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Relational Aggression and Adverse Psychosocial and Physical Health Symptoms Among Urban Adolescents

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Abstract

Objectives: The purpose of this study was to examine relational aggression and its relationship with adverse psychosocial and physical health symptoms among urban, African American youth.

Design and Sample: Quantitative, cross-sectional survey design. The sample consisted of 185 predominantly African American (95.1%) seventh-grade students (mean age: 13.0; female: 58%) attending 4 urban middle schools.

Measures: The *Children's Social Behavior Scale* and *Social Experience Questionnaire* were used to measure relational aggression and relational victimization. The *Pediatric Symptom Checklist* was used to assess psychosocial difficulties, including internalizing behaviors, externalizing behaviors, and attention problems. Physical health symptoms were measured with questions about colds/flu, headaches, and stomach aches.

Results: 2-way multivariate analysis of variance revealed significant differences in externalizing behavior, with perpetrators reporting higher levels than nonperpetrators. Victims reported more internalizing behavior than nonvictims; however, this was only significant for males. For females, significant negative effects on health outcomes were found, resulting from the interaction of perpetration and victimization.

Conclusions: Findings suggest that relational aggression is a common occurrence among urban, minority adolescents and may result in adverse health outcomes. These results provide several

avenues for future research and implications for healthcare practice. Intervention strategies are needed to prevent relational aggression and continual or subsequent adverse health symptoms.

Keywords

adolescent health; African Americans; mental health; violence

Youth violence is universally recognized as a significant public health concern in the United States, particularly in urban communities. High rates of violence are consistently reported in urban areas, providing youth with numerous opportunities to observe and model this behavior (U.S. Department of Justice, 2000). Research examining correlates and causal factors of violent behavior in urban settings has increased, but research examining more subtle, covert forms of aggression in this population is sparse.

Relational aggression is a covert form of aggression, defined as a set of manipulative behaviors used to inflict harm on another through damage to relationships, threat of damage, or both (Crick, Casas, & Nelson, 2002). Behaviors include direct control of relationships, social isolation, rejection, and exclusion. Numerous studies, conducted with primarily Caucasian, middle-class children, have shown that relational aggression (both perpetration and victimization) is associated with impairments in psychosocial and physical well-being (Crick, 1996; Crick & Bigbee, 1998; Crick & Grotpeter, 1995, 1996; Crick, Ostrov, & Werner, 2006; Murray-Close, Ostrov, & Crick, 2007; Phelps, 2001; Prinstein, Boergers, & Vernberg, 2001; Storch, Phil, Nock, Masia-Warner, & Barlas, 2003; Sullivan, Farrell, & Kliewer, 2006; Werner & Crick, 1999). It is imperative that further research be conducted examining these relationships in other populations. The purpose of this investigation was to examine relational aggression and adverse psychosocial and physical health problems in a sample of urban, predominantly African American, seventh- grade students.

Physical aggression has been clearly defined as a significant precursor of psychopathology and psychosocial adjustment difficulties (e.g., Brown, 2003; Coie & Dodge, 1998; Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). Similarly, recent studies indicate that relational aggression is a predictor of psychosocial health problems among youth. Several studies have found that both perpetrators and victims of relational aggression are more likely to experience internalizing behaviors (i.e., behavior problems that are directed inward), such as depression, loneliness, anxiety, somatic complaints, and social avoidance (Crick, 1996; Crick & Bigbee, 1998; Crick & Grotpeter, 1995, 1996; Crick et al., 2006; Murray-Close et al., 2007; Phelps, 2001; Prinstein et al., 2001; Storch et al., 2003), as well as externalizing behaviors (i.e., behavior problems that are directed outward toward the social environment), including delinquency, disruptive and antisocial behavior, substance use, and other forms of aggression (Crick et al., 2006; Prinstein et al., 2001; Sullivan et al., 2006).

These findings are consistent with the transactional theory of stress and coping (Lazarus, 2000; Lazarus & Folkman, 1984). According to this theory, stressful situations, such as those involving relational aggression, and the specific coping behaviors used to deal with stressors have a direct impact on the psychosocial and physical health of an individual. The impact of stress on health is affected by the way an individual appraises and copes with the stressor; that is, individuals may or may not experience adverse health outcomes as a result

of stress depending on whether they view the stressor as a threat to their well-being and whether or not they use adaptive or maladaptive coping strategies to deal with the stressor.

