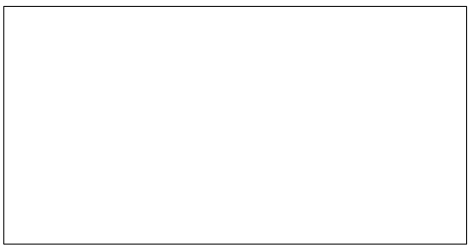

Substance Abuse

Routledge
Taylor & Francis Group

Social influences on binge drinking in emerging adults: Which social network members matter most?

Journal:	*Substance Abuse*
Manuscript ID	WSUB-2019-3444
Manuscript Type:	Brief Report
Keywords:	binge drinking, emerging adults, alcohol, social network

Abstract

Background: Binge drinking peaks in emerging adulthood and is associated with a myriad of negative consequences. Research indicates social network members have a significant influence on binge drinking. In particular, theory suggests that drinking habits of romantic partners and peers have a stronger influence on emerging adult binge drinking than do drinking habits of siblings and parents. We investigated the relative influences of siblings, parents, romantic partners, and peers on emerging adults' binge drinking using a multi-source design and a robust measure of binge drinking. We hypothesized that peer and romantic partner binge drinking would more strongly predict emerging adult (target) binge drinking than would parent and sibling binge drinking. *Methods:* We recruited 321 participants (targets) aged 17-25 years, alongside 882 members of their social network (influencers). Targets and influencers completed self-report measures of binge drinking (frequency, quantity, and self-perception). *Results:* Structural equation modeling revealed the direct effect from romantic partner binge drinking to target binge drinking was significant. In contrast, the direct effects from peer, parent, and sibling binge drinking to target binge drinking were non-significant. *Conclusion:* In emerging adulthood, romantic partners appear to exert the strongest social influences on binge drinking.

Keywords: binge drinking, emerging adults, alcohol, social network

Social influences on binge drinking in emerging adults:

Which social network members matter most?

Binge drinking–the consumption of 5+ drinks in two-hours (4+ for women)[1] peaks in early adulthood[2] and is associated with health and social risks such as accidents, lost productivity, and relationship problems[3]. As these negative consequences are especially prevalent in emerging adulthood (17-25 years)[4], identifying factors, such as social influences, that contribute to binge drinking in emerging adulthood is vital.

Emerging adults are embedded within social networks where members influence one another's alcohol use via active (e.g., explicit offers of alcohol) and passive (e.g., modeling, perceived norms) mechanisms[5]. Developmental theorists suggest that peers and romantic partners are the most important sources of social influence for emerging adults[6-7]. During emerging adulthood, young people shift from spending most of their time with parents and siblings to spending more time with peers and romantic partners[4]. As such, emerging adults rely more on peers and partners than family for support and intimacy[4].

Indeed, among emerging adults, peer use of alcohol is a robust predictor of regular and hazardous drinking[8], and both active and passive influences from peers independently predict binge drinking[9]. Similarly, the alcohol use of partners influences individual binge drinking over the short- and the long-term and predicts changes in alcohol consumption between adolescence and emerging adulthood[10,11,12].

In contrast, the impact of parent and sibling alcohol use on the alcohol use of emerging adults is unclear. Studies on sibling influence in emerging adulthood suggest the influence of siblings is modest, and tends to occur from older siblings, especially if siblings are close in age and the same sex[13]. Research examining the impact of parental use suggests that parental alcohol

use increases the likelihood that emerging adults will also drink alcohol[14]; however, relative to the influence of peer drinking, parental drinking might have a smaller impact on emerging adults' drinking[14].

