HHS Public Access

Author manuscript

J Interpers Violence. Author manuscript; available in PMC 2018 April 09.

Published in final edited form as:

J Interpers Violence. 2016 March ; 31(5): 755–773. doi:10.1177/0886260514556761.

Moderating Effect of Negative Peer Group Climate on the Relation Between Men's Locus of Control and Aggression Toward Intimate Partners

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Abstract

The present study sought to examine the interactive effects of an external locus of control and interaction in a negative peer group climate on men's perpetration of physical aggression and infliction of injury toward their female intimate partners. Participants were 206 heterosexual males recruited from the metro-Atlanta community who completed self-report measures of external locus of control, involvement in a negative peer group climate, and physical aggression and infliction of injury against intimate partners during the past 12 months. Negative peer group climate was conceptualized as a peer group that displays behavior which may instigate aggressive norms, attitudes, and behaviors. Results indicated that men with an external locus of control were more likely to perpetrate physical aggression toward and inflict injury on their intimate partners if they reported high, but not low, involvement in a negative peer group climate. These results extend current research suggesting external locus of control as a risk factor for intimate partner aggression by highlighting the impact of negative peer groups. Implications and future intervention research are discussed.

Keywords

intimate partner aggression; external locus of control; negative peer group climate

Over the past 30 years, physical intimate partner aggression (IPA) has been recognized as a serious public health issue. Copious research evidence continues to document alarmingly high rates of all forms of IPA within the United States (Black et al., 2011). Despite apparent similarities between men and women in the prevalence of some forms of IPA (Straus, 2011), female victims of male-perpetrated IPA experience the majority of deleterious mental and physical effects (Archer, 2000; Caldwell, Swan, & Woodbrown, 2012). Indeed, women are more likely than men to become injured, experience feelings of fear regarding their safety,

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Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

and have symptoms of posttraumatic stress disorder (Black et al., 2011; Caldwell et al., 2012). Furthermore, men are nearly 3 times more likely than women to kill their partners (Hamby, 2005). Thus, a continued and serious need remains to understand male-perpetrated IPA.

To address this need, multivariate models are necessary to explain the complex etiology of IPA. In particular, research has highlighted the need to examine risk factors across multiple ecological levels to more fully understand the etiology of men's aggression toward their female partners and inform intervention (Heise, 1998; O'Leary, Smith Slep, & O'Leary, 2007). For instance, the public health impact of peer-level prevention strategies could be enhanced by elucidating how individual-and peer-level variables interact to facilitate IPA. To this end, the purpose of the present investigation was to address this need by investigating a theoretically informed interaction between personal (i.e., external locus of control) and peer-level (i.e., negative peer climate) risk factors.

Locus of Control

One cognitive variable pertinent to the perpetration of general aggression is locus of control (Halloran, Doumas, John, & Margolin, 1999; Österman et al., 1999). Although the majority of research in this area investigates the impact of an external locus of control on general aggression, it may also be an important consideration for aggression directed toward an intimate partner. Originally conceptualized by Rotter (1966), locus of control has been defined as the degree to which individuals believe their lives are controlled by external factors (e.g., luck, fate, others) relative to internal factors (e.g., personal characteristics). In particular, individuals with an external locus of control are characterized as yielding to external pressures (e.g., influence of others, societal or group-level norms), allocating responsibility for their outcomes to others, and disregarding personal values to resist social rejection (Cox & Luhrs, 1978; Halloran et al., 1999). An external locus of control has been associated with a variety of maladaptive psychological effects including increased general aggression and depression (P. A. Aiken & Baucom, 1982; Wallace, Barry, Zeigler-Hill, & Green, 2012). In addition, within the context of marital relationships, individuals with an external locus of control report less marital satisfaction compared with individuals with an internal locus of control (Miller, Lefcourt, Holmes, Ware, & Saleh, 1986). With respect to general aggressive behavior, pertinent theory suggests that individuals with an external locus of control are especially prone to perceive events as out of their control, and consequently use aggression within these situations to regain control (Hall, 2006).