It has been suggested that girls may be more likely to experience adverse outcomes as a result of relational aggression because they are more likely to view the incident as harmful when compared with boys (Crick, Bigbee, & Howes, 1996; Galen & Underwood, 1997; Goldstein & Tisak, 2004; Paquette & Underwood, 1999). Several studies examining gender differences in the consequences of relational aggression have shown that females do, indeed, demonstrate more severe adverse outcomes, including internalizing and externalizing behaviors (Crick, 1996; Crick & Bigbee, 1998; Crick & Grotpeter, 1995, 1996; Werner & Crick, 1999). Exceptions to this, however, have been shown in two recent longitudinal studies. Murray-Close et al. (2007) examined relational aggression and internalizing symptoms among 604 fourth-grade students in a large mid-Western city over a 1-year period and found that gender did not moderate this relationship over time. Crick et al. (2006) studied relational aggression and internalizing and externalizing behaviors among 224 third-grade students over a 1-year period and found that relationally aggressive boys were more likely to report withdrawn and delinquent behaviors compared with both relationally aggressive girls and girls and boys who were not relationally aggressive.

While there is a growing body of research focusing on the impact of relational aggression on psychosocial outcomes, little is actually known about the prevalence of relational aggression and its relationship with psychosocial and other health difficulties among minority youth. Previous studies have primarily focused on Caucasian middle-class youth and when racially diverse samples were included, results were rarely examined separately by race/ethnicity. The few studies that have examined relational or other forms of covert aggression with minority samples have found higher rates of both perpetration and victimization in minority youth compared with Caucasian youth (Oüsterman, Bjorkqvist, Lagerspetz, & Kaukiainen, 1994; Storch et al., 2003). Research studies have found that minority youth from low socioeconomic backgrounds are disproportionately more likely to be exposed to violence in their communities and homes (Buka, Stichick, Birdthistle, & Earls, 2001; Moore, Probst, Tompkins, Cuffe, & Martin, 2007) and are more likely to engage in and be victimized by aggressive acts (Blum et al., 2000; Eaton et al., 2006). It is equally important to examine more subtle forms of aggression, such as relational aggression, among minority youth because of the association between relational aggression and adverse health outcomes found in other populations.

This study contributes to the knowledge of youth violence and relational aggression by examining differences between adolescents who have experienced relational aggression and those who have not in reported adverse psychosocial and physical health symptoms in a sample of African American urban seventh-grade students. Based on the extant literature and relevant theory, it was hypothesized that both perpetrators and victims of relational aggression would report higher levels of adverse psychosocial and physical health symptoms compared with non-perpetrators and nonvictims and that these relationships would be stronger among females. It was also expected that the prevalence of relational aggression would be higher in this sample when compared with the prevalence rates found in other studies using primarily Caucasian, middle-class samples.

Methods

Design and sample

This study used a cross-sectional, correlational design in which data were collected as part of a larger, quasi-experimental dating violence prevention intervention trial. Descriptions of this initiative and its effectiveness are presented elsewhere (Campbell et al., 2006; Yonas et al., 2008). Approval was obtained from the Institutional Review Board at the participating university and the Centers for Disease Control and Prevention. A Certificate of Confidentiality was obtained to assure protection of the subjects.

Participants were recruited from seventh-grade classrooms in four urban, public middle schools in a mid-Atlantic state. The four schools were similar in demographics and socioeconomic status. The majority of students attending these schools were from impoverished backgrounds, with 80% qualifying for free (72.5–82.6%) or reduced (5.5–8.2%) lunch.

Data were collected from 194 seventh-grade students. Participants were excluded from analysis if they did not report gender ($n = 5$) or if they were missing more than 10% of items on any scale ($n = 4$), resulting in a final sample size of 185. Other missing data were replaced using expectation maximization (DuToit & Mels, 2002; Schafer, 1997). Power analyses were conducted based on the relationship of primary interest (i.e., relational aggression and adverse health outcomes). Because gender was also believed to play an integral role in these relationships, power analyses were also run separately for males and females. These analyses indicated that a sample size of 185 was sufficient enough to power the study at the .80 level.