Advancing Literature on Binge Drinking and Social Influence in Emerging Adults

Research has focused primarily on specific social network members or undifferentiated social networks rather than contributions of multiple types of network members on emerging adult alcohol use. Our aim was to address this by determining the most important influencers. Moreover, research has typically included participant perceptions of network members' alcohol use instead of having network members directly report on their alcohol use[8]. As perceptions of others' alcohol use can be biased, it is unclear if the actual alcohol use of network members is an important influence[15]. Therefore, we collected self-reported alcohol use directly from influencers. Our study is the first to compare the influence of multiple types of network members using direct reports. Finally, we advanced the literature by measuring binge drinking as a latent variable composed of frequency, severity, and perceptions of binge drinking. Building on theory and research[4,10], we hypothesized that the binge drinking of peers and romantic partners, but not the binge drinking of parents and siblings, will predict target binge drinking.

Methods

Participants

We recruited 321 undergraduate emerging adult targets (*M* age = 19.5; range 17-25; 72.9% female; 80.4% Caucasian) from XXX as part of a larger study (XXX). We also contacted 1,680 social network members (influencers) of our targets; 962 influencers responded (*M* = 3.28 influencers/target). Influencers were comprised of 166 mothers, 99 fathers, 65 sisters, 37 brothers, 3 spouses, 80 dating partners, 373 friends, 52 roommates, 4 classmates, 3 co-workers,

42 other relatives (e.g., grandparent), and 32 "others." Influencers categorized as "other" and "other relatives" were excluded, as were influencers who did not specify their relationship to the target (n = 6). There was subsequently a total of 882 influencers: 265 parents, 102 siblings, 432 peers, and 83 romantic partners. Influencer characteristics are in Table 1.

---TABLE 1 HERE---

Measures

Binge drinking frequency. Consistent with the NIAAA[1], targets and influencers were asked, "during the past 7 days, how often did you have 5 (4 for women) or more drinks containing any kind of alcohol within a 2-hour period?" Targets and influencers responded on a 12-point scale from "0 times" to "10+ times". This item correlates strongly with the NIAAA's measure of binge drinking frequency[1] (r = .68-.83)[11].

Binge drinking severity. Targets and influencers were asked, "What is the greatest number of drinks you consumed in a 2-hour period during the past 7 days?", as a measure of binge drinking severity[11].

Binge drinking self-perceptions. Targets and influencers were asked three items assessing perceptions of their binge drinking ("During the past 7 days, there were times when I rapidly drank a very large amount of alcohol within a 2 hour period;" "The average person would be amazed if s/he knew how much alcohol I consumed within a 2 hour period (during the past 7 days);" "During the past 7 days, there were times when I drank what other people would regard as an unusually large amount of alcohol within a 2 hour period")[11]. Items were rated on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). This scale has adequate reliability (α = .77-.87)[11].

Procedure

Targets completed paper-and-pencil versions of measures and provided the email address of five social network members (influencers) whom they had known for at least three months and had contact with at least twice a week. Eligible influencers completed measures online. Targets were compensated with one credit towards a psychology course. Influencers were entered into 1-of-20 $50 draws.

Results

Descriptive Statistics

Means, standard deviations, bivariate correlations, and Cronbach's alphas appear in Table 2. Following Cohen's guidelines[16] for small, moderate, and large effects (r = .10, .30, .50), target binge drinking had a moderate positive relationship with peer binge drinking and a large positive relationship with partner binge drinking. In contrast, the relationships between target binge drinking with parent and sibling binge drinking were small and non-significant ($p < .05$).

---TABLE 2 HERE---

Structural Equation Modeling

We tested if parent, sibling, peer, and/or partner binge drinking were predictors of target binge drinking using structural equation modeling with FIML estimation in AMOS[17]. We evaluated fit using CFI, TLI, and RMSEA. CFI and TLI $\geq$.95, and RSMEA $\leq$.05 indicate good fit[18].

Measurement model. The measurement model (Figure 1) fit well: $\chi 2$ (80) = 128.12, CFI = .968; TLI = .952; RMSEA = .043, 90% CI [.029-.057]. Factor loadings were significant ($p <$ .001) and >.40.

