whether results vary by individuals' gender, developmental stage, or culture, are needed.

alcoholic intoxication; alcoholism; domestic violence; spouse abuse; violence

Abbreviations: CI, confidence interval; DVP, dating violence perpetration; HED, heavy episodic drinking.

### INTRODUCTION

Youth dating violence is both prevalent and consequential. Estimates from population-based surveys suggest that, each year, 10% of high school–attending youth in the United States are physically hurt on purpose by a dating partner and that 9.3% of US college students perpetrate physical violence against a dating partner (1, 2). Approximately 9%–32% of those who experience dating violence report being injured. Common injuries include head injuries, broken bones, scratches, sprains, bruises, genital injuries, and bite wounds (3–6). In the most severe cases, victims are killed by their partners (7, 8).

Etiologic research on youth dating violence is at an early stage, and few risk and protective factors have been established firmly. By contrast, the epidemiology of adult partner violence perpetration is better understood. As a result, many researchers have begun to investigate whether and to what extent risk factors for adult partner violence perpetration also explain youth dating violence. One important risk factor that has been

consistently linked to adult partner violence perpetration is alcohol use. Given that batterer intervention programs have limited effectiveness (9) but alcohol use can be effectively influenced through laws, policies, pricing, and educational and treatment programs (10), information about the nature of the alcohol–dating violence link could help inform strategies to reduce dating violence perpetration (DVP).

### Evidence that alcohol consumption influences partner violence perpetration among adults

Strong epidemiologic evidence now links alcohol consumption to partner violence perpetration among both adult men and women, although the majority of research on this topic has been conducted with samples of men (11–13). Empirical investigation of the relation between adult alcohol use and partner violence became increasingly common after a nationally representative study in 1987 of more than 5,100 US families reported that physical abuse of wives was 2–3 times more

likely by men who drank heavily than by those who abstained or consumed more moderate amounts (14). To date, there have been at least 3 reviews of the adult alcohol-partner violence literature (11, 13, 15). They report that case-control studies have consistently found that heavy drinking is associated with adult partner violence perpetration (11, 13) and that adults who drink heavily have twice the risk of partner violence perpetration as non- or low-usage drinkers (15).

Evidence also exists that among men who are violent toward partners, alcohol consumption exacerbates their violence; a comparison study found that when men had been drinking, their violent incidents were more likely to involve severe violence, and more acts of violence, than when no drinking had occurred (16). Moreover, alcohol treatment for partner-violent adults with substance use disorders appears to have a substantial impact on the recurrence of violence; a recent review of 7 studies found that the relative risk of partner violence perpetration is, on average, 2–3 times lower subsequent to alcohol treatment (17).

In addition to the evidence that adults' general drinking patterns are associated with partner violence perpetration, research further suggests that alcohol intoxication may have what is called an "acute" (i.e., immediate) effect on men's partner violence perpetration. Fals-Stewart et al. (18) used a daily assessment method with a sample of alcohol-using men and determined that severe partner violence perpetration was more likely to occur on days of heavy drinking, and within a 4-hour window subsequent to that drinking, than on non-drinking days. (Note: there have been questions about the integrity of some of Fals-Stewart's data; refer to *State of New York v. Fals-Stewart* ([http://www.ag.ny.gov/media\\_center/2010/feb/feb16a\\_10.html](http://www.ag.ny.gov/media_center/2010/feb/feb16a_10.html))). In summary, there is now sufficient evidence for alcohol-violence research experts to conclude that heavy drinking is a contributing cause of partner violence for adults (11).

### **Rationale for investigating the influence of alcohol consumption on youth DVP**

In this review, the term "youth" is used to refer to individuals aged 11–21 years, which reflects the developmental periods of early, middle, and late adolescence (19). From a prevention science perspective, it is particularly important to understand the relation between alcohol use and DVP among youth. First, development of more effective partner violence prevention strategies for youth may reduce partner violence that otherwise would occur in adulthood (20). Information about whether and how alcohol influences youth DVP can inform emerging prevention efforts. Second, if it were known that alcohol was causally related to youth DVP, parents and school administrators responsible for adolescents' safety might focus more attention and resources on the issue. In summary, given the burden of youth dating violence, the urgent need to develop effective prevention and intervention strategies based on risk factor evidence, and calls from the US Centers for Disease Control and Prevention for research that explores how partner violence is related to other health-risk behaviors (20), our purpose was to conduct a meta-analysis of research on whether and how alcohol use is related to youth DVP.

### **Theoretical explanations for a relation between alcohol use and partner violence perpetration**

Several possible explanations are plausible for why and how alcohol may affect partner violence perpetration in either adults or youth. These theoretical explanations include a) the proximal-effects model (also called the acute-effects model), b) the chronic-effects model, c) indirect-effects models, d) the common-cause model (also called the spurious-effects model), and e) moderator models (13, 21, 22).

The proximal-effects model is perhaps the predominant theoretical explanation for the alcohol-violence link, and it posits that the acute effects of alcohol intoxication play a causal role in increasing risk of violence perpetration. Specifically, alcohol intoxication can impair information-processing capacity, lead a person to overreact to perceived provocation, and decrease the saliency of inhibitory cues, thereby increasing risk of violence during the immediate time period when alcohol is exerting a pharmacologic effect (23).

The chronic-effects model suggests that individuals who chronically use or abuse alcohol are more likely to engage in violent behavior "irrespective of alcohol consumption immediately prior to a particular instance of violence" (15, p. 248). This model posits that long-term patterns of heavy alcohol use can lead to impaired neuropsychological functioning, enhanced psychopathological disorders, sleep deprivation, and nutritional deficiencies, which, in turn, increase risk of aggression (24, 25). Both the acute- and chronic-effects models suggest that alcohol intoxication has a pharmacologic effect that increases risk of aggression.

By contrast, the indirect-effects models posit that the causal relation between alcohol use and partner violence is not due to the psychopharmacologic effects of intoxication but rather is mediated by other variables such as relationship quality. For example, elevated alcohol use by one or both romantic partners may lead to relationship dissatisfaction and, in turn, to increased risk of partner aggression (26–29). It is also possible that partner violence aggression may lead to subsequent alcohol use (i.e., "reverse causation") (30) or that partner violence and alcohol use mutually reinforce one another. For example, involvement in dating aggression may lead to subsequent alcohol use as a way to cope with the negative social and emotional consequences of being in an abusive relationship (30), and the alcohol use may then lead to additional subsequent DVP.

The common-cause model suggests that alcohol use and DVP are linked because they share causal determinants. For example, several risk factors have been found to predict both alcohol use and DVP among adolescents and young adults, including antisocial behavior (31, 32), emotional distress (33, 34), and aspects of the family environment such as poor parenting practices (35) and family conflict (36). The common-cause model proposes that the association between alcohol and DVP is attributable to one or more of these shared factors.