Of the 185 students, 76 were male and 109 were female. Age ranged from 12 to 15, with a mean of 13.0, and the majority of students identified themselves as African American (95.1%). No statistically significant differences were found between males and females on any of the demographic variables.

Self-report, anonymous surveys were administered to students enrolled in the study. In the larger study, these surveys were administered both at the beginning (Fall 2004) and at the end (Spring 2005) of the school year; however, for the purpose of this paper, only data from the end of the year surveys were reported, given that data related to relational aggression were only collected during this time point. Parental consent and student assent were obtained before data collection. Members of the research team administered surveys at a time and a location mutually decided upon with school administration.

Measures

Demographics.

Participant characteristics were assessed through routine questions asking about age, gender, and race/ethnicity.

Relational aggression.

Perpetration of relational aggression was measured by the *Children's Social Behavior Scale-Self Report*, a 15-item measure designed to assess children's perceptions of their peer interactions (Crick & Grotpeter, 1995). This instrument consists of five subscales (i.e., relational aggression, physical aggression, prosocial behavior, inclusion, and loneliness). In this analysis, only the relational aggression subscale (five items) was used. This subscale assesses the degree to which youth perceive that they direct relationally aggressive behaviors (i.e., ostracizing, isolating, excluding, lying, and spreading rumors about others) toward their peers on a 5-point Likert scale (1 = *never* to 5 = *all the time*). In this study, the Cronbach α coefficient for this subscale was .86.

Relational victimization was measured by the *Social Experience Questionnaire-Self Report*, a 15-item measure designed to assess victimization and positive peer treatment (Crick & Grotpeter, 1996). This instrument consists of three subscales (i.e., overt victimization, relational victimization, and recipient of prosocial behavior); however, for the purposes of this study, only the relational victimization subscale (five items) was used. This subscale assesses the frequency with which children report that their peers attempt to harm, or threaten to harm, their peer relationships through different types of behaviors (i.e., ostracizing, isolating, excluding, lying, and spreading rumors) on a 5-point Likert scale ranging from 1 = *never* to 5 = *all the time*. The Cronbach α coefficient for this subscale was .87.

Adverse psychosocial and physical health symptoms.

Psychosocial difficulties were measured using the *Pediatric Symptom Checklist Youth Report* (Y-PSC; Jellinek et al., 1988). This instrument consists of 35 questions designed to assist in the recognition of various psychosocial problems. Students were asked to rate their experiences with each item as “;never,” “;sometimes,” or “;often.” A value of 0, 1, and 2 was assigned to each of these responses, respectively. A shorter, 17-item, version of the parent report PSC (PSC-17) has been developed, identifying three subscales for specific psychosocial problems (Gardner et al., 1999). These subscales include internalizing behaviors, externalizing behaviors, and attention problems. Cutoff scores for the identification of significant psychosocial problems are 5 for the internalizing subscale (range: 0–10), 7 for the externalizing subscale (range: 0–14), and 7 for the attention subscale (range: 0–10). In order to make use of these subscales in this study, an adapted version of the PSC-17 was created for use with youth (Y-PSC-17). Cronbach α coefficients for the Y-PSC scale were .87 overall and .78, .78, and .70 for the internalizing, externalizing, and attention subscales, respectively.

Adverse physical health symptoms were measured with three questions asking about the frequency with which students experience colds/flu, headaches, and stomach aches. Items were rated as “;never,” “;sometimes,” or “;often” and assigned a value of 0, 1, and 2, respectively. In this study, the Cronbach α coefficient for this scale was .73.

Analytic strategy

Data were analyzed using SPSS 14.0 statistical computer software. Descriptive statistics were conducted to determine the prevalence of relational aggression and relational victimization in this sample as well as the prevalence of adverse psychosocial and physical health symptoms. Replicating the criteria previously used to define victimization and perpetration in the literature, victim and perpetrator groups were created for individuals reporting frequencies 1 standard deviation above the mean on the respective scales (Crick & Grotpeter, 1995). Chi-squared tests were used to examine possible gender differences in these rates.

