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Short Communication

Do romantic partners influence each other's heavy episodic drinking? Support for the partner influence hypothesis in a three-year longitudinal study

Sara J. Bartel [a,*], Simon B. Sherry [a], Danielle S. Molnar [b], Aislin R. Mushquash [c], Kenneth E. Leonard [d,e], Gordon L. Flett [f], Sherry H. Stewart [g]

[a] Department of Psychology and Neuroscience, Dalhousie University, Life Sciences Centre, 1355 Oxford Street, PO BOX 15000, Halifax, NS B3H 4R2, Canada
[b] Brock University, Department of Child and Youth Studies, 1812 Sir Isaac Brock Way, St. Catharines, ON L2S3A1, Canada
[c] Lakehead University, Department of Psychology, 955 Oliver Rd., Thunder Bay, ON P7B5E1, Canada
[d] University of Buffalo, Department of Psychology, 12 Capen Hall, Buffalo, NY, USA
[e] University of Buffalo, Department of Psychiatry, 12 Capen Hall, Buffalo, NY, USA
[f] York University, Department of Psychology, 4700 Keele St., Toronto, ON M3J1P3, Canada
[g] Department of Psychiatry, Dalhousie University, 5909 Veterans' Memorial Lane, 8th Floor, Abbie J. Lane Memorial Building, QEII Health Sciences Centre, Halifax, NS B3H 2E2, Canada

HIGHLIGHTS

- Partner influence on HED occurs over the long term and applies to partners in varying stages of serious romantic relationships.
- Women influence their partners' HED just as much as men influence their partners' HED.
- Men and women appear to engage in HED because they have a pattern of HED in their past.
- Men and women appear to engage in HED because they enter into a "drinking partnership" which encourages HED.

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ABSTRACT

Background: Approximately one in five adults engage in heavy episodic drinking (HED), a behavior with serious health and social consequences. Environmental, intrapersonal, and interpersonal factors contribute to and perpetuate HED. Prior research supports the partner influence hypothesis where partners influence each other's HED.
Objectives: We examined the partner influence hypothesis longitudinally over three years in heterosexual couples in serious romantic relationships, while exploring possible sex differences in the magnitude of partner influence.
Methods: One-hundred-and-seventy-nine heterosexual couples in serious relationships (38.5% married at baseline) completed a measure of HED at baseline and again three years later.
Results: Using actor-partner interdependence modelling, results showed actor effects for both men and women, with HED remaining stable for each partner from baseline to follow-up. Significant partner effects were found for both men and women, who both positively influenced their partners' HED over the three-year follow-up.
Conclusions: The partner influence hypothesis was supported. Results indicated partner influences on HED occur over the longer term and apply to partners in varying stages of serious romantic relationships (e.g., cohabiting, engaged, married). Women were found to influence their partners' HED just as much as men influence their partners' HED. Findings suggest HED should be assessed and treated as a couples' issue rather than simply as an individual risky behavior.

1. Introduction

Heavy episodic drinking (HED) or "binge drinking", defined as consuming at least four drinks for women (or five drinks for men) on a single occasion, is reported by about one in five adults every year (Bulloch

* Corresponding author.
E-mail address: Sara.Bartel@dal.ca (S.J. Bartel).

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et al., 2016). HED is tied to serious health, social and economic consequences (Plant et al., 2009). Although there is extensive research implicating intrapersonal factors in HED (Krank et al., 2011; Patrick and Schulenberg, 2010), there is a dearth of research investigating HED in romantic relationships.

1.1. Partner influence hypothesis (PINH)

People influence one another, and as the importance and immediacy of a group or individual increases, this influence becomes stronger (Latané, 1981). Forces of influence are especially strong within romantic relationships because these relationships are important, are predicated on mutual acceptance, and involve frequent exposure to the habits of one's partner.