Gallagher and Parrott (2010) expanded this line of research to IPA and found that individuals with an external locus of control reported perpetrating a higher frequency of aggressive behaviors toward their partners compared with those with an internal locus of control. Consistent with Hall (2006), they concluded that men with an external, relative to an internal, locus of control were more likely to perceive a lack of control within their relationships and thus use aggression to reestablish control over their female partners. These findings suggest that men with an external locus of control are at risk of perpetrating IPA.

Peer Group Climate

Peer group climate provides a contextual framework for understanding environments that may instigate aggressive norms, attitudes, and behaviors. Peer groups often provide members with a valuable support system, including increased overall well-being and health (van der Horst & Coffé, 2012), and can also help to promote positive attitudes toward women. For instance, research has shown that men who interact with a tightly knit peer group that is perceived to be low in the endorsement of aggression toward women report low levels of hostility toward women (Swartout, 2013). These findings suggest that peer groups can serve as protective buffers against aggression toward women for individual members. However, in some cases, peer groups have been found to instigate and perpetuate a number of malicious behaviors and attitudes (O'Leary et al., 2007). According to the male peer support theory (Schwartz & DeKeseredy, 1997), men who experience intimate partner conflict look to their friends for advice and support. If a man interacts in a peer group that values aggression as a way to maintain power, then the group will encourage the use of aggression to address the current or future conflict.

Consistent with this view, perceived social support from aggressive and nonaggressive peer groups has been identified as a risk factor and a protective factor, respectively, for dating violence perpetration among adolescents (Levendosky, Huth-Bocks, & Semel, 2002). Specifically, this study found that perceived social support was a risk factor among adolescents who reported a family history of domestic violence, presumably because they were more likely to interact with aggressive peers. In contrast, perceived social support was a protective factor among adolescents who denied a family history of domestic violence, presumably because they were more likely to interact with nonaggressive peers. Indeed, studies indicate that peer support for aggression toward women is positively associated with sexual aggression toward women (e.g., Franklin, Bouffard, & Pratt, 2012) and IPA (e.g., Silverman & Williamson, 1997). Consistent with this hypothesis, Rosen, Kaminski, Parmley, Knudson, and Fancher (2003) concluded that it is the aggressive and misogynistic content of men's social support, rather than the support itself, that encourages IPA.

Theoretical Integration

The reviewed literature may be integrated within the framework of the general aggression model (Anderson & Bushman, 2002), which was recently expanded to incorporate individual and situational characteristics specific to understanding the perpetration of IPA (DeWall, Anderson, & Bushman, 2011). According to the model, individuals who possess risk factors that directly compromise proposed mechanisms of aggression (i.e., affect, hostile cognition, arousal, appraisal, and decision making processes) are more likely to respond to intimate partner conflict with aggressive behavior. Of relevance here, individuals with an external locus of control who are faced with intimate partner conflict are especially likely to perceive a lack of control in their relationship, blame their partner, and ignore internal values when evaluating conflict resolution options. Within the model, these tendencies could elicit aggression-promoting cognitions as well as decrease one's capacity to reappraise conflict situations, consider the negative ramifications of one's actions, and control aggressive impulses. As a result, these individuals may be more likely to perpetrate IPA.

However, not all men with external locus of control invariably succumb to aggressive urges during conflict. Interacting with an aggressive or nonaggressive peer group may help explain why some men act aggressively during conflict while others do not. In accordance with male peer support theory (Schwartz & DeKeseredy, 1997), men with an external locus of control who also interact with an aggressive peer group may be at particularly high risk of IPA because they are likely to yield to external peer pressure that promotes aggressive behavior. Conforming to peer norms and pressure is likely reinforced by the group, thereby perpetuating and engraining that behavior across multiple contexts, including intimate relationships. In contrast, and consistent with Swartout's (2013) findings, the proposed relation between an external locus of control and IPA may be attenuated among men who interact with less negative (or more prosocial) peer groups.