Finally, moderator models recognize that relations between alcohol use and DVP likely vary considerably as a function of both individual (e.g., temperament) and contextual or situational (e.g., setting, relationship type) characteristics (13, 21, 37–39). These models generally posit that alcohol will tend to have a more pronounced effect on individuals who have

aggressive propensities (e.g., those with high levels of hostility or trait anger) and/or in contexts or situations that facilitate or encourage aggressive behavior (e.g., contexts where norms are permissive regarding the use of aggression).

### Developing a hypothesis about the youth alcohol–dating violence link

Given that syntheses of the research on adult alcohol use and DVP have concluded that there is a likely causal relation, it would be reasonable to hypothesize that the relation is the same for youth. However, it is not a foregone conclusion that the youth–DVP relation will be precisely the same as the adult–partner violence relation. There are reasons to think that the strength or nature of the link may differ for youth.

It has been established that alcohol affects adolescents and adults differently; for example, adolescents are more sensitive to the neurotoxicity of alcohol and less likely to experience its sedative, motor impairment, and hangover effects (40). In addition, youth relationships are typically unlike the marital, cohabiting, or committed adult partnerships in which the alcohol–partner violence correlation has been assessed previously. For example, few dating youth share bank accounts, share a household, share parenting and other family responsibilities, and see each other daily. As a result, the risk of DVP as a result of alcohol consumption may be different among youth because generally they have less in-person exposure time and relationships of shorter duration.

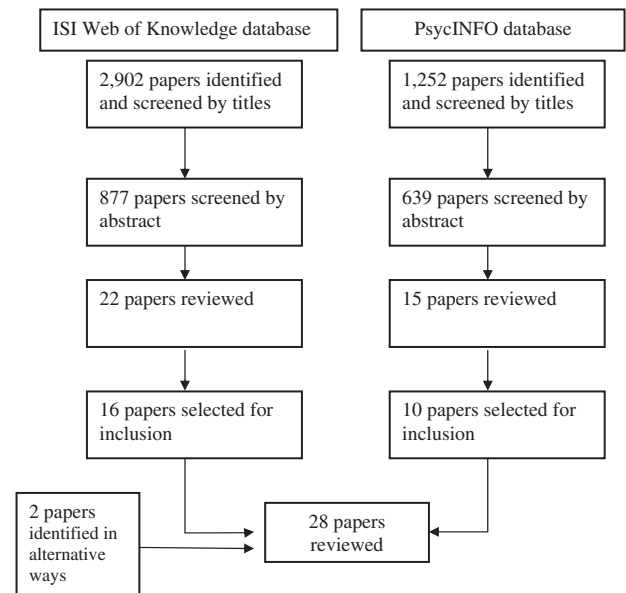
Moreover, one of the primary ways in which alcohol is suspected to influence aggressive behavior is via disinhibition, which Giancola et al. explain “can be described as a lack of cognitive and/or behavioral restraint” (41, p. 265). Given that, in general, adolescents have less cognitive control than adults do (42) and that alcohol appears to influence aggression by operating on cognitive control, it would follow that adolescents may be particularly susceptible to alcohol-related disinhibited aggression. Finally, in the United States, alcohol use is illegal for those younger than age 21 years. Thus, teenage youth who consume alcohol may be at greater risk of other delinquent or antisocial behaviors because of their propensity for risky behavior in general, which may not be true for adult drinkers.

In summary, on the basis of the strong evidence that alcohol use increases adults’ risk of partner violence perpetration, and speculation that youth DVP could be highly sensitive to alcohol use, the hypothesis for this review was that there would be a positive association between youth alcohol use and DVP across the literature. A secondary hypothesis was that, in analyses stratified by gender, the positive association would be present for both males and females.

## METHODS

### Search strategy

We reviewed the literature for all studies that had quantitatively examined alcohol use by youth in relation to physical DVP, where youth was defined as ages 11–21 years, and where alcohol use was assessed as a singular variable (i.e., not combined with drug or tobacco use). To be included, articles had to



**Figure 1.** Flowchart of the process of selecting studies for data extraction.

present an effect measure for the relation between alcohol use and DVP and had to distinguish between dating violence perpetrators and victims rather than group them together. Consistent with our inclusion criteria, studies that analyzed sexual violence against nondating partners were excluded.

Citations were searched by using the ISI Web of Knowledge database (which includes citations from Medline, BIOSIS, and other databases) and the PsycINFO database for the period between January 1, 1985, and December 31, 2010. The keyword combination “alcohol” and “dating abuse” was used, as well as the combinations of each of the following keywords with “alcohol”: “dating violence,” “dating aggression,” “partner violence,” “partner abuse,” “date fighting,” and “courtship violence.” “Substance use” was also substituted for “alcohol” in the keyword combinations. To identify additional potential articles for inclusion, the reference sections of obtained articles were searched. This process yielded one article (43). One recent, electronically published manuscript by one of this review’s coauthors (L. R.) was also included (44). In total, 28 articles were included in this review (Figure 1).

Articles were then obtained and reviewed. Studies that used samples that exceeded our age range of 11–21 years were included if the mean age of respondents was 21 years or less at the time that DVP was measured. After deliberation, 2 studies that did not present an age range or mean for the sample, but mentioned that all participants were college undergraduates, were included (45, 46).

### Analytic strategy

To assess patterns in study results by study design, operationalization of alcohol use, and inclusion of potential confounders, the following information was entered into

**Table 1.** Findings From Longitudinal Studies of the Relations Between Alcohol Use and Adolescent Dating Violence Perpetration ( $N = 28$ )