A two-way multivariate analysis of variance (MANOVA) was conducted to examine the impact of relationally aggressive behaviors on health symptoms. The main factors of interest were adolescents' experience of perpetration and victimization, both dichotomized as yes or no. This analysis was used, given the likelihood that the dependent variables (i.e., internalizing behaviors, externalizing behaviors, attention problems, physical health symptoms) are related to one another. Also, a two-way MANOVA allowed for not only tests of the main effects of the independent variables (i.e., perpetration and victimization) but also for possible interaction effects between these variables, which is important, given the relatively high co-occurrence of perpetration and victimization found in this sample. The use of MANOVA also reduces the risk of Type I errors, which are more common with the use of repeated analyses of variance (ANOVA). Box's test of equality was used to test the assumption of homogeneity of variance-covariance matrices, and Levene's test of equality was used to test the assumption of equality of variances. No serious violations to these assumptions were noted. Statistical significance was based on Wilks' γ statistic and partial η^2 statistics were reported to illustrate effect size. Analyses were run separately for males and females.

Results

Prevalence of relational aggression

Table 1 presents the prevalence of relational aggression and adverse psychosocial and physical health symptoms by gender. Overall, 16.8% and 18.4% of students were classified as perpetrators and victims of relational aggression, respectively. Males were significantly more likely to report being a victim of relational aggression, $\chi^2(1, n= 185) = 4.56, p = .05$. No significant gender differences were found for perpetration of relational aggression. The amount of cooccurrence of perpetration and victimization in this sample was also of interest; therefore, students were reclassified into four groups: perpetration only, victimization only, both perpetration and victimization, and neither perpetration nor victimization. The majority of students were classified as neither perpetrators nor victims (75.1%). Of the students who reported experiencing relational aggression, 41% reported experiencing both perpetration and victimization. No statistically significant gender differences were found based on these four groups; however, this may be due to the relatively small number of students represented in each group and thus, a reduction in the power to detect differences.

Prevalence of psychosocial and physical health symptoms

Established cutoff scores were used to assess the prevalence of adverse psychosocial symptoms in this sample. The most prevalent type of psychosocial problems found in this sample was internalizing behaviors, with almost one-quarter (22.7%) of the students having scores >5 on this subscale. 16.2% of students were identified as having problems with externalizing behaviors, whereas only 5.3% were identified as having attention problems. No significant gender differences were found for any of the psychosocial symptoms. The prevalence of physical health symptoms followed a relatively normal distribution, with the majority of students reporting that they have colds/flu (56.2%), headaches (46.5%), and stomach aches (54.6%) sometimes. “;Never” and “;sometimes” were considered normal responses for physical health symptoms among youth; therefore, these categories were combined for each of the physical health symptom questions to create dichotomous variables (“;never/sometimes” and “;always”). Chi-squared tests were then used in order to assess gender differences. No significant difference was found between boys and girls for reported occurrence of colds/flu, $\chi^2(1, n = 185) = 0.19, p = .67$, or stomach aches, $\chi^2(1, n = 185) = 3.57, p = .06$; however, significant differences were found for reported occurrence of headaches, $\chi^2(1, n = 185) = 10.56, p = .001$, with females reporting the occurrence of these symptoms “;always” more than males.

Gender differences in the relationship between relational aggression and health outcomes

Males.—A two-way MANOVA showed that the factors had a significant main effect on health outcomes: (1) perpetration status, $F(4,69) = 2.90, p = .05$, which mainly applies to externalizing behavior, $F(1,72) = 7.11, p = .01$; partial $\eta^2 = .09$; and (2) victimization status, $F(4,69) = 2.81, p = .05$, which mainly applies to internalizing behavior, $F(1,72) = 9.49, p = .01$; partial $\eta^2 = 0.12$. The interaction of perpetration status and victimization status was not significant, $F(4,69) = 2.08, p = .09$. An inspection of mean scores for these analyses (Table 2) shows that perpetrators reported higher levels of externalizing behaviors ($M = 6.80, SD = 1.01$) compared with nonperpetrators ($M = 3.82, SD = 0.47$) and victims reported higher levels of internalizing behaviors ($M = 3.92, SD = 0.46$) than nonvictims ($M = 1.22, SD = 0.74$).