Present Study

The present study assessed men's involvement in a negative peer group climate as a potential moderator for the relationship between external locus of control and their perpetration of physical aggression and infliction of injury toward their female partners. In line with previous research, an external, relative to an internal, locus of control was expected to be positively associated with men's perpetration of both physical aggression and infliction of injury toward their female partners. Furthermore, we hypothesized that men's involvement in a negative peer group climate would moderate this effect. Specifically, it was expected that an external locus of control would be associated with greater frequency of IPA and more victim injury among individuals who reported high, relative to low involvement in a negative peer group.

Method

Participants

The distinct set of hypotheses tested herein utilized data that were drawn from a larger investigation on the effects of alcohol on aggression. Thus, although the focus of the present investigation did not examine alcohol-related effects, all participants who presented to the laboratory reported consuming alcohol on at least one occasion during the past year.

Males (n = 261) between the ages of 21 and 35 were recruited from the metro-Atlanta community through both Internet and local-area newspaper advertisements for a study on "alcohol and behavior." Respondents were initially screened by telephone to confirm self-reported alcohol consumption during the past year; nondrinkers were excluded. Upon arrival to the laboratory, 9 participants did not self-identify as heterosexual, 44 reported that they had not been in an intimate relationship during the past year, and 2 did not complete the questionnaire battery in its entirety. This left a final sample of 206 men with a mean age of 25.03 years (SD = 3.36). The racial composition of this sample consisted of 129 African Americans, 55 Caucasians, and 22 men who identified with another racial description. In all, 171 of the participants were never married and the sample had an average of 14.1 years of education (SD = 2.38). The sample also had a mean yearly household income of US$21,711 ($SD$ = US$16,995). This study was approved by the university's Institutional Review Board.

Measures

Belief in Personal Control Scale (Berrenberg, 1987)—This 45-item Likert-type scale is a multidimensional measure of perceived control. For the purposes of the present study, only the 19-item General External Control subscale, which specifically assesses locus of control, was analyzed. An internal locus of control reflects participants' belief that their outcomes are the result of internal factors (e.g., self-induced, personal characteristics), whereas an external locus of control reflects participants' belief that their outcomes are the result of external factors (e.g., luck, fate, others' behavior). Participants rate each item (e.g., "I am not really in control of the outcomes in my life" and "My behavior is dictated by the demands of society") on a scale from 1 (*always true*) to 5 (*never true*), with lower scores indicative of a greater external locus of control, and higher scores indicative of greater internal control. Berrenberg (1987) reported excellent construct validity and internal consistency with this measure. An alpha reliability for this subscale of .79 was obtained.

Peer Climate Inventory—This Likert-type scale was adapted from the Peer Relations Inventory (PRI; Wolfe, Grasley, & Wekerle, 1994; Wolfe, Wekerle, Reitzel-Jaffe, & Lefebvre, 1998) and used to assess participants' involvement in a negative peer group. The original PRI is a 24-item measure designed to examine positive and negative peer relations among youth. Each item describes a different type of peer behavior consistent with one of the three subscales: a 14-item Positive Peer Behavior subscale (e.g., "The group of people I hang out with are willing to compromise"), a 3-item Jokes/Harassment subscale (e.g., "The group of people I hang out with tell jokes about girls or women"), and a 7-item Aggression subscale (e.g., "The group of people I hang out with hit someone they are seeing or going out with"). Responses range from 0 (*none of them*) to 4 (*most of them*) and are reverse coded on the Positive Peer Behavior subscale (i.e., higher scores reflective of negative peer behavior). Strong internal consistencies across these scales are indicated by Cronbach alpha coefficients of .86, .81, and .77, respectively.

The present study used a 20-item version of the PRI. For comparison purposes to the original scale, an exploratory factor analysis using maximum likelihood extraction with promax rotation was conducted. In addition to specifying retention of factors with eigenvalues greater than 1, inspection of the scree plot yielded a three-factor solution, which accounted for 45.66% of the variance. Consistent with the original scale, these three factors reflected positive behavior, offensive jokes/harassment, and aggression. Although each subscale provides unique information regarding peer behavior and norms, peer groups can create an environment that instigates aggressive norms, attitudes, and behaviors via engagement in any of the behaviors reflected by the three subscales. Thus, negative peer climate was operationalized by a total score, in which higher scores reflect greater involvement in a negative peer climate. In the present sample, alpha reliability for the full scale was .84.