First Author, Year (Reference No.)	Data	Sample	Age	Alcohol	DVP	Covariates	Crude Effect	Adjusted Effect	Key Findings
<i>Longitudinal Studies</i>									
Foshee, 2001 (65)	High school sample (Safe Dates trial), 1994	$N = 1,013$ ; North Carolina	Range: n/a; students in 8th and 9th grades	Frequency in the past month; assessed at wave 1	Physical violence in lifetime; assessed at wave 2 (1 year later)	Demographics, individual-level personality factors, weapon carrying, gender stereotyping, peer dating violence, family structure and sanctions	Cross-sectional M: OR = 1.27 ( $P < 0.001$ ) F: OR = 1.26 ( $P < 0.001$ ) Longitudinal M: OR = 1.08 (NS) F: OR = 1.20 ( $P < 0.05$ )	Cross-sectional M: OR = 1.31 ( $P < 0.01$ ) F: OR = 0.99 (NS) Longitudinal M: (not presented, NS) F: OR = 1.19 ( $P < 0.05$ )	Cross-sectional: alcohol use was associated with DVP for M and F.  Longitudinal: baseline F alcohol use was associated with DVP onset at wave 2, but M alcohol use was not.
Foshee, 2010 (64)	High school sample, 2003–2004	$N = 1,666$ ; North Carolina	Range: n/a; students in 8th–10th grades	Frequency of use in lifetime; assessed at wave 1	Physical violence frequency in lifetime; assessed at wave 2 (the next semester)	Individual-level emotions, other substance use, school activities and grades, peer violence, family conflict, parental factors, peer violence, school environment	Frequency of use: OR = 1.07 (95% CI: 1.00, 1.13)	Frequency of use: OR = 0.97 (95% CI: 0.89, 1.05)	Lifetime frequency of alcohol use at wave 1 was associated with DVP onset at wave 2 (bivariate); the association was not significant in multivariate analysis. The association did not vary by race or sex.
Gidycz, 2007 (67)	University-based longitudinal survey <sup>a</sup>	$N = 425$ ; men, midwestern university	Range: age 18–19 years	Current quantity and problem use; assessed at baseline	Violence in the past 3 months; assessed 3 months postbaseline	Fraternity and athletic participation, sexual history, violence victimization and violence history	Daily use: $r = 0.02$ (NS) Problem drinking: $r = 0.01$ (NS)	Daily use: OR = 1.16 (NS) Problem drinking: OR = 0.87 (NS)	M alcohol use was not associated with DVP 3 months later.
McNaughton Reyes, 2011 (44)	High school-based cohort sequential survey, 2004–2006	$N = 2,311$ ; rural US counties	Range: n/a; students in 8th–12th grades	Baseline frequency of HED in the past 3 months and within each grade	Physical violence in the past 3 months	Demographics, family conflict, emotional distress, social bonding, peer violence	N/a	N/a	HED in 8th grade was associated with higher levels of DVP through 10th grade; effects faded over time such that, by 12th grade, early HED was no longer predictive of DVP. Effects did not vary by sex but were moderated by age.

Stappenbeck, 2010 (77)	University-based longitudinal study, 2000	N = 2,247; University of Texas, Austin	Range: age 17–19 years	Frequency of heavy drinking (HED and frequency of drunkenness, combined score) in the past 3 months; assessed every 6 months for 2 years	Partner violence in the prior 3 months (combined with victimization); assessed every 6 months for 2 years	None	N/a		The relation between alcohol use and DVP over time differed for M and F; alcohol was associated with concurrent DVP for M in their freshmen year only; drinking did not predict future DVP and DVP did not predict future heavy drinking for either M or F.
<i>Cross-sectional Studies</i>									
Barnes, 1991 (54)	College-based survey <sup>a</sup>	N = 202 single male university students with ≥3 dates in the past 3 years; Canada	Range: age 17–26 years; median: age 19 years	Quantity in the past month	Physical violence in lifetime	Individual-level psychological factors, father's violence, protective parenting	Drinks per month  Physical violence: $r = 0.16$ ( $P < 0.01$ )	Drinks per month  Physical violence: $\beta = 0.16$ ( $P < 0.01$ )	Drinks per month were associated with DVP; the effect was modified (intensified) by high level of father violence, overprotective parenting, neuroticism, extraversion, and psychoticism.
Champion, 2008 (53)	Community-based youth random sample, 2004–2006	N = 13,422; 70 communities in 5 US states	Range: age 14–20 years	HED in the past 2 weeks, drunkenness in the past month	Started physical fight with a date in lifetime	Demographics, alcohol use variables and other risk behaviors	N/a	Drunk in the past month OR = 1.59 (95% CI: 1.09, 2.32) HED OR = 1.32 (95% CI: 0.91, 1.91)	HED in the past 2 weeks was not associated with DVP; however, past-month drunkenness was associated with DVP.
Champion, 2008 (52)	High school-based random sample <sup>a</sup>	N = 2,090; North Carolina	Range: n/a; students in 9th–12th grades	Frequency in the past month; HED in the past month	Physical fight with a date in the past year	Demographics, other substance use, peer violence, risk behaviors, neighborhood organization	Past-month alcohol use PR = 1.77 ( $P < 0.001$ ) HED PR = 1.87 ( $P < 0.001$ )	Past-month alcohol use OR = 2.68 (95% CI: 1.65, 4.38)	Past-month drinking and HED were associated with DVP in bivariate analysis; past-month alcohol use was associated with DVP in adjusted analysis.
Cogan, 2001 (55)	College-based survey <sup>a</sup>	N = 40; white, male, partnered psychology students	Range: age 18–22 years; mean: age 18.6 years	Current problem use	Physical and emotional violence in lifetime	None	Problem use $F = 0.16$ (NS)	N/a	No relation was found between DVP and current problem alcohol use.

Table continues

Table 1. Continued

First Author, Year (Reference No.)	Data	Sample	Age	Alcohol	DVP	Covariates	Crude Effect	Adjusted Effect	Key Findings
Dunkle, 2006 (62)	Community sample (Stepping Stones trial), 2002–2003	<i>N</i> = 1,275; men who had sexual intercourse; rural area of South Africa	Range: age 15–26 years; mean: age 19 years	Problem use in the past year	Physical and sexual violence in the past year	None	Past-year alcohol problem  Physical dating violence  IRR = 2.52 (95% CI: 1.85, 3.44)  Physical and sexual dating violence  IRR = 4.05 (95% CI: 2.49, 6.59)	N/a	Past-year alcohol problem was associated with DVP.
DuRant, 2007 (45)	Cross-sectional survey at 10 North Carolina universities, 2003	<i>N</i> = 3,290; college students	Range: not reported	Frequency of use in a typical month during the last year of high school	Whether student reported starting a fight with a date in lifetime	Demographics, sexual intercourse in the past month, marijuana use in the past month	N/a	Past-month use  M: n/a (too few)  F: OR = 2.63 (95% CI: 1.56, 4.45)	Among F, frequency of past-month alcohol use was associated with past-month DVP.
Foo, 1995 (63)	College-based survey <sup>a</sup>	<i>N</i> = 290; college students	Range: age 16–43 years; mean (M): age 19.8 years, (F): age 19.3 years	Frequency/quantity in the past month	Physical violence in lifetime	Socioeconomic status, childhood abuse victimization	N/a	Past-month use  M: <i>r</i> = 0.20 ( <i>P</i> < 0.05)  F: <i>r</i> = 0.08 (NS)	Alcohol use was associated with DVP for M but not for F.
Fossos, 2007 (66)	College-based survey <sup>a</sup>	<i>N</i> = 780; college freshmen who were heavy drinkers	Range: age 18–25 years; mean: age 18.8 years	Frequency/quantity, and problem use, in the past 3 months	Physical, sexual, and psychological violence in current or most recent relationship	Gender, drinking, alcohol-related problems, alcohol violence expectancies, subjective evaluations of alcohol's effect on violence	N/a	Alcohol use in the past 3 months  <i>t</i> = –0.70 (NS)  Alcohol problems  <i>t</i> = 5.03 ( <i>P</i> < 0.001)	Alcohol use was not associated with DVP, but problem alcohol use was associated with DVP.



