
Relational Aggression in Women during Emerging Adulthood: A Social Process Model

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Two studies investigated potential mediators of the association between relational victimization and relational aggression. Self-report measures of aggressive behavior among peers, exclusivity, hostile attribution biases, and borderline personality disorder (BPD) symptoms were collected. In study 1, participants were 180 female emerging adults ($M=18.82$, $SD=1.18$). Both exclusivity and hostile attribution biases for relational provocations were found to partially mediate the association between relational victimization and relational aggression. In study 2, participants were 54 female emerging adults ($M=19.16$, $SD=1.11$). Symptoms of BPD were not found to mediate the association between relational victimization and relational aggression, yet unique associations with relational aggression were observed. The results add to recent research guided by a social process model in which links between victimization and aggression are more clearly understood. Copyright © 2011 John Wiley & Sons, Ltd.

The study of aggression among women has increased in recent years given the adoption of a conceptualization that recognizes that aggression may manifest in different ways depending on gender. That is, the modal subtypes of aggression for boys and men across development appear to be physical in nature (e.g., hitting, pushing, kicking); whereas, the most frequently observed/reported aggressive behavior for girls and women is relational aggression, which is defined as using the relationship or threat of the removal of the relationship as the means of harm (Crick & Grotpeter, 1995; Putallaz et al., 2007). Relational aggression includes a diverse set of direct and indirect behaviors but includes social exclusion and threats of friendship withdrawal as well as giving the “silent treatment” and spreading malicious rumors, gossip, or lies about others (Crick & Grotpeter, 1995). Both forms of aggression (i.e., physical and relational) are associated with maladaptive outcomes but it also appears that gender moderates those associations, such that relational aggression is associated with more indices of psychopathology and adjustment problems (e.g., depressive symptoms, eating pathology, and personality disorder symptomatology) for women than for men (Ostrov & Houston, 2008; Werner & Crick, 1999). To date, the field has a limited understanding of the correlates, adjustment problems, and developmental processes associated with relational aggression in developmental periods beyond adolescence (cf. Linder, Crick, & Collins, 2002; Loudin, Loukas, & Robinson, 2003; Murray-Close, 2011; Murray-Close, Ostrov, Nelson, Crick, & Coccaro, 2010). The present studies were designed to address this gap by testing theoretically informed empirical questions

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concerning the associations between peer victimization (i.e., the receipt of peer-based aggression), social cognitions, personality pathology, and relational aggression in women during emerging adulthood (i.e., ages 18–25 years; Arnett, 2000). Importantly, in the present article the focus is exclusively on the peer or friendship context and not romantic partner violence or aggression (see Linder *et al.*, 2002; Murray-Close, 2011; Murray-Close *et al.*, 2010).

In keeping with a social process model, developmental theorists have posited that peer victimization and aggression may be linked in fundamental ways across development (Boivin & Hymel, 1997). Specifically, Hanish and Guerra (2002) proposed that peer victimization is a risk factor for subsequent adjustment issues (e.g., aggression) because individuals who are victimized by peers may have limited socialization opportunities. Moreover, Rose and Rudolph (2006) theorized that greater exposure to peer victimization may contribute to an individuals' vulnerability to aggression. Yeung and Leadbeater (2007) suggested that victims may retaliate with aggression in order to avoid further attacks or to harm the original aggressor. Ostrov (2010) supported these theoretical assertions and also found prospective evidence for the specificity hypothesis of aggression with regard to the form of the behavior. That is, relational victimization (i.e., the receipt of relational aggression) only predicted increases in relational aggression and physical victimization (i.e., the receipt of physical aggression) only predicted increases in physical aggression (Ostrov, 2010). Moreover, both direct and indirect pathways between peer victimization and aggression are conceivable (see Boivin & Hymel, 1997). That is, peer rejection has been found to mediate the association between aggression and peer victimization (Hanish & Guerra, 2002; Ostrov, 2008). It is theorized that various peer and/or social cognitive factors may facilitate the acquisition of aggressive schemas and potential behavioral responses and increase the probability of engaging in aggressive acts with peers (Crick & Dodge, 1994). In addition, these processes are theorized to be gender-linked, with relationship slights and relational contexts serving as greater risk for the activation of these attributions and display of aggressive behavior for women compared with men (Ostrov & Godleski, 2010). Therefore, the present studies examine several additional mediators of the association between relational victimization and aggression in women: hostile attribution biases for relational or instrumental provocations, exclusivity within peer relationships, and BPD symptoms.