Revised Conflict Tactics Scale (CTS-2)—The CTS-2 (Straus, Hamby, Bony-McCoy, & Sugarman, 1996) is 78-item self-report instrument that measures a range of behaviors used to deal with conflict within intimate relationships. Participants are asked to report the frequency with which they engage in each behavior on a scale from 0 (*never*) to 6 (*more than*

20 times). Although the full scale was administered, only the 12-item physical aggression and 6-item injury subscales were used to measure participants' perpetration of physical aggression and infliction of injury toward their intimate partner(s), respectively, during the past year. Following Straus and colleagues (1996), a chronicity variable for physical aggression and injury was computed by adding the midpoints of the score range for each item to form total scores. Thus, if a participant indicated a response of "3–5" times in the past year, his score would be a "4."

Buss–Perry Aggression Questionnaire (Buss & Perry, 1992)—This 29-item self-report measure assesses dispositional tendencies toward physical aggression, verbal aggression, anger, and hostility. Items are scored on a 5-point Likert-type scale, ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). The Physical Aggression subscale specifically reflects one's tendency to display physical aggression across situations and is commonly used as a measure of an aggressive personality. Because an aggressive personality may facilitate selection of aggressive peers, this subscale score was included as a covariate in all analyses. Total scores on the Physical Aggression subscale range from 9 to 45, with higher scores corresponding to higher levels of trait aggressivity. Buss and Perry (1992) report an alpha coefficient of .85, which was consistent with the present sample ($\alpha = .77$).

Procedure

Upon arrival to the laboratory, participants were met by a researcher and led to a private room. After obtaining informed consent, participants were asked to complete a questionnaire battery including a demographic form, the Belief in Personal Control Scale, the Peer Climate Inventory, the CTS-2, and the Buss–Perry Aggression Questionnaire on a computer using MediaLab 2000 software (Jarvis, 2006). Additional questionnaires were also completed but are unrelated to the present study and are not reported here. The experimenter provided instructions on how to operate the computer program that administered the questionnaire battery and was available to answer any questions during the session. Upon completion, participants were debriefed and given payment for their time spent in the study.

Results

Descriptive Statistics

Descriptive statistics and bivariate correlations are displayed in Table 1. These data demonstrated a significant negative association between peer group climate and locus of control. This indicated that men with an external locus of control were more likely to interact with a negative peer group. Computation of the variance inflation factor (VIF) and tolerance confirmed that multicollinearity was not an issue in these data (i.e., VIF < 10; tolerance > .10). Preliminary analyses were also conducted to assess whether pertinent demographic variables (i.e., age, race, and years of education) significantly covaried with predictor, moderator, or dependent variables. Significant associations emerged between age and negative peer group climate ($r = -.16$, $p = .026$), years of education and injury ($r = -.25$, $p < .001$), and years of education and physical aggression ($r = -.22$, $p = .002$). Significant associations were also detected between external locus of control and physical aggression (r

= −.23, $p < .001$), and injury ($r = -.16$, $p = .02$). As such, these variables were included as covariates in subsequent analyses.

Regression Analysis

Linear regression analyses were utilized to test for moderation (L. S. Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003). An interaction term was calculated by obtaining the cross-product of the mean-centered locus of control and peer group climate variables. Two separate hierarchical multiple regression analyses were conducted to evaluate the independent and interactive effects of locus of control and peer group climate on (a) physical aggression toward intimate partners and (b) infliction of injury toward intimate partners. For each hierarchical analysis, aggressive personality, age, and years of education were entered in Step 1, main effects for locus of control and peer group climate were entered in Step 2, and the Locus of control × Peer group climate interaction term was entered in Step 3. This resulted in two full models, each comprising six variables. Results of all regression models are reported in Tables 2 and 3. To explicate significant interaction terms, regression coefficients for simple effects were examined to determine whether they were significantly different from zero.