Hove, 2010 (68)	College-based survey <sup>a</sup>	N = 313; heterosexual male college freshmen with one or more HED episodes in the past month	Range: age 18–25 years; mean: age 18.25 years	Problem use	Physical, sexual, and psychological violence in lifetime	None	Alcohol problems $r = 0.26$ ( $P < 0.05$ ) Drinks per week (mean) $r = 0.17$ ( $P < 0.05$ ) Days per week of drinking $r = 0.13$ ( $P < 0.05$ ) Highest no. of drinks in the past month $r = 0.14$ ( $P < 0.05$ )	N/a	Alcohol problems, and frequency/quantity of use, were associated with DVP.
Lundeberg, 2004 (46)	College-based survey <sup>a</sup>	N = 115; male undergraduate students, southeastern United States	Range: not reported; college undergraduates	Problem use in the past 6 months	Physical, sexual, and psychological violence in the past year	None	Problem use M: $F = 8.92$ ( $P < 0.001$ )	N/a	Problem alcohol use was associated with physical DVP by M in bivariate analysis.
Luthra, 2006 (43)	College-based survey <sup>a</sup>	N = 200; midwestern United States	Range: not reported; mean (M): age 19.3 years, (F): age 18.8 years	Frequency of use in the past month and lifetime	Physical violence with current or most recent partner	Different covariates for M and F models: M: partner's violence and relationship length; F: parental partner violence, partner's use of violence, problem solving skills	N/a	Past-month use M: OR = 5.31 ( $P < .05$ ) F: OR = 5.04 ( $P < 0.05$ )	For F and M, past-month alcohol use was associated with DVP in adjusted analysis.
Lysova, 2008 (69)	University sample (International Dating Violence Study), 2000	N = 500; Russia	Range: not reported; mean: age 20.1 years	Current HED	Physical violence in the past year	Relationship length, antisocial traits and behavior	Heavy episodic drinking M: $r = 0.12$ (NS) F: $r = 1.9$ ( $P < 0.001$ )	Heavy episodic drinking M: OR = 1.44 (NS) F: OR = 1.62 ( $P < 0.05$ )	HED was associated with DVP among F and M in bivariate analysis; in adjusted, only for F.
Magdol, 1997 (56)	Community sample (Dunedin Study), 1993	N = 861; Dunedin, New Zealand	Range: all age 21 years	Alcohol dependence, (problem use)	Severe physical violence in the past year	None	Alcohol dependence M: $z = 0.73$ ( $P < 0.05$ ) F: $z = -0.05$ (NS)	N/a	Alcohol dependence was associated with severe physical DVP for M but not for F.
Malik, 1997 (70)	High school-based survey, 1994	N = 707; high school students, Long Beach, California	Range: age 14–17 years	Frequency of use in the past year	Physical violence in the past 5 years	Demographics, drug use, violence-related attitudes, family structure, exposure to family and community violence	N/a	Past-year alcohol use OR = 1.04 (NS)	Frequency of alcohol use was not associated with DVP.

Table continues

Table 1. Continued

First Author, Year (Reference No.)	Data	Sample	Age	Alcohol	DVP	Covariates	Crude Effect	Adjusted Effect	Key Findings
McDonell, 2010 (71)	High school-based survey, 2008–2009	N = 351; rural South Carolina county	Range: not reported; mean: age 14.2 years	Frequency of use in the past 6 months	Physical violence in lifetime	Beliefs about violence, whether they knew a male who perpetuated violence	N/a	Use in the past 6 months M: not reported (NS) F: OR = 2.83 (P < 0.05)	Past-6-months alcohol use was associated with DVP for F but not for M in adjusted analysis.
Nabors, 2010 (72)	Community sample, 2001	N = 1,938; Florida	Range: age 16–54; years; mean: age 19 years	Frequency in the past year	Physical violence in the past year	Demographics, illegal drug use, age, family socioeconomic status, family violence, relationship status, social desirability	N/a	All: OR = 1.073 (NS) M: OR = 1.097 (NS) F: OR = 1.036 (NS)	Frequency of alcohol use was not associated with DVP for either M or F.
Rapoza, 2008 (73)	Convenience sample <sup>a</sup>	N = 171; heterosexual dating couples	Range: age 17–34 years; mean: age 19.8 years	Current quantity/frequency	Physical violence in current relationship	None	Frequency of alcohol use M: F = 7.14 (P < 0.01) F: F = 5.07 (P < 0.05)	Not available	For M and F, alcohol use was associated with DVP.
Rivera-Rivera, 2007 (74)	School-based sample, 1998–1999	N = 7,960; public school students, Mexico	Range: age 12–21 years	Not described	Physical violence with most recent partner	Demographics, gang memberships, illegal drug use, number of sex partners, family violence exposure	Not presented	Physical DVP M: 1.1 (95% CI: 0.91, 1.34) F: 1.52 (95% CI: 1.30, 1.78)	Alcohol use was associated with DVP for F but not for M in adjusted analyses.
Rothman, 2010 (75)	High school-based cross-sectional survey, 2008	N = 1,398; Boston, Massachusetts	Range: age 13–18 years	Frequency in the past month	Physical violence in the past month	Age	N/a	Entire sample: PR = 1.68 (95% CI: 1.22, 2.31) M: PR = 2.05 (95% CI: 1.15, 3.64) F: PR = 1.53 (95% CI: 1.10, 2.11)	For both M and F, frequency of past-month alcohol use was associated with past-month physical DVP.
Roudsari, 2009 (76)	College-based cross-sectional survey, 2006–2007	N = 280; college students who reported ≥1 episodes of binge drinking in the past 2 weeks, Houston, Texas	Range: not reported; mean (M): age 19.9 years, (F): age 19.8 years	Estimated peak BAC in the past month	Physical violence in the past 3 months	Demographics, fraternity/sorority and sports team membership, parental drinking, relationship status	N/a	Estimated past-month peak BAC Physical DVP β = 1.09, NS	In adjusted analyses, estimated peak BAC level was not associated with DVP.