RELATIONAL AGGRESSION/VICTIMIZATION AND HOSTILE ATTRIBUTION BIASES

A social cognitive construct that has been theoretically and empirically linked to the display of aggressive behavior is hostile attribution biases. Hostile attribution biases may be operationally defined as over-attributing hostile intent to peers' behaviors, even in situations where hostile attribution is not warranted, such as when the actual intent is benign in nature or the situation is ambiguous (Dodge, 1980). The majority of the research conducted with hostile attribution biases has focused on instrumental provocation situations based on physical aggression and has been studied primarily in males (for a review, see Orobio de Castro, Veerman, Koops, Bosch, & Monsouwer, 2002). Thus, there has been relatively less research on hostile attribution biases for relational provocations, such as possible relationship slights or conflicts (Bailey & Ostrov, 2008; Crain, Finch, & Foster, 2005; Crick, 1995; Crick, Grotpeter, & Bigbee,

2002; Godleski & Ostrov, 2010; Yeung & Leadbeater, 2007). In seminal research done by Crick and colleagues (Crick, 1995; Crick et al., 2002), ambiguous relationship conflicts were used to investigate underlying hostile interpretation of cues concerning social relationships. Crick (1995) demonstrated that relationally aggressive children report significantly more distress and perception of hostility in relation to these relationship conflict provocations (cf. Crain et al., 2005; Godleski & Ostrov, 2010). In emerging adulthood, Bailey and Ostrov (2008) found that hostile attribution biases for relational provocations were uniquely associated with relational aggression. These findings suggest the importance of investigating the role of social cognition in relationally aggressive behavior and considering gender-linked activation of these processes.

Research has also been conducted on the relation between peer victimization and hostile attribution biases (Hoglund & Leadbeater, 2007). For example, in a study conducted in middle childhood, Yeung and Leadbeater (2007) found that hostile attribution biases for relational provocations partially mediated the concurrent relation between relational victimization and relational aggression in middle childhood. These authors justified the mediation model adopted for the present study by theorizing that relationally victimized individuals may believe that they are victims of peers' relational provocations and interpret ambiguous behaviors as intentional, and therefore respond with relationally aggressive behavior. Therefore, it was anticipated that hostile attribution biases for relational provocations would also mediate the relation between relational victimization and aggression during emerging adulthood.

RELATIONAL AGGRESSION AND EXCLUSIVITY

Past research has shown an association between relationally aggressive relationships and exclusivity (Banny, Helibron, Ames, & Prinstein, 2011; Kawabata, Crick, & Hamaguchi, 2010). Whether exclusivity and intimacy within friendships have negative or positive consequences has been debated (Cleary, Ray, LoBello, & Zachar, 2002; Rose, Swenson, & Carlson, 2004; Sebanc, 2003). Grottpeter and Crick (1996) found that those children engaging in relationally aggressive behavior were more likely to have exclusive and intimate relationships and it is likely that this exclusivity promotes relational aggression especially within the dyad (Grottpeter & Crick, 1996). This exclusivity is to be expected because relational aggression involves secret sharing, which can then be used as leverage to keep this intimacy, and thus exclusivity, within a friendship (Murray-Close, Ostrov, & Crick, 2007). Because relationally aggressive children place a great deal of importance on preserving their relationships, exclusivity within the relationship and exclusion of other interlopers are often necessary in order to keep these relationships close and intimate (Banny et al., 2011; Grottpeter & Crick, 1996). Further, it is proposed that those women who are relationally victimized by peers may be more prone to have a desire for exclusivity in friendships due to feelings of loneliness or rejection by other peers, which is often associated with peer victimization (Buhs & Ladd, 2001). Relational aggression is related to both positive and negative relationship features; however, exclusivity, although it provides feelings of worth in relationships, has more associations with negative friendship qualities (Cleary et al., 2002; Sebanc, 2003). Exclusivity within peer relationships seems to be more specific to girls and women because they tend to place more emphasis on dyadic friendships and relationship construals than boys and men, and thus they may use manipulative

behaviors to feel included in both group and dyadic situations (Crick & Zahn-Waxler, 2003; Cross & Madsen, 1997; Pronk & Zimmer-Gembeck, 2010). These manipulative behaviors and desire for exclusivity may then be associated with maladaptive outcomes. For example, Crick, Murray-Close, and Woods (2005) found that exclusivity in friendships can be an early risk factor for BPD features in early adolescence.