Effects of Locus of Control and Peer Group Climate on Physical Aggression

In Step 2, the regression model for physical aggression was significant, $F(5, 200) = 6.704$, $p < .001$; $R^2 = .14$. The main effect of locus of control was marginally significant ($\beta = -.13$, $p = .064$). Although this finding was not significant, it suggested that an external locus of control was associated with more frequent perpetration of physical aggression. The main effect for peer group climate was significant ($\beta = .22$, $p = .007$), indicating that men who interacted in a negative peer group also reported more frequent perpetration of physical aggression.

In Step 3, the regression model was significant, $F(6, 199) = 6.32$, $p < .001$; $R^2 = .16$. The interaction effect between locus of control and peer group climate was also significant ($b = -.01$, $SE = 0.007$, $p = .049$). Explication of this interaction was consistent with hypotheses and evidenced that the association between locus of control and physical aggression was significant and negative for men who endorsed high involvement in an negative peer group ($\beta = -.27$, $p = .007$) relative to low involvement in a negative peer group ($\beta = -.01$, $p = .874$).[1] As can been seen in Figure 1, these data suggested that the combination of an external locus of control and involvement in a negative peer group resulted in the highest frequencies of physical aggression.

Effects of Locus of Control and Peer Group Climate on Injury

In Step 2, the regression model was significant, $F(5, 200) = 4.83$, $p < .001$; $R^2 = .09$. The main effect of peer group climate was significant ($\beta = .18$, $p = .036$), indicating that men involved in a negative peer group also reported that their aggression resulted in more frequent injuries in their intimate partners.

[1]Intimate partner violence variables (i.e., physical aggression, injury) tend to have an inherent positive skew by nature. Analyses conducted with transformed variables did not indicate a significant change in the pattern of results.

In Step 3, the regression model was significant, $F(6, 199) = 5.10$, $p < .001$; $R^2 = .11$. The interaction effect between locus of control and peer group climate was also significant ($b = -.01$, $SE = 0.003$, $p = .017$). Explication of this interaction evidenced a significant negative association between locus of control and infliction of injury for men who endorsed high involvement in a negative peer group ($\beta = -.28$, $p = .006$) relative to low involvement in a negative peer group ($\beta = .04$, $p = .695$). As can been seen in Figure 1, these data suggested that the combination of an external locus of control and involvement in a negative peer group resulted in the highest frequencies of injury inflicted toward intimate partners.

Discussion

The present study examined men's involvement in a negative peer group climate as a moderator of the relationship between external locus of control and the perpetration of IPA. Consistent with hypotheses, our findings indicate that men who endorsed an external, relative to internal, locus of control perpetrated a higher frequency of physically aggressive and injurious acts toward their female intimate partners. Furthermore, men's involvement in a negative peer group moderated this effect. Specifically, our findings evidence that individuals who endorsed an external locus of control reported a higher frequency of physical aggression and injury if they also reported higher involvement in a negative peer group climate.

From a conceptual perspective, these findings are in keeping with peer support theory (Schwartz & DeKeseredy, 1997) and the purported relationship between an external locus of control and the perpetration of physical aggression and injury. Individuals with an external locus of control tend to attribute the outcomes of their behavior to situational factors or characteristics of others (Berrenberg, 1987; Rotter, 1966). Past work by Gallagher and Parrott (2010) shows that men with an external locus of control are more likely to perpetrate IPA. This association is believed to be due to men's perception that their partner's behavior is provoking and men's attempt to regain control within their relationship. Our results are consistent with this conceptualization and indicate that men who endorsed an external locus of control are more likely to report perpetrating physical aggression and injury. However, this relation is specific to men in a negative peer group climate. In accordance with peer support theory, this finding suggests that men with external locus of control are influenced by their aggressive peer groups in a way that promotes IPA.