Shook, 2000 (57)	University-based cross-sectional survey <sup>a</sup>	N = 572; Midwest university	Range: age 18–26 years; mean: age 20.5 years	Frequency/ quantity currently; drinking within 3 hours of violence	Physical violence in the past year	Exposure to interparental partner violence, attitudes toward women, parent-child violence, drinking 3 hours prior to or following the most recent physically abusive argument	N/a	Frequency/ quantity of use Physical DVP M: $\beta = -0.16$ ( $P < 0.05$ ) F: $\beta = 0.08$ (NS)  Drinking ~3 hours of incident and physical DVP M: $\beta = 0.11$ (NS) F: $\beta = 0.30$ ( $P < 0.01$ )	In adjusted analyses, alcohol use was associated with M DVP, but in the unexpected direction (more drinking was associated with less violence). F DVP was not influenced by general frequency/ quantity of drinking.  Drinking $\geq 3$ hours before or after argument with partner was associated with DVP for F but not for M.
Walton, 2009 (78)	Hospital-based cross-sectional survey, 2006–2007	N = 1,128; Michigan	Mean: age 16 years	Any alcohol in the past year, current problem use or HED; drinking before a fight in the past year	Physical violence in the past year	Demographics, type of medical visit, weapon, alcohol use, alcohol problems, other substance use	Severe violence  Any alcohol use: RR = 2.15 (95% CI: 1.60, 2.88)  Heavy episodic drinking: RR = 2.17 (95% CI: 1.57, 3.00)  Problem use: RR = 2.96 (95% CI: 2.11, 4.16)  Moderate violence: HED RR = 1.58 (95% CI: 1.12, 2.22)	Heavy episodic drinking: OR = 1.60 (95% CI: 1.01, 2.53)  Problem use: OR = 1.76 (95% CI: 1.02, 3.02)	HED, problem use, and alcohol-related fighting were associated with past-year DVP.
Williams, 1994 (58)	College-based cross sectional survey <sup>a</sup>	N = 221; college students	Range: age 18–31 years, mean: age 19.7 years	Frequency/ quantity of use currently	Physical violence in lifetime	N/a	Alcohol consumption: $r = -0.336$	N/a	In bivariate analysis, higher levels of alcohol use were associated with less DVP (the unexpected direction).

Abbreviations: BAC, blood alcohol content; CI, confidence interval; DVP, dating violence perpetration; F, females; HED, heavy episodic drinking; IRR, incidence rate ratio; M, males; N/a, not available; NS, not significant; OR, odds ratio; PR, prevalence ratio; RR, relative risk.

<sup>a</sup> Year of study not presented.

Table 1: first author name and year of publication; data source for the study and years for which data were collected (abbreviated as data); analytic sample size, sample population, and setting of study (abbreviated as sample); age of study participants (abbreviated as age); way that alcohol use was operationalized in the calculation of interest for this review (abbreviated as alcohol); way that partner violence perpetration was operationalized in the calculation of interest (abbreviated as DVP); any covariates included in adjusted analyses, where relevant; crude effect of the relation between alcohol use and DVP; and adjusted effect of the same. The final column of Table 1 briefly summarizes the key findings related to alcohol use and DVP.

Studies were grouped into those that used longitudinal and cross-sectional designs and were entered into the table in alphabetical order by first author. Each study was assigned a reference number corresponding to the order in which it was listed in the table to facilitate analyses. Data were extracted by 2 reviewers (E. F. R. and R. M. J.), who resolved disagreement through discussion with a third reviewer (L. M. R).

The measures of alcohol use examined in the reviewed studies were classified into 3 distinct categories: frequency/quantity of alcohol use, heavy episodic drinking (HED; formerly called binge drinking), and problem alcohol use. Five studies examined multiple measures of alcohol use. All alcohol measures were self-reported. Eighteen studies examined the frequency or quantity of alcohol consumption in a given period of time, where frequency or quantity refers to the number of drinks that youth reported having consumed in a month, several months, or a year, and/or the number of occasions on which an individual drank. Four studies examined the relation between HED and DVP, and one study constructed an estimate of participants' past-month peak blood alcohol content by assessing their body weight and number of drinks consumed over a specified number of hours. Five studies examined problem alcohol use (also referred to as alcohol use disorder, or alcohol dependence) and its relation to DVP, and these studies used a variety of instruments to categorize participants as having alcohol problems, including, for example, the Alcohol Use Disorder Test (AUDIT) (47) and the Self-administered short Michigan Alcohol Screening Test (SMAST) (48).

DVP was also assessed by several different self-report measures. Twenty-five of the 28 studies reviewed (89%) used an "acts scale." Acts scales are inventories of abusive acts or behaviors that participants endorse. For example, one of the most widely used acts scales is the revised Conflict Tactics Scales (49). A sample question from the Conflict Tactics Scales is, How many times in the past year have you pushed or shoved your partner? Other acts scales used by reviewed studies included the Safe Dates Perpetration Acts scale and the Conflict in Adolescent Dating Relationships Inventory (50, 51). The 3 remaining studies used original questions about starting a physical fight with a dating partner, such as, Have you ever started a physical fight with a date/boyfriend/girlfriend? (45, 52, 53).

We calculated 3 combined estimates of the effect of alcohol on DVP by using the 16 cross-sectional studies that provided measures of association and standard errors, one for each of the following alcohol exposures: 1) frequency/quantity of alcohol consumption, 2) HED, and 3) problem alcohol use. If studies provided both unadjusted and adjusted analyses, we

elected to use the adjusted estimates, regardless of the number and type of covariates included. The results of the longitudinal studies were not included in the meta-analysis because there was substantial heterogeneity in the operationalization of exposures and outcomes, but the results of these studies were analyzed qualitatively and are included in this review because of their importance to this area of research. Similarly, 5 cross-sectional studies met the inclusion criteria but did not present standard errors for their measures of effect; thus, they could not be included in the meta-analysis (54–58). These 5 articles are nevertheless reviewed in Table 1 because they provide relevant data about the association between youth alcohol use and DVP that are worthwhile to consider in a comprehensive analysis of this topic.

Our meta-analytic procedures were as follows. First, we converted measures of association into odds ratios and 95% confidence intervals for the 9 studies that did not present them in the original manuscripts (Table 2) using methods from Johnson et al. (59) and Borenstein (60). Next, we calculated the log odds ratio and 95% confidence interval and the weighted log odds ratios; each study received a weight in proportion to the inverse of the standard error squared (Table 2). Third, we tested for statistical heterogeneity in the studies' odds ratios by using Cochran's  $Q$  test and the  $I^2$  statistic, which provides an estimate of the proportion of variation in the log odds ratio outcome that is due to heterogeneity.