RELATIONAL AGGRESSION AND ADJUSTMENT

Associations between relational aggression and adjustment problems have been shown across various periods of development. In middle childhood, relational aggression has been associated with internalizing problems, externalizing problems, and peer rejection (Crick, 1996; Crick, Ostrov, & Werner, 2006; Murray-Close *et al.*, 2007). In adolescence, relational aggression has predicted increases in depression and anxiety (Ellis, Crooks, & Wolfe, 2009). In emerging adulthood, relational aggression has been associated with social anxiety, general anxiety, low perspective-taking ability, antisocial behavior and peer rejection (e.g., Loudin *et al.*, 2003; Miller & Lynam, 2003; Storch, Bagner, Geffken, & Baumeister, 2004; Werner & Crick, 1999). These findings suggest that relational aggression is implicated in a variety of psychosocial adjustment problems across development.

RELATIONAL AGGRESSION AND BORDERLINE PERSONALITY DISORDER

In addition to the various aforementioned adjustment problems, several other studies have revealed that relational aggression is linked to BPD features. In a longitudinal study, Crick and colleagues (2005) found that relational aggression was uniquely associated with features of BPD in middle childhood. Werner and Crick (1999) observed that relational aggression was associated with symptoms of BPD in emerging adulthood. More recent studies of emerging adulthood have shown that relational aggression is associated with symptoms of BPD while controlling for physical aggression (Ostrov & Houston, 2008; Schmeelk, Sylvers, & Lilienfeld, 2008). Given symptoms of BPD such as chronic anger and efforts to avoid abandonment (APA, 2000), individuals with BPD may be susceptible to using relational aggression as a means to express hostility and control relationships so as to avoid abandonment. Other literature suggests that individuals high on BPD symptoms tend to have angry and retaliatory reactions to social insults such as teasing (Tragesser, Lippman, Trull, & Barrett, 2008), indicating that peer victimization may lead to aggressive behavior for individuals with BPD pathology.

EMERGING ADULTHOOD

Emerging adulthood or the transitional period of development from 18 to roughly 25 years old in Western, industrialized and post-industrialized cultures that is marked by identity moratorium (i.e., exploration of career paths without commitment), an increase in risk-taking, financial dependence on caregivers, and the salience of peer and romantic relationships (Arnett, 2000) is the focus of the present study. Past work has

demonstrated that the perceived criteria that modern-day emerging adults have adopted for themselves for this developmental period have been replicated in a variety of cultures and religious contexts (Nelson, Badger, & Wu, 2004). However, emerging adulthood is not universal and about 25% of young people report that they have assumed adult responsibilities (e.g., raising children, marriage, financial independence; Arnett, 1994). Importantly, emerging adulthood represents a salient period for the development of personality traits and disorders (Johnson, Cohen, Chen, Kasen, & Brook, 2006) and relational aggression has been found to be uniquely associated with psychopathology (e.g., anxiety and depression symptoms) during this developmental period (Storch & Masia-Warner, 2004).

HYPOTHESES

Given the overall goal, there were several hypotheses that were tested in two studies. In study 1, analyses examined if exclusivity and hostile attribution biases were statistical mediators of a direct concurrent association between relational victimization and relational aggression among women in emerging adulthood. It was hypothesized that peer exclusivity would mediate the significant association between relational victimization and relational aggression, controlling for physical aggression. Next, it was hypothesized that hostile attribution biases for relational provocations would mediate the concurrent association between relational victimization and relational aggression, controlling for both physical aggression and hostile attribution biases for instrumental provocations. It was anticipated that there would be specificity in these processes such that hostile attribution biases for instrumental provocations would not significantly mediate the association between relational victimization and relational aggression, after controlling for physical aggression and hostile attribution biases for relational provocations.

Study 2 tested if BPD symptoms would act as a mediator and it was hypothesized that these personality pathology features would partially mediate the association between relational victimization and relational aggression in an independent sample of women during emerging adulthood. Further, it was anticipated that relational aggression would be uniquely associated with BPD symptoms, but physical aggression would not be associated with BPD features after controlling for relational aggression.