---FIGURE 1 HERE---

Figure 1. Measurement model. Ovals represent latent variables. Rectangles represent observed indicators. Double-headed black arrows represent significant correlations ($p < .05$). Double

headed grey arrows represent non-significant correlations ($p > .05$). Single headed black arrows represent significant loadings ($p < .05$). Pairwise deletion was utilized. BD = binge drinking.

Structural model. The structural model (Figure 2) had the identical fit indices as listed above for the measurement model. Only romantic partner binge drinking predicted target binge drinking ($\beta = .69$, $p < .001$).

----FIGURE 2 HERE---

Figure 2. Structural Model. Significant direct effects ($p < .05$) are represented by single-headed black arrows. Non-significant direct effects ($p > .05$) are represented by single-headed grey arrows. Double headed arrows signify covariances. Estimates are standardized.

Discussion

We tested the effects of the binge drinking patterns of social network members on the binge drinking patterns of emerging adults using a multi-source design and a psychometrically-robust binge drinking measure. We investigated the relative influence of different social network member groups by examining various social network members in a single model.

As hypothesized, parent and sibling binge drinking did not predict target binge drinking. Our results align with theory and research suggesting that the relative influence of parents and siblings decreases with age[4,6,14]. Similarly, consistent with Bartel and colleagues[10] and Mushquash and colleagues[11] and as hypothesized, romantic partners' binge drinking predicted target binge drinking. The large size of this effect probably reflects the important influence of romantic partners during emerging adulthood and the cross-sectional nature of our study, which likely captured selection and socialization effects.

People select romantic partners based on the similarity of characteristics, values, and behaviors, which may lead people to choose partners with similar levels of alcohol use[12]. This similarity-based selection of partners may be especially important given findings that the degree

of similarity in alcohol use between partners impacts relationship quality[12]. As such, the similarity of binge drinking between partners in our sample may partially reflect this selection process. Additionally, once in a relationship, partners may further reduce discrepancies between their alcohol use patterns and that of their partners to improve relationship quality and meet needs for approval and acceptance[19]. This socialization effect may be particularly strong in romantic partner contexts, given social learning theory suggests that the behavior of those who are highly valued is most likely to be emulated[5], and developmental theory suggests that romantic partners are important in emerging adulthood[7]. Thus, partners might influence *how much* individuals consume alcohol[20].

Partners might also influence *why* individuals drink alcohol; individuals may observe their partners' motivations for drinking (e.g., drinking to cope with anxiety) and adopt those reasons for drinking themselves, which can result in an escalation of drinking behavior[20]. Ultimately, the combined effects of selection and socialization might result in a "drinking partnership"[21] which encourages binge drinking and may explain our strong direct effects of partners on target binge drinking.

Unlike partner binge drinking and contrary to hypotheses, peer binge drinking did not predict target binge drinking. Broad peer networks have an impact on binge drinking while in general single peers, except for "drinking buddies," might not[22-23]. Thus, we might not have included enough peers to capture the influence of a peer network or might not have included the "right" single peers. Secondly, peer influence might be the result of descriptive or injunctive norms (how much peers are perceived to drink; what is perceived to be accepted by the peer group) rather than the actual drinking habits of specific individuals. Third, as romantic partners are likely present in many peer-based interactions, some of the variance from peers may have

been captured and accounted for by partners in the model. Nonetheless, our results accord with developmental theory suggesting that during the transition from adolescence to emerging adulthood, the importance of peers declines, while the importance of romantic partners increases[24].

Limitations and Future Directions

Our results are limited by our predominately female, Caucasian, and university-educated sample and may not be generalizable to more diverse groups of emerging adults. Future research should adopt a longitudinal design. Additionally, a broader peer network was not captured by our study, nor was the influence of different types of peers (e.g., drinking buddies vs. casual acquaintances). The impact of these distinct sources of peer influence should be investigated and compared to the influence of romantic partners. Finally, though our results suggest parental binge drinking is not a significant influence, parents might influence emerging adults via mechanisms other than personal alcohol use (e.g., rules about drinking)[25].