Fourth, we combined odds ratios using both fixed-effects and random-effects models (Table 3). Fifth, we visually inspected funnel plots of the log odds ratios to assess the potential for publication bias and conducted Egger tests. Where indicated, we calculated publication-bias-corrected combined odds ratios using methods proposed by Moreno et al. (61). Finally, we created a forest plot to illustrate the relative strengths of the associations between the frequency/quantity of alcohol exposure and DVP outcome across the 12 studies that presented them (Figure 2). In the forest plot, the horizontal axis is on a logarithmic scale so that the confidence intervals appear symmetric.

## RESULTS

Twenty-eight studies met the inclusion criteria (43–46, 52–58, 62–78) (Figure 1). Although our starting year for the search was 1985, no articles published between 1985 and 1990 met our inclusion criteria; thus, the publication dates of the reviewed studies range from 1991 to 2010. Seventy-five percent were published in 2009 or 2010 (Table 1). Across all studies, sample sizes ranged from 40 to 13,422 participants. Five studies were conducted outside of the United States (in Canada, Mexico, New Zealand, Russia, and South Africa). Nine studies (32%) presented gender-pooled results, 12 (43%) presented gender-stratified results or examined gender as a moderator, 6 (21%) presented results for males only, and 1 presented results for females only. Only one-third ( $n = 9$ ) of the reviewed studies were specifically designed to study the association between alcohol use and DVP (44, 53, 58, 66, 68, 69, 72, 73, 77). In all others, the association between alcohol and DVP was not the primary analysis of interest. A total of 7 studies used high school samples (25%); 14 used

**Table 2.** Odds Ratios of Dating Violence Perpetration by Alcohol Exposure, by Type of Alcohol Exposure and Gender of Study Participants

First Author, Year (Reference No.)	Gender	Measure of Association Presented in the Paper	OR	95% CI
Champion, 2008 (52)			2.68	1.65, 4.38
DuRant, 2007 (45)			2.63	1.56, 4.45
Foo, 1995 (63)	Males	$r = 0.20$	2.10	1.04, 4.19
Foo, 1995 (63)	Females	$r = 0.08$	1.34	0.78, 2.28
Fossos, 2007 (66)		$\beta = -0.03$	0.90	0.70, 1.16
Hove, 2010 (68)		$r = 0.17$	1.90	1.24, 2.81
Luthra, 2006 (43)	Males		5.31	1.13, 24.99
Luthra, 2006 (43)	Females		5.04	1.31, 19.54
McDonell, 2010 (71)			2.83	1.19, 6.70
Nabors, 2010 (72)	Males		1.10	0.97, 1.23
Nabors, 2010 (72)	Females		1.04	0.92, 1.16
Rapoza, 2008 (73)	Males	$F(1,147) = 7.14$	2.19	1.22, 3.91
Rapoza, 2008 (73)	Females	$F(1,146) = 5.07$	1.91	1.08, 3.36
Rivera-Rivera, 2007 (74)	Males		1.10	0.91, 1.34
Rivera-Rivera, 2007 (74)	Females		1.52	1.30, 1.78
Rothman, 2010 (75) <sup>a</sup>	Males	2.05 (95% CI: 1.15, 3.64)	2.21	1.16, 4.45
Rothman, 2010 (75) <sup>a</sup>	Females	1.53 (95% CI: 1.10, 2.11)	1.78	1.13, 3.00
Walton, 2009 (78) <sup>a</sup>		2.15 (95% CI: 1.60, 2.88)	3.38	1.97, 7.09
<i>Heavy Episodic Drinking</i>				
Champion, 2008 (53)			1.32	0.91, 1.91
Lysova, 2008 (69)	Males		1.62	1.01, 2.59
Lysova, 2008 (69)	Females		1.44	0.74, 2.82
Walton, 2009 (78)			1.60	1.01, 2.53
<i>Problem Use</i>				
Dunkle, 2006 (62)			4.05	2.49, 6.59
Fossos, 2007 (66)		$\beta = 0.20$	2.10	1.62, 2.72
Hove, 2010 (68)		$r = 0.26$	2.66	1.75, 4.03
Lundeberg, 2004 (46)		M = 1.32 (SD, 0.49) (for nonperpetrators)	1.49	0.64, 3.48
		M = 1.46 (SD, 0.74) (for perpetrators)		
Walton, 2009 (78)			1.76	1.02, 3.02

Abbreviations: CI, confidence interval; F, female; M, male; OR, odds ratio; SD, standard deviation.

<sup>a</sup> These papers did not present odds ratios. Thus, the measure of association from the original paper is presented, along with the odds ratio calculated on the basis of the data presented.

college- or university-based samples (50%); and 7 (25%) used community, hospital-based, or other samples. Eighteen studies included covariates and presented the results of adjusted analyses (Table 1).

### Findings by classification of alcohol use measure

*Frequency/quantity of alcohol consumption.* Of the 18 estimates of the association between frequency and/or quantity of youth alcohol consumption and DVP, 13 (72%) were positive and statistically significant (Table 2 and Figure 2). When a fixed-effects model was used, the combined odds ratio was 1.23 (95% confidence interval (CI): 1.16, 1.31) (Table 3).

However, there was considerable statistical heterogeneity in the studies' odds ratios ( $Q$ -test  $P < 0.001$ ,  $I^2 = 0.79$ ). Therefore, the random-effects model was also assessed (odds ratio = 1.70, 95% CI: 1.39, 2.08) (Table 3). The Egger publication bias test for frequency/quantity was positive, with a slope of 2.67 ( $P < 0.01$ ), and a visual inspection of a funnel plot revealed that the Nabors (72) and Luthra and Gidycz (43) studies were outliers in terms of precision and effect size, respectively.

Some have argued that it is advantageous to correct combined odds ratios for the presence of publication bias, although the methods for doing so also have limitations (79). Therefore, as a secondary analysis and using methods proposed by

**Table 3.** Combined Odds Ratio Results

	Combined Estimate		Wald-Test P Value
	OR	95% CI	
Frequency/quantity of alcohol use			
All estimates (for males and females)			
Fixed effects	1.23	1.16, 1.31	0.000
Random effects	1.70	1.39, 2.08	0.000
Males			
Fixed effects	1.16	1.05, 1.27	0.003
Random effects	1.52	1.14, 2.10	0.009
Females			
Fixed effects	1.22	1.12, 1.34	0.000
Random effects	1.44	1.14, 1.81	0.003
Heavy episodic drinking <sup>a</sup>			
Fixed effects	1.47	1.17, 1.85	0.001
Random effects	1.47	1.17, 1.85	0.001
Problem use			
Fixed effects	2.33	1.94, 2.80	0.000
Random effects	2.36	1.86, 3.01	0.010

Abbreviations: CI, confidence interval; OR, odds ratio.