STUDY ONE

Method

Participants

A sample of 180 women, with a mean age of 18.82 years ($SD=1.18$; range 18–24) participated in the study. All of the participants were enrolled in an introductory psychology course at a large northeastern university and received course credit for their participation. The ethnic composition of this sample was fairly diverse: 10% African American, 9.4%, Asian, 64.4% European American, 4.4% Latino, 0.6%

multi-racial, 0.6% Native American, 0.6% from other ethnic backgrounds and 10% unknown. Data were collected during the spring semester of an academic year.

Measures

Aggression, victimization, and exclusivity. Participants completed the Self-Report of Aggression and Social Behavior Measure (SRASBM), which was developed by Morales and Crick (1998) and was first published in Linder *et al.* (2002). This 39-item measure includes six physical aggression items (e.g., “When someone makes me really angry, I push or shove the person”) and 11 relational aggression items (e.g., “I have threatened to share private information about my friends with other people in order to get them to comply with my wishes”). Four items assess relational victimization (e.g., “I have a friend who excludes me from doing things with her/him and her/his other friends when s/he is mad at me”) and four items assess exclusivity (e.g., “I get mad or upset if a friend wants to be close friends with someone else”). Due to a clerical error, only five items were available for the physical aggression subscale in study 1. Responses are given with a seven-point response scale from 1 (“not at all true”) to 7 (“very true”). Previous research has supported the reliability and construct validity of this measure (e.g., Murray-Close *et al.*, 2010; Ostrov & Houston, 2008). In the present study, internal consistency as measured by Cronbach’s α was 0.82 for relational aggression, 0.71 for physical aggression, 0.78 for relational victimization, and 0.71 for exclusivity.

Intent attributions. A revised version (Bailey & Ostrov, 2008) of a standard measure (Crick, 1995) of hypothetical-situation vignettes of socially ambiguous relational and instrumental provocation situations was used. Ambiguous relational and instrumental provocation vignettes were revised to be ecologically valid and appropriate for use with emerging adults (e.g., using more relevant stimuli than those for school-aged children, such as an MP3 player rather than a radio, and settings such as a residence hall instead of a school cafeteria or playground). Participants were asked to imagine that the events in the 10 stories were happening to them. Four stories depicted relational provocation situations focusing on potential rejection (e.g., hearing two students discuss a party to which you have not been invited). An additional four stories depicted instrumental provocation situations (e.g., a student spilling a drink over your back). Two benign stories were also included to avoid negative response biases. For each story, the participant indicated a reason for the provocation, with two options indicating hostile intent scored as 1 (such as “The student doesn’t want me to come to the party”) and two indicating benign intent scored as 0 (such as “The student was planning to invite me later”). A second question asked whether the student was trying (scored as 1) or not trying to be mean (scored as 0). Responses to both questions for their respective vignettes were added to create a score for hostile attribution biases. In prior research using emerging adults and the revised measure, Godleski, Ostrov, Houston, and Schlien (2010) reported acceptable internal consistency for instrumental provocation situations and relational provocation situations ($\alpha=0.71$ and 0.72 , respectively; see also Murray-Close, 2011 for a reliable adaptation with romantic relational provocations). In the present study, Cronbach’s α values for hostile attribution biases for relational provocations were 0.64 and 0.71 for hostile attribution biases for instrumental provocations (see Bailey & Ostrov, 2008, for further details).

Procedures

Participants were recruited through their introductory psychology course and provided written consent. The study was approved by the local institutional review board (IRB). All of the women completed pencil-and-paper questionnaires involving standard self-report measures and hypothetical situation measures in small groups. The instructions were read aloud for each group by one of the research assistants and participants took 30–40 minutes to complete the individual measures. Following the completion of the study, participants were debriefed, during which the purpose of the study was explained and they were provided a referral list for access to support services.

Results

Preliminary analyses consisted of descriptive statistics, an exploration of skew/kurtosis, and bivariate correlations. Next, a series of regression models was conducted to test for mediation, which was hypothesized as part of the first three study goals. These goals focused on the hypothesized indirect pathways from relational victimization to relational aggression via hostile attribution biases (relational and instrumental, respectively) and/or exclusivity. In each model, physical aggression was controlled. It is important to control for physical aggression given the moderate association between relational and physical aggression documented in the literature (e.g., Crick & Grotpeter, 1995) and in the present study (i.e., study 1: $r=0.48$, $p<0.001$). Mediation analyses were in keeping with Baron and Kenny (1986) and, as per MacKinnon, Lockwood, Hoffman, West, & Sheets (2002), the Sobel test was used to test for the significance of the indirect effect.