Concluding Remarks

When investigating the social networks of emerging adults, partners are a particularly influential type of network member when it comes to binge drinking. The strength of romantic partner influence has important implications for health-promotion campaigns, which could focus on increasing awareness of partner influence. Additionally, the strength of romantic partner influence also has implications for alcohol misuse interventions, which should not underestimate the impact of partners on emerging adult binge drinking.

Disclosure Statement: The authors have no potential conflicts of interest to declare.

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Table 1

Influencer characteristics

Type	Number included	Mean age in years	Relationship length in years
Parents	265	51.16 (37-68)	20.91 (.08-26)
Siblings	102	21.14 (14-34)	19.71 (3.25-40.0)
Romantic	83	21.40 (17-36)	2.59 (.17-13.16)
Peers	432	20.20 (11-63)	5.01 (.08-35.9)

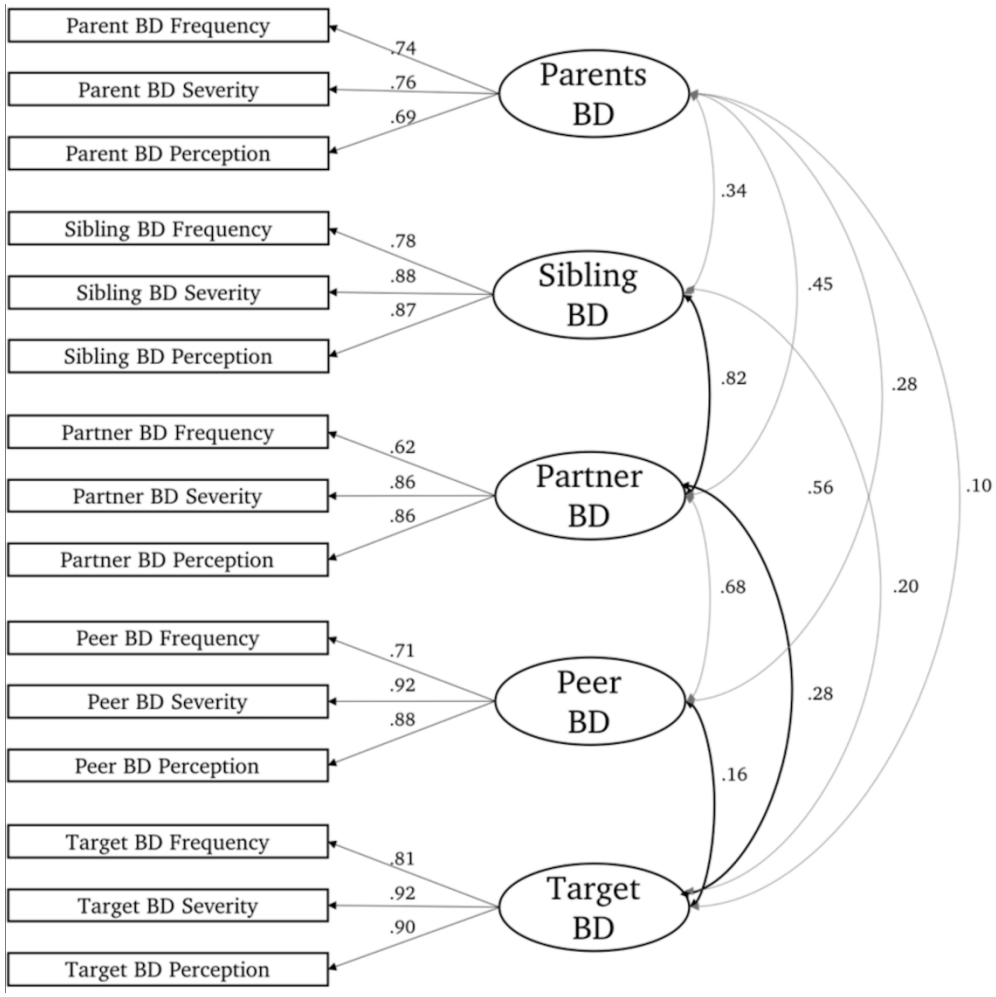
Note: As parents were not required to be biological parents, the value of .08 may represent a step-parent.