<sup>a</sup> The fixed-effects and random-effects estimates are equal because no heterogeneity was detected.

Moreno et al. (61), we computed a bias-corrected combined odds ratio of 1.26 (95% CI: 1.07, 1.49) (21).

Six studies presented estimates of the association between frequency and/or quantity of youth alcohol consumption and DVP for males. The fixed-effects and random-effects model estimates of the combined odds ratio for these studies were both statistically significant: 1.16 (95% CI: 1.05, 1.27) and 1.52 (95% CI: 1.14, 2.10), respectively (Table 3). The percentage of variation in the log odds ratios due to heterogeneity was estimated to be 68% ( $Q$ -test  $P < 0.01$ ,  $I^2 = 0.68$ ). The Egger test for publication bias was statistically significant, with a slope of 2.38 ( $P < 0.01$ ), and the bias-corrected odds ratio was 1.09 (95% CI: 0.99, 1.21).

Six studies presented estimates of the association between frequency and/or quantity of youth alcohol consumption and DVP for females. The fixed-effects and random-effects model estimates of the combined odds ratio for these studies were both statistically significant: 1.22 (95% CI: 1.12, 1.34) and 1.44 (95% CI: 1.14, 1.81), respectively (Table 3). The percentage of variation in the log odds ratios due to heterogeneity was estimated to be 80% ( $Q$  test  $P < 0.01$ ,  $I^2 = 0.80$ ). The Egger test for publication bias was not statistically significant ( $P = 0.13$ ).

**HED.** Of the 4 cross-sectional studies that presented data about the association between HED and DVP, one was excluded from the meta-analysis because no standard errors were presented (52). This excluded study found a strong, positive association between HED and DVP in crude and adjusted analyses (Table 1). Consistent with Champion et al. (52), Walton et al. (78) found that HED was positively and signif-

icantly associated with DVP, and Lysova and Hines (69) found a positive, significant association between HED and DVP for males in their sample (Table 2). Although the association between HED and DVP was also positive in the Champion et al. (53) study, and for females in the Lysova and Hines study, neither estimate was statistically significant.

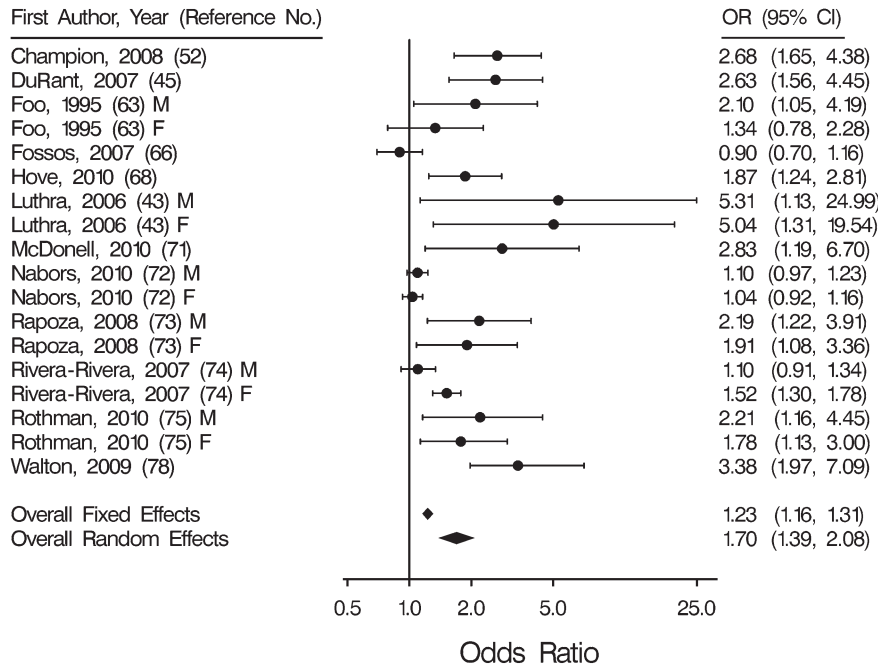
Tests for heterogeneity across these studies were not significant ( $Q$ -test  $P = 0.89$ ,  $I^2 = 0.0$ ), so the fixed-effects and random-effects model estimates are equivalent (odds ratio = 1.47, 95% CI: 1.17, 1.85). There was no evidence of publication bias when the Egger test was used ( $P = 0.57$ ), and the funnel plot did not show a lack of symmetry that would correspond to potential bias.

**Problem alcohol use.** Of the 5 cross-sectional studies that assessed problem alcohol use and DVP, all but 1 (46) found strong and statistically significant positive associations (Table 2). There was moderate heterogeneity ( $Q$ -test  $P = 0.09$ ,  $I^2 = 0.50$ ), and the fixed-effects and random-effects models produced similar results. When a fixed-effects model was used, the combined odds ratio was 2.33 (95% CI: 1.94, 2.80), and the combined odds ratio with a random-effects model was 2.36 (95% CI: 1.86, 3.01) (Table 3). There was no evidence of publication bias when the Egger test was used ( $P = 0.98$ ), and the funnel plot did not show a lack of symmetry that would correspond to potential bias.

### Longitudinal studies

The 5 longitudinal studies that have assessed alcohol use and DVP are disparate in terms of samples, exposure variables, and outcomes (Table 1). Foshee et al. (65) assessed the frequency of past-month alcohol use among 8th- and 9th-grade students in a North Carolina county and followed up 1 year later to determine whether alcohol use was associated with DVP onset. In this study, female alcohol use at baseline was associated with DVP onset 1 year later, but this finding was not true for males. Foshee et al.'s subsequent study (64) assessing the frequency of alcohol use ever by students in 8th–10th grades, and DVP onset several months later, found no association in adjusted analyses.

Gidycz et al. (67) studied daily alcohol use and problem drinking in male university students as potential predictors of DVP over a 3-month follow-up period and, similar to Foshee et al. (64), found no association in adjusted analyses. McNaughton Reyes et al. (44) used a sample of students in 8th–12th grades and assessed the frequency of HED in the 3 months before baseline, and each year for 3 years. These authors found that HED in 8th grade was associated with higher levels of DVP in 10th grade but that these effects faded by grade 12 such that early HED was no longer predictive of DVP. Stappenbeck and Fromme (77) also studied HED, and the frequency of drunkenness, but in a university-based sample. They found that in their freshmen year, males' HED and frequency of drunkenness was associated with concurrent DVP but that their drinking did not predict future DVP, and that DVP did not predict future HED for either males or females. Taken collectively, the results of these 5 longitudinal studies suggest that, although alcohol use may be associated with concurrent DVP, no consistent evidence



**Figure 2.** Forest plot illustrating relative strength of associations between frequency/quantity of alcohol use and dating violence. CI, confidence interval; F, results for females; M, results for males; OR, odds ratio.

supports the contention that youth alcohol use predicts future DVP.