As applied to HED, the PINH suggests men and women in romantic relationships influence one another's future HED (Mushquash et al., 2013). Within romantic relationships, women may discourage HED in men; for example, HED in a husband may be incompatible with his wife's social role expectations for him as a husband and/or father (e.g., Schou and Birkelund, 2015). Alternatively, women may increase their HED to match their heavier drinking male partners, with drinking occasions representing contexts where (for example) wives and husbands bond, relax, or socialize (e.g., Homish and Leonard, 2007). While both sex-specific effects and mutual partner influences are possible, mixed results about the sex-specific aspects of the PINH prevail. In a study of 497 couples, Leonard and Eiden (1999) found that only husbands' baseline HED influenced the HED of their wives over the first year of marriage. This finding was replicated by Leonard and Mudar (2004) in a study of 592 married couples; however, this pattern subsequently shifted within the first four years of marriage, with wives then influencing their husbands' drinking (Leonard and Homish, 2008). In another study of 489 married couples, husbands and wives reciprocally influenced the drinking of their partners over five years; however, after an additional five years, only wives influenced their husbands' drinking (Windle and Windle, 2014). In contrast, in a one-month study of 208 dating couples, Mushquash et al. (2013) found both men's and women's baseline HED influenced the future HED of their dating partner. Given these varying sex-specific findings, further investigation of the PINH appears warranted.

1.2. Advancing the literature on the PINH

Our objective was to examine the PINH longitudinally in couples in committed romantic relationships. Extant research focuses on young dating couples, newly married couples, or middle-aged married couples, meaning the PINH has yet to be studied in romantic partners in varying stages of a serious romantic relationship (e.g., cohabiting, engaged, married). Our study used a three-year, two-wave longitudinal design and the actor-partner interdependence model (APIM; Cook and Kenny, 2005) to advance research on partner influence on HED.

The APIM accounts for interdependence in dyadic relationships and assesses actor effects and partner effects. Actor effects measure the stability of one's own behavior over time, whereas partner effects measure the extent to which the past behavior of one partner predicts the future behavior of the other partner. By controlling for individual stability, a longitudinal APIM provides a stringent test of whether partners influence each other over time.

2. The present study

Our study tested two hypotheses regarding HED in partners in romantic relationships. Building on previous literature, we hypothesized male and female partners would demonstrate significant, positive actor effects for HED, indicating stability of HED over time. Additionally, we hypothesized men and women would display significant, positive partner effects for HED over a three-year interval. Given inconsistent findings relating to the sex-specific aspects of the PINH, questions of sex differences were considered exploratory

2.1. Participants

A sample of 297 heterosexual couples was recruited. We only included participants who met the eligibility criteria, had complete data on the measures of interest, and were still in a relationship with the same partner at time two (T2), resulting in a final sample of 179 couples (48 couples with missing data at T2, 69 couples not together at T2, and 1 couple that did not meet eligibility criteria were excluded). To be eligible, couples had to be in a relationship for at least six months, be at least 18 years old, and have access to the Internet with their own email addresses. At time one (T1), 69 (38.5%) couples were married, 15 (8.4%) were engaged, 35 (19.6%) were in a serious relationship, 36 (20.1%) were cohabiting, and 1 (0.6%) was dating. The relationship status of 23 couples (12.8%) was unclear because the responses of both partners did not match (e.g., one partner reported “in a serious relationship” while the other reported “married”). The average relationship length at T1 was 7.45 years (range 0.5–44.17 years).[1] At T1, the average age of women was 30 ($SD = 10$) years and the average age of men was 32 ($SD = 11$) years.

2.2. Measure

2.2.1. HED

Building on past research (e.g., Mushquash et al., 2013), HED was assessed using a continuous item (Molnar et al., 2010). In reference to the past year, participants were asked, “How often do you have five or more drinks on one occasion?” Participants were given seven response options ranging from “Never” to “Most days.” Participants were provided with a description of a standard drink.

2.3. Procedure and data analysis

Our study received ethical clearance from Brock University's research ethics board. Participants were recruited through posters and advertisements. At T1 and T2, members of each couple were instructed to complete a web-based questionnaire independently and asked not to discuss their participation with their partner. Once both partners had completed the questionnaires at each time point, $50 compensation was provided.

The APIM model in Fig. 1 was tested using Mplus 7.4 (Muthen & Muthen, 1998–2015). Actor and partner effects and patterns of association in the APIM were tested using k-statistics (Cohen, 1960). To minimize the influence of a few extreme cases on analyses, we replaced any values larger than three *SD*s above the group mean (1.54% of data) with the value equal to the group mean plus three *SD*s; three multivariate outliers were removed.