Females.—A statistically significant main effect was found for perpetration status, $F(4, 102) = 2.60, p = .05$, on the combined dependent variables, but not for victimization status alone, $F(4, 102) = 1.38, p = .25$. When the dependent variables were examined separately, a significant difference was found between perpetrators and nonperpetrators in their reports of externalizing behaviors, $F(1,105) = 15.45, p = .01$; partial $\eta^2 = .06$. The partial η^2 statistic showed a moderate effect (Cohen, 1988). An examination of the mean scores (Table 2) showed that, as with boys, perpetrators reported higher levels of externalizing behaviors ($M = 6.16, SD = 0.59$) compared with nonperpetrators ($M = 4.18, SD = 0.52$).

The interaction between the two factors, perpetration and victimization, showed that there was a significant negative effect on health outcomes that resulted from the interaction of perpetration with victimization, $F(4, 102) = 3.95, p = .01$, that applies to internalizing behaviors, $F(1,105) = 4.17, p = .05$; partial $\eta^2 = .04$, externalizing behaviors, $F(1,105) = 4.60, p = .05$; partial $\eta^2 = .04$, and attention problems, $F(1,105) = 15.45, p = .001$; partial η^2

= .13. Figure 1 presents the estimated means for each of the perpetration/victimization interactions (i.e., perpetration only, victimization only, both perpetration and victimization, and neither perpetration nor victimization). For internalizing behaviors, the highest mean score was seen among the perpetration-only group ($M = 4.90$, $SD = 0.68$) and the lowest among those who reported neither perpetration nor victimization ($M = 2.39$, $SD = 0.23$). For externalizing behaviors, high mean scores were found for the perpetration-only ($M = 6.20$, $SD = 0.79$), victimization-only ($M = 5.833$, $SD = 1.013$), and both perpetration and victimization groups ($M = 6.13$, $SD = 0.88$); whereas the mean for the neither perpetration nor victimization group was much lower ($M = 2.53$, $SD = 0.27$). When the mean scores for attention problems were examined among the four perpetration/victimization groups, the highest mean scores were found among the victim-only ($M = 5.33$, $SD = 0.87$) and perpetrator-only groups ($M = 5.20$, $SD = 0.67$) and the lowest scores among the both perpetration and victimization group ($M = 2.50$, $SD = 0.75$) and neither perpetration nor victimization group ($M = 2.72$, $SD = 0.23$).

Discussion

This study examined differences in adverse psychosocial and physical health symptoms between youth who have experienced relational aggression (perpetration and/or victimization) and those who have not, in a sample of predominantly African American, urban adolescents. Despite the increase in research examining relational aggression among youth, the number of studies focusing on relational aggression in minority populations is limited. This study provides new information regarding relational aggression and associated psychosocial and physical health problems in this understudied population.

Several important findings emerged from the results of this study. First, in this sample of minority urban adolescents, perpetration rates of relational aggression were found to be slightly higher than those reported in previous studies using mostly Caucasian samples (Crick, 1997; Crick et al., 1996; Crick & Grotpeter, 1995; Crick, Grotpeter, & Bigbee, 2002; Crick et al., 2006; Crick & Werner, 1998; Henington, Hughes, Cavell, & Thompson, 1998; Tomada & Schneider, 1997); however, victimization rates were considerably higher (Crick & Bigbee, 1998; Crick & Grotpeter, 1996). These studies, which used definitions of relational aggression similar to the ones used in this study, found rates ranging from 8.7% to 16% for perpetration and 8% for the two studies that examined victimization. This study found reported rates of 16.8% for perpetration and 18.4% for victimization.

Given that the conceptual and operational definitions used in this study were the same as those used in other studies, the higher rate of victimization is most likely a result of differences in sample characteristics. Specific characteristics that may have contributed to this higher rate include age, race, socioeconomic status, and urbanicity. This sample consisted of minority youth living in an impoverished urban area. Urbanicity has been related to higher levels of violence in numerous studies (Lambert, Ialongo, Boyd, & Cooley, 2005; Ozer & Weinstein, 2004; Schwab-Stone et al., 1999) and may, in part, explain the higher rate of reported victimization in this study.