Descriptive statistics were calculated for each study variable (see Table 1). Measures of skew were <3 and kurtosis were <8 , suggesting that non-normality of the data was not a concern (Kline, 2005). Correlations between the study variables are presented in Table 1. It is important to note that relational aggression was moderately associated with relational victimization. Relational aggression was significantly associated with exclusivity. Supporting the validity of the instrument, relational aggression was significantly associated with hostile attribution biases for relational provocations, but not for instrumental provocations (see also Bailey & Ostrov, 2008). In further support of the validity of the assessments, only physical aggression was significantly associated with hostile attribution biases for instrumental provocations. Finally, both subtypes of hostile attribution biases were moderately correlated ($r=0.40$, $p<0.001$) and thus, in keeping with prior studies (e.g., Godleski & Ostrov, 2010), the influence of the other type of hostile attribution biases is controlled in the following models. The measures of hostile attribution biases were added to the study late and thus only a subsample ($n=83$) of the total sample ($N=180$) was given the hostile attribution biases measure. There are no significant differences between those who completed the measure and those who did not with respect to any of the study variables: relational aggression [$t(178)=1.84$, $p=0.067$], physical aggression [$t(178)=1.13$, $p=0.260$], or relational victimization [$t(178)=0.58$, $p=0.562$]. There was limited variability in the age of the sample and thus age was not statistically controlled, although *post-hoc* models that did control for age did not reveal any differences with the key study findings and thus the more parsimonious models are reported.

To address the first hypothesis a mediation model was run with relational victimization as the independent variable (IV), exclusivity as the mediator, and relational

Table 1. Descriptive statistics and bivariate correlations for study 1 and study 2

	1.	2.	3.	4.	5.	6.	7.	M_{study2}	SD_{study2}	$\text{Range}_{\text{study2}}$
1. HAB-R	X									
2. HAB-I	0.41**	X								
3. EXCL	0.13	-0.03	X							
4. RVICT	0.20	-0.003	0.27**	X	0.35**	-0.03	0.27*	14.38	5.92	6-28
5. RAGG	0.25*	0.05	0.50**	0.46**	X	0.46**	0.40**	24.33	9.14	11-51
6. PAGG	0.08	0.27*	0.19*	0.21**	0.48**	X	0.37**	10.69	5.91	6-27
7. BPD							X	2.94	1.72	0-7
M_{study1}	13.18	9.55	9.27	13.78	21.94	7.99				
SD_{study1}	1.72	1.60	3.68	5.80	7.73	3.57				
$\text{Range}_{\text{study1}}$	8-16	8-14	4-21	4-28	11-61	5-23				

HAB-R, hostile attribution biases for relational provocations; HAB-I, hostile attribution biases for instrumental provocations; EXCL, exclusivity; RVICT, relational victimization; RAGG, relational aggression; PAGG, physical aggression; BPD, borderline personality disorder symptoms; HAB-R, HAB-I and EXCL were included only in study 1 and BPD only in study 2.

Note that study 1 is below the diagonal and study 2 is above the diagonal; * $p < 0.05$; ** $p < 0.01$.

aggression as the dependent variable (DV). First, relational victimization was associated with relational aggression, controlling for physical aggression [$F(2, 177) = 50.30$, $p < 0.001$, $R^2 = 0.36$]. Second, relational victimization was associated with exclusivity in peer relationships [$F(2, 177) = 8.87$, $p < 0.001$, $R^2 = 0.09$]. Third, exclusivity significantly predicted relational aggression, controlling for relational victimization [$\Delta F(1, 176) = 38.77$, $p < 0.001$, $\Delta R^2 = 0.12$]. Fourth, there was a drop in magnitude of the association between relational victimization and aggression from 0.371 to 0.285 and the Sobel test revealed that the indirect effect was significant ($z = 2.88$, $p = 0.004$). Thus, supporting the indirect hypothesis, peer exclusivity partially mediated the association between relational victimization and aggression (see Figure 1).