3. Results

Missing data were missing completely at random based on Little's MCAR test, $\chi^2 = 10.63$, $p = 0.22$. Small's omnibus test indicated our data were multivariate non-normal. Full-information maximum likelihood estimation procedures were employed and unstandardized estimates are presented. To address the non-normality, we conducted all analyses using bias-corrected bootstraps with 20,000-bootstrap samples (Nevitt & Hancock, 2001).

Means, standard deviations, and bivariate correlations for HED for each partner at each time point appear in Table 1. Consistent with hypotheses, actor effects for HED were positive and significant for both

[1] Values for relationship length was calculated by averaging the reports given by each member of the couple (partners' responses were significantly correlated, $p < 0.01$).

Table 1
Means, standard deviations, and bivariate correlations.

Variable	*M*	*SD*	1	2	3	4
1. Female partner HED (Time 1)	1.74	1.66	–			
2. Male partner HED (Time 1)	2.15	1.34	0.55***	–		
3. Female partner HED (Time 2)	1.62	0.85	0.71***	0.55***	–	
4. Male partner HED (Time 2)	2.07	1.25	0.51***	0.73***	0.59***	–

Note. HED = Heavy episodic drinking.
*** $p < 0.001$.

partners in the APIM (see Fig. 1). As hypothesized, both partner effects were also positive and significant (see Fig. 1).

Following recommendations (Kenny & Ledermann, 2010), we tested for dyadic patterns in the data by calculating *k* for distinguishable dyads. The *k* for women was 0.31, 95% CI [10, 0.73] and the *k* for men was 0.34, 95% CI [0.08, 0.69]. Results support a mixed pattern with large actor effects and smaller partner effects in both women and men.

4. Discussion

This study supports the PINH. HED was stable across time for both partners over a three-year period and the future HED of each partner was strongly predicted by his or her own previous levels of HED. Each partner in the couple also exercised a small but significant influence on the future HED of his or her partner, such that men and women with partners who engaged in greater HED at T1 engaged in greater HED at T2. Although this influence was less powerful than the influence of each partner's own past behavior, this result is notable as our analyses controlled for baseline levels of HED, thereby eliminating a substantial amount of the variance available for prediction by the partner's HED.

Our study replicates prior work supporting the PINH and shows partner influence effects apply to those in serious relationships that include, but are not limited to, marriage. Our findings converge with Windle and Windle (2014), who also found partner influence effects over longer intervals. As research indicates heavy consumption of alcohol peaks between 21 and 23 years of age (Substance Abuse and Mental Health Services Administration, 2006), and most of our participants were substantially older, our study also suggests partner influences on HED continue beyond the developmental stage in which HED is most prevalent.

Our lack of sex-specific results is partially discrepant with some prior studies (i.e., Leonard & Eiden, 1999; Leonard & Mudar, 2004; Windle & Windle, 2014) but consistent with others (Mushquash et al., 2013). This may be because the respective influences of women and men on their partners' drinking shift over the life course. Musquash et al. (2013) examined early dating relationships, Leonard and Eiden (1999) and Leonard and Mudar (2004) studied the first year(s) of marriage, and Windle and Windle (2014) primarily captured the experience of long-term marital relationships. In contrast, our study captured a broader spectrum of relationships (e.g., including older couples in more serious relationships relative to Mushquash et al. and more diverse couples relative to Windle & Windle). As such, our results may represent a clearer indication of partner influence within serious adult relationships.

Overall, our results suggest adults engage in HED because they have a pattern of HED in their past and because they engage in a "drinking partnership" which encourages HED (Roberts & Leonard, 1998). Our research suggests men and women alike may shift their HED due to pressure to conform to the behaviors of one's partner (Latané, 1981), a wish to be accepted by one's partner (Baumeister & Leary, 1995), and/or an increasingly positive attitude toward HED due to exposure to the HED behaviors of one's partner (Moreland & Zajonc, 1982). While trying to maintain their relationship and receive approval from their significant other, partners may become caught in a cycle of maladaptive drinking. By neglecting to consider romantic relationships in conceptualizing HED, researchers and clinicians may underestimate the importance of interpersonal factors contributing to HED.