Table 2

Bivariate correlations, means, standard deviations, possible range, actual range, and alpha reliability

Variable	1	2	3	4	5
1. Target BD total	—				
2. Parent BD total	.12	—			
3. Sibling BD Total	.15	.12	—		
4. Peer BD total	.27**	-.03	-.03	—	
5. Partner BD total	.60**	.05	.54**	.17	—
M	7.86	5.67	6.46	8.75	9.37
SD	6.17	3.61	5.14	5.94	6.82
Possible range of scores	3+	3+	3+	3+	3+
Actual range of scores	3-35	3-26	3-23	3-34	3-19
Cronbach's alpha (α)	.91	.77	.89	.88	.81

Note: Missing data handled with pairwise deletion. **BD** = binge drinking. ($N = 20$ [partner/sibling] to 221 [target/peer]). Cronbach's alpha calculated using summation of standardized frequency, standardized severity, and standardized total perception scale. See measures section for previous research on the alpha of the three-item perception scale.
* $p < .05$ ** $p < .01$.


Parent BD Frequency
Parent BD Severity
Parent BD Perception
Sibling BD Frequency
Sibling BD Severity
Sibling BD Perception
Partner BD Frequency
Partner BD Severity
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Peer BD Frequency
Peer BD Severity
Peer BD Perception
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Parents BD
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Figure 1

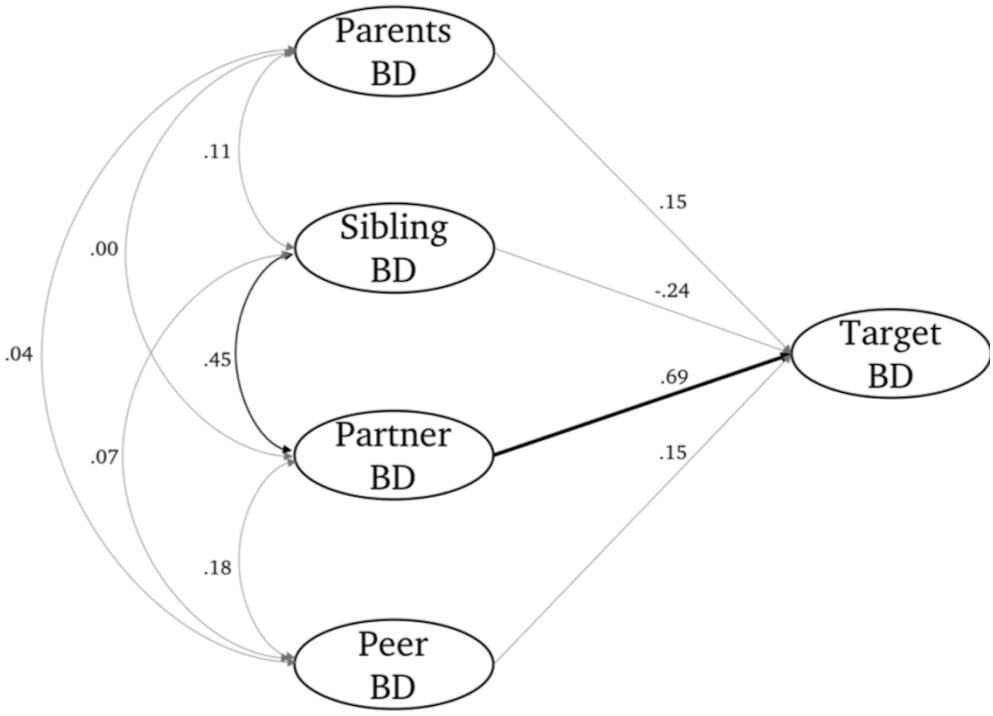
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Figure 2