Our findings are also consistent with recent research that examines peer-level variables and aggression toward women. For instance, Swartout (2013) found that the density and structure of peer groups were important predictors of men's attitudes concerning violence against women. In particular, peer groups with collectively weaker attitudes in support of sexual aggression protected individual members from developing hostile masculinity. The present findings extend this work by showing that negative peer groups may exacerbate the risk for IPA among men with an external locus of control. Importantly, research suggests that aggressive individuals tend to associate with aggressive peers (e.g., Cairns, Cairns, Neckerman, Gest, & Gariépy, 1988; Rulison, Gest, & Loken, 2013). Because the present findings were detected after controlling for an aggressive personality, it appears that it is the peer group specifically, and not one's aggressive personality, that exacerbates the relation

between an external locus of control and IPA. Collectively, this evidence suggests that negative peer group norms are an important target in the prevention of IPA, particularly for men with an external locus of control.

These findings suggest that individuals with an external locus of control who are faced with intimate partner conflict are likely to use peer-based norms to guide their interpretations of and reactions to that conflict. Interpreted within the context of DeWall et al.'s (2011) expanded general aggression model, if peer-based norms are aggressive, men with an external locus of control will be more likely to experience aggression-promoting internal states. For instance, hostile cognitions regarding intimate partner conflict may include a perceived lack of control in their relationship or partner blame. However, these hypothesized mediating processes have yet to be examined. Future research is needed to establish these and other specific mediating processes, as doing so will directly establish critical points of individual-level intervention. An example of the potential impact of this approach is found in the dating violence literature. Here, studies indicate that the effectiveness of bystander intervention programs for adolescent dating violence is partly due to changes in cognitive variables such as dating violence norms and gender stereotyping (e.g., Foshee et al., 1998). Thus, identifying pertinent mediators of the present findings could similarly inform individual-or community-based intervention programs that aim to reduce aggressive behavior toward intimate partners.

Before concluding, some limitations of the present study merit discussion. First, this cross-sectional design was not able to examine the specific situational context in which IPA occurred or the extent to which men's aggression functioned to demonstrate adherence to their peer groups' negative norms. Thus, the context and function of men's aggression in the present study is unclear. Future research would benefit from the use of event-based assessment methods that better allow for the assessment of situational contexts that precede episodes of IPA. Data derived from such methods could have important implications for prevention and intervention. Relatedly, research designs would be strengthened by the use of IPA assessment methods that expand beyond participant self-report (e.g., partner self-report) or include laboratory-based experimental designs in which aggressive behavior can be directly observed (e.g., Watkins, DiLillo, Hoffman, & Templin, 2015). Second, it is unclear whether these findings generalize to men who perpetrate severe acts of IPA (e.g., clinical and/or adjudicated samples). For instance, research suggests that some men use more severe forms of aggression as a tactic to control their intimate partners, and their victims suffer correspondingly more severe mental and physical health consequences (Johnson & Leone, 2005). Establishing the boundaries of the present findings is critical to future intervention programming.

Third, the duration of participants' intimate relationship was not assessed. Research suggests that longer intimate partnerships are more likely to involve IPA (Brown & Bulanda, 2008), likely due to greater exposure to the risk of violence among couples who have been together for a longer period of time. Thus, future research would benefit from examining relationship length as a possible moderator of the present findings. Fourth, the present sample was drawn from a larger investigation in which all participants reported consuming at least one alcoholic beverage in the past year. Although this criterion excluded a subsample of

nondrinking men, the National Institute on Alcohol Abuse and Alcoholism reports that approximately 72% of young adult men report consuming alcohol at least once in the past year (Chen et al., 2006), suggesting that this level of alcohol consumption is relatively normative among men. Thus, the generalizability of these findings to other men nationally does not appear to be adversely impacted by this drinking criterion. Finally, regression models accounted for only 8% and 12% of the variance in injury and physical aggression, respectively. It is clear there are myriad risk factors for IPA across multiple levels of the social ecology, including social (e.g., family income, perceived social support), relationship (e.g., relationship satisfaction, jealousy), and individual variables (e.g., anger, impulsivity). Although exceptions exist (e.g., O'Leary et al., 2007), few studies have comprehensively accounted for these variables. Such studies would likely explain significantly more variance in IPA.