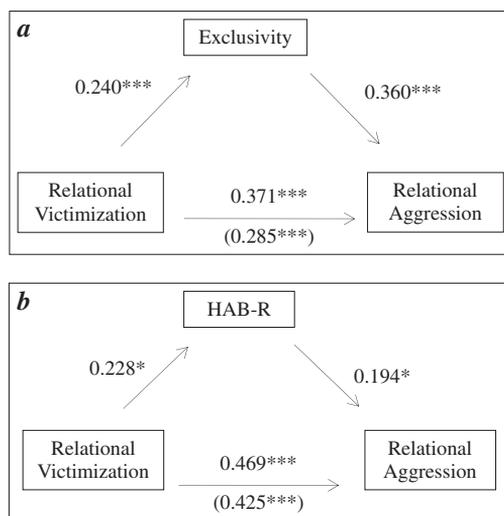


Figure 1. (a) Exclusivity as a mediator of relational victimization and relational aggression. (b) Relational hostile attribution biases as a mediator of relational victimization and relational aggression. HAB-R, hostile attribution biases for relational provocation. * $p < 0.05$, *** $p < 0.001$.

To address the second hypothesis a mediation model was run with relational victimization as the IV, hostile attribution biases for relational provocations as the mediator, and relational aggression as the DV. Both physical aggression and hostile attribution biases for instrumental provocations were controlled in all regression models. First, relational victimization was associated with relational aggression [$F(3, 79)=20.33, p<0.001, R^2=0.44$]. Second, relational victimization was associated with hostile attribution biases for relational provocations [$F(3, 79)=7.32, p<0.001, R^2=0.22$]. Third, hostile attribution biases for relational provocations significantly predicted relational aggression, controlling for relational victimization [$\Delta F(1, 78)=4.32, p=0.041, \Delta R^2=0.030$]. Fourth, there was a drop in magnitude of the association between relational victimization and relational aggression from 0.469 to 0.425 and the Sobel test revealed that the indirect effect was significant ($z=1.94, p<0.05$). Thus, in keeping with the indirect hypothesis, hostile attribution biases for relational provocations partially mediated the association between relational victimization and aggression (see Figure 1).

To address the third study goal, a mediation model was run with relational victimization as the IV, hostile attribution biases for instrumental provocations as the mediator, and relational aggression as the DV. Both physical aggression and hostile attribution biases for relational provocations were controlled in all regression models. First, relational victimization ($\beta=.45, p<0.001$) was associated with relational aggression [$F(3, 79)=21.68, p<0.001, R^2=0.45$]. Second, relational victimization ($\beta=-0.16, n.s.$) was not significantly associated with hostile attribution biases for instrumental provocations [$F(3, 79)=8.76, p<0.001, R^2=0.25$]. Third, hostile attribution biases for instrumental provocations ($\beta=-0.14, n.s.$) were not significantly associated with relational aggression, controlling for relational victimization [$\Delta F(1, 78)=2.00, p=0.161, \Delta R^2=0.014$]. Thus, all the criteria for mediation were not upheld and hostile attribution biases for instrumental provocations were not a significant mediator between victimization and aggression.

Discussion

This study was designed to test several theoretically based hypotheses about the association between relational victimization and aggression. Specifically, it was predicted that the direct association between relational victimization and aggression would be mediated by exclusivity within peer relationships as well as via hostile attribution biases for relational provocations. Moreover, it was anticipated that specificity in the associations would be found such that only hostile attribution biases for relational provocations would be a significant mediator. Support for the hypotheses was revealed in that both exclusivity and hostile attribution biases for relational provocations were significant mediators. These findings suggest that women who are relationally victimized display exclusivity within peer relationships and these dynamics are associated with relationally aggressive behavior. These results are consistent with a social process model that suggests that women who are victimized (and although not explicitly tested in the study, they may be rejected and lonely; see Buhs & Ladd, 2001; Ostrov, 2008) may be especially prone to feelings of exclusivity in the relationship and in turn use relational aggression within the dyad and against potential interlopers to maintain these friendships (Grotperter & Crick, 1996). In addition, women who receive relational aggression from others may generate hostile attribution biases for relational

provocations and in turn display relational aggression with their peers. Importantly, these processes were documented even after controlling for physical aggression in both models and the alternative form of hostile attribution biases. Further, the findings underscore that specificity in associations are apparent in that only hostile attributions for relational provocations and not instrumental provocations are a significant mediator.