**DISCUSSION**

Our meta-analysis suggests a significantly increased risk of DVP in youth who a) drink more frequently or in higher quantities, b) engage in HED, and c) are problem drinkers. The relation between problem use and DVP was particularly strong, with a 133% increase in the odds of DVP corresponding to problem drinking. We did not observe substantial differences in the effect of frequency or quantity of alcohol use on DVP based on gender.

On the basis of this review, we offer the following 4 observations about the state of the literature on alcohol use and DVP among youth. First, a slight majority of studies were conducted with college-enrolled or college-aged participants (52%). Studies using younger samples are urgently needed given that, in the United States, the average age at drinking initiation is 14 years (80) and that 25% of those 12 years of age report having had a romantic relationship (81). Studies of non-college-attending youth aged 18–21 years, and females, are also particularly needed.

Second, less than half of the studies with results that pertain to the association between alcohol and DVP were designed to investigate that relation. In other words, in the majority of studies that presented findings about the alcohol-DVP association, the results were incidental to the primary analysis of interest. This is problematic because it means that the evidence base upon which researchers and practitioners have to draw

comprises numerous studies of less-than-optimal rigor related to alcohol or DVP assessment and analyses. For example, measures are used that have not been tested for reliability or assessed for validity, and adjusted analyses include covariates that may be in the causal pathway between alcohol use and DVP (e.g., antisocial behavior or alcohol-aggression expectancies) or nearly collinear with it (e.g., marijuana use). For this reason, additional studies explicitly designed to rigorously evaluate the strength and nature of the alcohol-DVP relation among youth, and how that relation may vary over time, are needed.

Third, while it must be acknowledged that there are additional costs and feasibility challenges in recruiting larger and more diverse samples, there is reason to suspect that the alcohol-DVP association among youth may differ by gender, developmental period of adolescence, and culture. Each of these factors appears to influence youths’ drinking styles and has also been found to be associated with either the prevalence or nature of DVP (82–86). Therefore, it is reasonable to postulate that the alcohol-DVP association may vary by one or more of these factors, and thus that the development of prevention strategies should be informed by these potential differences.

Fourth, to our knowledge, the field lacks even a sole study that directly tests the acute-effects model for youth. All of the accumulated research addresses the potential for a chronic effect of alcohol consumption on DVP, and none has investigated whether alcohol use among youth results in immediate increased risk of partner violence perpetration. This type of research, using daily diary, timeline follow-back, or ecologic momentary studies, could be critical for the development of



effective interventions to prevent dating violence, if a relation is detected.

It is important to acknowledge that there are methodological complexities in establishing a causal relation between alcohol and DVP among youth that will make scientific progress on this topic challenging. These challenges as they pertain to individuals of all ages have been described in detail elsewhere (e.g., Lipsey (15)), so they are reviewed here only briefly.

Both practical and ethical concerns preclude researchers' ability to randomize youth to alcohol consumption conditions and observe their subsequent partner violence behavior. Proxies for partner violence behavior, such as reactions to vignettes or self-reported intentions to behave nonviolently or aggressively, are subject to limitations. Cross-sectional observational studies are "inherently ambiguous with regards to causality" (15, p. 249) and thus are of limited utility to the field at this time. Longitudinal studies will be able to address the issue of temporality by measuring alcohol use at one time point and DVP at a subsequent time point. However, typical longitudinal studies obtain waves of data months or even years apart, which means that, although they can be informative about the chronic effects of alcohol on DVP, they do not permit inferences about acute or psychopharmacologic effects. Daily diary or momentary studies would provide information about potential acute effects of alcohol on DVP, although these studies will likely face challenges related to participant retention, accuracy of self-report, and ethics (e.g., researchers' real-time knowledge of ongoing dating abuse perpetration may require reports to authorities) that could affect internal validity.

### Limitations

This review is subject to several limitations. First, as with all reviews, our conclusions are limited by the quality of the underlying studies. Each of the studies included in this review was subject to its own limitations, which included threats to internal and external validity. Of particular concern are issues related to the accuracy of recall of alcohol use and DVP, and the accuracy of self-reports. Notably, while some studies of adult drinking and partner violence have attempted to curtail recall problems by validating self-reports of alcohol use and aggression with partners' reports of the same, this strategy is unlikely to be as successful with young adolescents who are not cohabitating. Moreover, use of acts scales to assess DVP has been widely criticized because they fail to take into account the motivations for violence, severity of injuries inflicted, and impact on the victims (87). There has been a call to assess dating violence perpetrators' motivations in addition to counting their violent acts, but no validated instrument for doing so is yet available (88). Nevertheless, forthcoming studies on alcohol and DVP among youth should prioritize rigor. At this time, additional cross-sectional studies using original or single items to operationalize alcohol consumption or DVP are unnecessary.

Second, the question of whether the alcohol-DVP link varies by developmental stage has not yet been adequately answered. Analyses of longitudinal cohorts, such as the National Longitudinal Study of Adolescent Health (Add Health), that are specifically designed to compare the alcohol-dating violence

link among subgroups of youth based on either their chronological age or their developmental stage (e.g., time since pubertal onset) would be informative. Third, we classified the studies on the basis of the alcohol exposure variable, but it must be acknowledged that there was both statistical heterogeneity and clinical variations in the way that alcohol use was operationalized, even within the groupings that we created. Fourth, our meta-analysis of the frequency/quantity of alcohol use and DVP literature suggests that publication bias may be distorting the evidence available in this area. Thus, our findings strongly support the need for peer reviewers and journal editors to be mindful of the importance of publishing research with null findings to minimize publication bias on this topic going forward.

Finally, other subtopics of interest related to youth alcohol consumption and DVP were not included in this review. For example, some investigators have assessed alcohol expectancies, or age at first drink, in relation to DVP (58, 89). This review primarily focused on the behavior of alcohol consumption rather than alcohol-related attitudes or age at initiation. Researchers with an interest in this topic may find it helpful to review these related studies and the parallel literature on alcohol use and dating violence victimization.

### Conclusion

The results of the studies we reviewed support the conclusion that higher levels of alcohol use are positively associated with youth DVP. However, no studies have directly assessed the acute or pharmacologic effects of alcohol use on DVP. Rigorous studies designed to investigate the youth alcohol-DVP link specifically, and whether results vary by gender, developmental stage, or culture, are needed.

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