The present study provides evidence for the role of external locus of control and negative peer group climate on IPA. However, more research is needed to evaluate these variables within a broader, social ecological risk context as well as to uncover the mechanism by which negative peer climate and locus of control jointly facilitate IPA. Such findings could have important clinical and public health prevention implications aimed at targeting men's peer environments to reduce aggressive behavior toward intimate partners.

Acknowledgments

Funding

The author(s) disclosed receipt of the following financial support for the research and/ or authorship of this article: This research was supported by a joint grant by the Centers for Disease Control and Georgia State University to Dominic J. Parrott and Andra T. Tharp. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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Dominic J. Parrott, PhD, is an associate professor of psychology (clinical) at Georgia State University. His research uses laboratory and survey methods to examine risk factors and mechanisms for aggression perpetration, with a particular emphasis on the effects of alcohol on intimate partner violence, aggression toward sexual minorities, and sexual aggression. An end goal of his research program is to inform directly the development of interventions that prevent or reduce alcohol-related violence.

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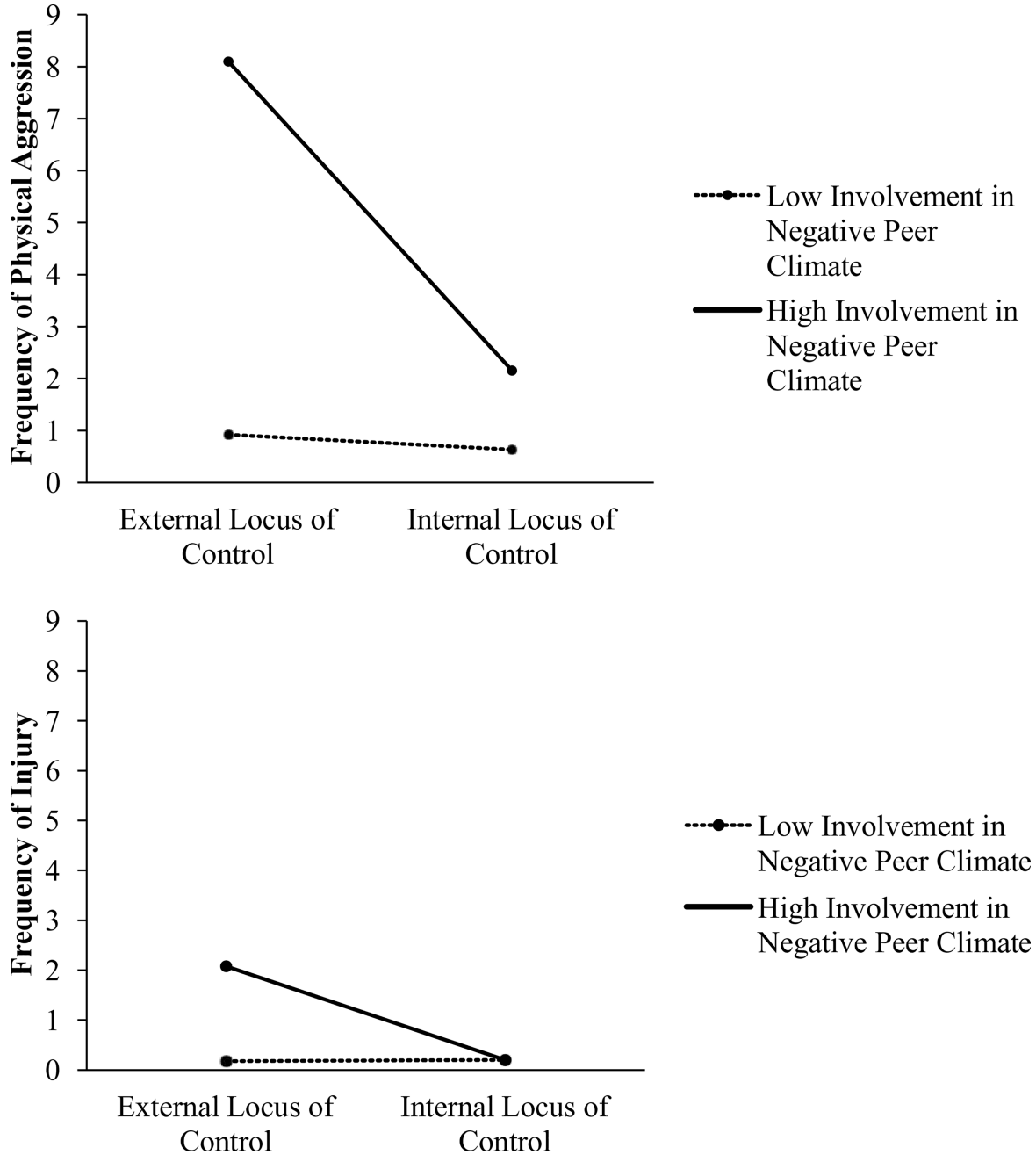