Despite these strengths it is important to know if these behaviors are associated with severe forms of psychopathology and personality pathology more specifically. Prior work suggests that relational aggression and victimization are associated with maladaptive outcomes and indices of psychopathology (Crick & Zahn-Waxler, 2003), but no known study has tested if an indirect process may be present such that peer victimization leads to psychopathology which in turn is associated with relational aggression. Likely candidates for this mediation model are BPD symptoms, given the notable interpersonal difficulties, impulsiveness, and hostile world view associated with BPD (Geiger & Crick, 2001). These models extend those from study 1 in which exclusivity within relationships and hostile attribution biases (i.e., a type of hostile world view) were documented as significant mediators. Thus, the second study was designed to first replicate the direct association between relational victimization and relational aggression, controlling for physical aggression. In addition, the findings from study 1 were extended by testing if BPD symptoms mediated the association between relational victimization and relational aggression, controlling for physical aggression in a very similar sample to study 1 (i.e., ethnically diverse, women in emerging adulthood).

STUDY TWO

Method

Participants

Participants were 54 female emerging adults with a mean age of 19.16 years ($SD = 1.11$; range = 18–22). All of the participants were enrolled in an introductory psychology course at a large northeastern university and received course credit for their participation. The sample was ethnically diverse: 3.7% African-American, 29.6% Asian, 42.6% European American, 5.6% Latino, 5.6% multi-racial, 5.6% from other ethnic backgrounds and 7.3% unknown.

Measures

Aggression and victimization. The SRASBM was used to obtain participants' levels of relational and physical aggression and relational victimization. Internal consistency as measured by Cronbach's α was 0.84 for relational aggression, 0.87 for physical aggression, and 0.78 for relational victimization.

BPD symptoms. The Personality Diagnostic Questionnaire – 4th edition (PDQ-4; Hyler, 2003) is a self-administered measure that provides symptom counts consistent with DSM-IV diagnostic criteria for Axis II disorders. Items are answered dichotomously as true (“1”) or false (“0”), and scores are obtained by totaling the number of items marked “true” for each personality disorder. Eight questions

pertaining to BPD were used for the purposes of this study. One item pertaining to self-harm and suicidal ideation was removed for ethical purposes. It has been posited that the computation of internal consistency of this measure may not be meaningful because it was intended to be a checklist or symptom count for DSM-IV personality disorders (McHoskey, 2001). In the current study, internal consistency for the BPD subscale was below conventional levels ($\alpha=0.49$). Although this sample was not recruited to represent clinical levels of BPD pathology, it is necessary to note that 10 participants (5.3%) met the clinical threshold score (five or more symptoms) for BPD, which is in keeping with similar samples (Ostrov & Houston, 2008). Interpretation of this finding warrants caution, as more in-depth assessment would be needed to indicate a valid diagnosis (Bagby & Farvolden, 2004).

Procedure

The study was approved by the local IRB. In sets of two, participants provided written consent and completed a battery of pencil-and-paper questionnaires during the spring semester of an academic year. A trained research assistant administered consent forms and read instructions out loud to participants. Completion of questionnaires lasted approximately 30 minutes, after which participants were debriefed (i.e., informed of the study goals and provided a referral list).

Results

The main goal of this study focused on the hypothesized indirect pathway from relational victimization to relational aggression via BPD features. In each model, physical aggression was controlled. In the second study, relational and physical aggression were again moderately correlated, which justifies this approach ($r=0.46$, $p<0.001$).

Descriptive statistics were calculated for each study variable (see Table 1). Measures of skew were <3 and kurtosis were <8 , suggesting that non-normality of the data was not a concern (Kline, 2005). Correlations between the study variables are presented in Table 1. It is important to note that relational aggression was again moderately associated with relational victimization. Moreover, BPD features were significantly associated with relational aggression, physical aggression, and relational victimization.

To address the fourth overall hypothesis, a mediation model was run with relational victimization as the IV, BPD features as the mediator, and relational aggression as the DV. First, relational victimization ($\beta=0.362$, $p=0.002$) was associated with relational aggression, controlling for physical aggression [$F(2, 52)=13.56$, $p<0.001$, $R^2=0.34$]. Second, relational victimization ($\beta=0.28$, $p=0.028$) was associated with BPD features [$F(2, 51)=7.03$, $p=0.002$, $R^2=0.22$]. Third, BPD symptoms did not significantly predict relational aggression, controlling for relational victimization [$\Delta F(1, 50)=1.67$, $p=0.203$, $\Delta R^2=0.021$]. Thus, there was no evidence that BPD features mediated the association between relational victimization and aggression. There was limited variability in the age of the sample in this study as well and thus age was not statistically controlled, although *post-hoc* models that did control for age did not reveal any differences with the key study findings and thus the more parsimonious models are reported.