4.1. Limitations and future directions

Our study focused on HED from the perspective of partner influence; however, partner selection also contributes to such patterns (Wiersma, Fischer, Cleveland, Reifman, & Harris, 2011). Although we did control for selection effects through cross-sectional between-partner correlations at T1, we did not explicitly study selection effects. Future examination of similarities in HED between partners at the beginning of relationships may shed light on the contribution of partner selection. Furthermore, our study only examined couples that remained together for the duration of the study. Future research should investigate the impact of relationship termination on the HED of each member of the former couple. Monitoring these changes would provide additional insight into partner influence.

Additionally, our study did not investigate the influence of possible life circumstances (e.g., relationship conflict) on HED, or examine the processes underlying short-term patterns of partner influence. Future research might use a daily diary method to provide insight into such processes and contributors on a day-to-day basis. Moreover, as our sample consisted solely of heterosexual couples, it is unclear how partner influence manifests in homosexual couples. Future research should test the PINH in a sample of homosexual couples. Finally, because patterns of drinking differ across cultures and locations, our findings might be culture-specific (Sudhinaraset, Wigglesworth, & Takeuchi, 2016).

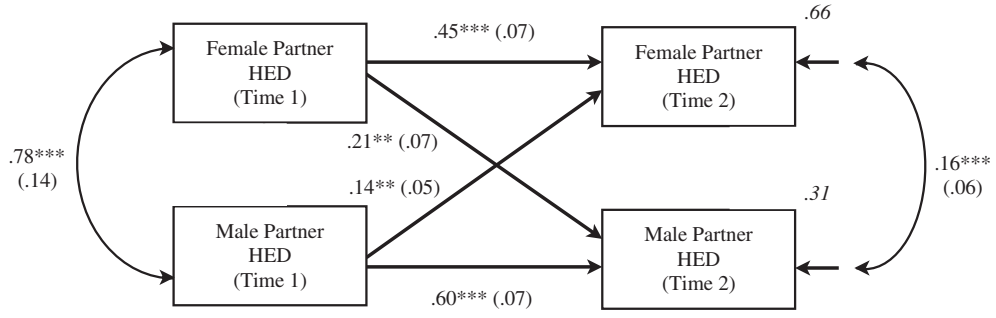

Fig. 1. APIM testing the partner influence hypothesis. Rectangles represent measured variables. Double-headed arrows represent covariances. Single-headed arrows represent direct effects. Unstandardized path coefficients appear with standard errors in parentheses. Italicized numbers (e.g., 0.66) appearing in the upper right hand of Time 2 variables represent the proportion of variance accounted for by Time 1 variables. HED = Heavy episodic drinking. ** $p < 0.01$. *** $p < 0.001$. Consistent with recommendations in Kenny and Ledermann (2010), unstandardized coefficients are presented. Standardizing the regression coefficients within men and women would result in a loss of an equivalent metric, making comparisons of actor and partner effects between men and women impossible.

5. Conclusion

Our study provides a strict test of the PINH. Using a two-wave, three-year longitudinal design, we found that men and women influence the future HED of their partners. This partner influence was found in couples in longer-term, serious romantic relationships. Our study provides further evidence that HED can be, at least in part, a couples' issue.

Author disclosure

Role of funding sources

Funding sources did not have a role in the study design, collection, analysis or interpretation of the data, writing the manuscript, or the decision to submit the paper for publication.

Contributors

Aislin Musquash and Danielle Molnar conducted the statistical analysis, wrote the results section and were involved in revising the manuscript. Sara Bartel was involved in statistical analysis, wrote the first draft of the manuscript and implemented revisions. Simon Sherry and Sherry Stewart were involved in data analysis, writing and revising the manuscript and supervising the first author. Gordon Flett contributed to data collection on wave 2 of the data set and was involved in writing and revising the manuscript. Kenneth Leonard was involved in writing and revising the manuscript.

Conflict of interest

All authors declare that they have no conflicts of interest.

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