Figure 1.
The effect of negative peer group climate on external locus of control and frequency of physical aggression (top panel) and infliction of injury (bottom panel).

Table 1

Descriptive Statistics and Correlations for Study Variables.

	Descriptives			Correlations				
Variable	***M***	***SD***	**Range**	**1.**	**2.**	**3.**	**4.**	**5.**
1. Locus of control	68.72	9.06	41–89	—				
2. Peer group climate	24.08	9.77	3–49	−.317**	—			
3. Physical aggression	3.40	9.88	0–69	−.225**	.285**	—		
4. Infliction of injury	0.68	3.77	0–30	−.161*	.177*	.695**	—	
5. Aggressive personality	21.82	6.26	10–42	−.057	.430**	.136*	.041	—

Note. $n = 206$. Possible scale range for Locus of Control = 19–95, possible scale range for Peer Group Climate = 0–80, possible scale range for Physical Aggression = 0–240, possible scale range for Injury = 0–120, possible scale range for Aggressive Personality = 9–45.

* $p < .05$.

** $p < .01$.

Table 2

Summary of Regression Analyses for the Associations Between Locus of Control, Peer Group Climate, and Perpetration of Physical Aggression.

Variables	*b*	β	*t*	*p*
Step 1				
Age	−.130	−.044	−0.652	.515
Years of education	−.910	−.209	−3.096	.002
Aggressive personality	.123	.199	2.944	.004
Step 2				
Age	−.039	−.013	−0.200	.842
Years of education	−.888	−.204	−3.095	.002
Aggressive personality	.019	.031	0.377	.707
External locus of control	−.142	−.131	−1.860	.064
Peer group climate	.226	.223	2.720	.007
Step 3				
Age	−.025	−.009	−0.130	.897
Years of education	−.839	−.193	−2.935	.004
Aggressive personality	.011	.019	0.228	.820
Locus of control	−.153	−.140	−2.005	.046
Peer group climate	.218	.215	2.636	.009
External Locus of Control × Peer Group Climate	−.014	−.130	−1.978	.049

Table 3

Summary of Regression Analyses for the Associations Between Locus of Control, Peer Group Climate, and Infliction of Injury.

Variables	*b*	β	*t*	*p*
Step 1				
Age	−.053	−.048	−0.697	.487
Years of education	−.424	−.255	−3.748	<.001
Aggressive personality	.017	.070	1.025	.307
Step 2				
Age	−.026	−.023	−0.338	.736
Years of education	−.417	−.251	−3.732	<.001
Aggressive personality	−.015	−.065	−0.775	.439
External locus of control	−.045	−.108	−1.504	.134
Peer group climate	.068	.177	2.108	.036
Step 3				
Age	−.019	−.017	−0.254	.799
Years of education	−.394	−.237	−3.554	<.001
Aggressive personality	−.019	−.080	−0.966	.335
Locus of control	−.050	−.120	−1.685	.094
Peer group climate	.064	.167	2.008	.046
External locus of control × Peer group climate	−.007	−.162	−2.416	.017