Given the initial bivariate associations between both subtypes of aggression and borderline features, a second regression analysis compared the simultaneous

association between relational and physical aggression with BPD features as the DV. The overall model was significant [$F(2, 51)=6.60, p=0.003, R^2=0.21$]. Specifically, relational aggression ($\beta=0.293, p=0.042$) but not physical aggression ($\beta=0.237, p=0.10$) was uniquely associated with BPD features.

Discussion

As predicted, it was found that borderline personality pathology was concurrently associated with relational aggression and relational victimization. However, no evidence was found that BPD symptoms mediated the association between these constructs. The secondary analysis was designed to add to the existing literature by demonstrating the unique associations between relational aggression and borderline personality symptoms after controlling for physical aggression. Interestingly, it was found that the unique association held between relational aggression and borderline symptoms, but they were no longer significant for physical aggression and borderline symptoms. These findings suggest future researchers and clinicians should control for the variance associated with relational aggression when examining concurrent and prospective associations between physical aggression and borderline features. It is conceivable that the mediation model was not significant due to the restricted sample size available for study 2 and with increased power this study goal may have been supported. Moreover, the present approach to the measurement of borderline pathology has some limitations and alternative measures of personality pathology may have better psychometric properties and in turn be superior in detecting borderline pathology to the symptom checklist used in the present study (e.g., Morey, 1991). Despite these limitations, the findings from the second study do extend the findings from the first to underscore the notion that relational aggression in women may be uniquely associated with borderline personality pathology.

GENERAL DISCUSSION

Overall, the findings from the two studies support the theoretically driven hypotheses that relational victimization and aggression are linked for women during emerging adulthood. Moreover, there is some evidence of an indirect pathway such that victims of relational aggression are more likely to hold hostile attribution biases for relational provocations, which in turn predict higher levels of relational aggression. These links were specific for ambiguous relational provocations (e.g., not being invited to a party) and, consistent with predictions, did not emerge for instrumental provocation scenarios (e.g., getting bumped from behind or having property destroyed). In addition, relational victimization is associated with heightened exclusivity within peer relationships, which may provide the impetus for greater relational aggression when those women become upset or angry with their friends for violating perceived relationship expectations. In study 2 it was further documented that relational aggression and victimization are associated with BPD symptoms, suggesting that these social behaviors among peers are indicative of serious forms of psychopathology during emerging adulthood. Despite a lack of evidence for borderline symptoms serving as a mediator, it was documented that relational aggression was uniquely associated with borderline symptoms, but physical aggression was not. A key limitation of the present

studies is that they were both concurrent analyses (see also Hoglund & Leadbeater, 2007) and this lack of temporal precedence is problematic for examining mediation (MacKinnon et al., 2002); thus future prospective studies are needed. In addition, the measures were all self-reported and thus the documented associations may have been an artifact of shared method variance and future work with independent measures (e.g., physiological assessments, diagnostic interviews) are needed. Finally, research with a larger, more diverse sample is warranted to replicate the findings.

The present findings have developmental and clinical implications. These findings add to the growing developmental psychopathology literature suggesting that relational aggression during emerging adulthood is associated with symptoms of psychopathology (e.g., Ostrov & Houston, 2008; Storch & Masia-Warner, 2004). Importantly, few studies have been conducted beyond emerging adulthood and no known prospective longitudinal studies have been conducted from emerging adulthood into adulthood. Those studies that have been conducted with adults suggest that individuals who continue to display high levels of relational aggression with peers and romantic partners during the adult years are probabilistically more likely to display serious psychopathology, including intermittent explosive disorder and various Axis I and II disorders (Murray-Close et al., 2010). Moreover, it is conceivable that aggressive behavior displayed to close peers may lead to relational aggression within the romantic relationship (Linder et al., 2002; Murray-Close, 2011) and possibly intimate partner violence (see Wright & Benson, 2010).

CONCLUSION

In conclusion, the present study is the first to test several theoretically informed hypotheses about possible mechanisms by which relational victimization may be associated with relational aggression in women during emerging adulthood. The present findings suggest that hostile attribution biases for relational provocations and exclusivity are primary candidates for these indirect pathways and important unique associations between relational aggression and borderline personality pathology were documented that warrant future investigations. This research has implications for clinicians who work with and treat women during this developmental period and they should be mindful of the harmful correlates and possible developmental outcomes associated with relational victimization and aggression. Greater focus on the study of relational aggression in adult women is also needed in order to gain an appropriate understanding of the course and impact of these behaviors across development.

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