Consistent with the hypothesis of this study, both perpetrators and victims of relational aggression reported more adverse health symptoms compared with nonperpetrators and nonvictims. Among both males and females, perpetrators of relational aggression reported higher levels of externalizing behaviors compared with nonperpetrators. In general, past research has provided some evidence of a relationship between relational aggression and externalizing behaviors (Crick, 1997; Crick & Grotpeter, 1995; Crick et al., 2006; Murray-Close et al., 2007; Prinstein et al., 2001). Because of the cross-sectional nature of this study, the exact relationship between relational perpetration and externalizing behavior is unclear. Given that externalizing behaviors describe a wide range of disruptive behaviors (e.g., aggression, delinquency, hyperactivity), it makes sense that externalizing behaviors would be related to relational perpetration because they both include similar, “;acting out” behaviors. Future research is needed, however, to further clarify the predictive nature of this relationship. Recent longitudinal studies provide evidence that relational aggression does in fact lead to subsequent externalizing behaviors (Crick et al., 2006; Murray-Close et al., 2007), although more research is needed to determine whether this is the case in this specific population.

Relational victimization was also associated with adverse psychosocial health symptoms in this sample, specifically internalizing behaviors; however, this relationship was found only among boys. This finding is contrary to our expectations and several previous studies that have not only shown that relational victimization is related to psychosocial problems among girls, but that this relationship is stronger for girls than boys (Crick, 1996; Crick & Bigbee, 1998; Crick & Grotpeter, 1995,1996; Werner & Crick, 1999). Several researchers have proposed that girls are more likely to experience adverse outcomes from relational victimization because they are more likely to view the behavior as hurtful (Crick et al., 1996; Galen & Underwood, 1997; Goldstein & Tisak, 2004; Paquette & Underwood, 1999). It may be that girls in this population have different normative beliefs about relational aggression compared with other populations and do not regard the incident as harmful. Consistent with the transactional theory of stress and coping, if an individual does not perceive an incident as harmful, they would not be expected to experience adverse outcomes as a result. Further studies should be designed and conducted to elucidate the meaning and intent of relational aggression in this population.

Another possible explanation for these findings may be that boys have a lower ability to cope with this type of aggression. Relational aggression is often considered to be a more salient form of aggression among girls, whereas physical and other overt forms of aggression are more salient for boys. While boys do engage in relational aggression, it is usually considered uncharacteristic or nonnormative. Given the atypical nature of relational aggression among boys, they may be less likely to develop positive coping mechanisms for experiences of relational victimization and thus, develop adverse psychosocial outcomes. This is similar to the ideas suggested by some researchers of a possible link between perpetration of gender nonnormative aggression and psychosocial difficulties (Crick, 1997; Crick & Dodge, 1994; Crick et al., 2006). These researchers propose that children who engage in behavior that is noncharacteristic of his or her gender may be more likely to experience adverse psychosocial outcomes as a result of increased negative reactions and sanctions by others.

Finally, the interaction between perpetration and victimization was associated with differences in the levels of internalizing behaviors, externalizing behaviors, and attention problems; however, this association was only found among girls. The fact that the interaction between perpetration and victimization was significant may indicate that there is a reciprocal component to relational aggression, particularly among girls. There is some evidence that indicates that girls are more likely than boys to support retaliation (Copeland-Linder et al., 2007) and engage in this type of behavior (Mollen, Fein, Localio, & Durbin, 2004). It is important to note, however, that in these studies, only physical fighting was examined, and therefore, little is known about retaliatory behavior using other forms of aggression.

The results of this study provide several avenues for future research. First, these findings suggest that relational aggression is a common occurrence among urban, minority adolescents, a population inexplicably affected by violence. Future work would benefit from increased attention to the interrelationships between relational aggression and other forms of violence in this population. Additionally, more research is needed to further explore gender differences in the relationship between relational aggression and adverse psychosocial and physical health symptoms. Specifically, why are boys who are victimized by relational aggression more likely to experience adverse symptoms? Are girls better able to cope with this type of stressor? Similarly, what role does perception of relational aggression play in this population? Is this type of aggression viewed as normal among urban, minority girls, and thus not seen as hurtful? More research further examining gender differences and the reciprocal nature of relational aggression among youth is also needed. Finally, as previously mentioned, more longitudinal research is needed in order to address the limitations inherent in cross-sectional research.

The association between relational aggression and adverse health symptoms found in this study highlights the problematic nature of this behavior among urban, minority youth. Nurses and other health care professionals work with youth in many settings and are, therefore, in excellent positions to address issues related to relational aggression. Health care providers can play an important role in addressing relational aggression at all three levels of prevention (primary, secondary, and tertiary). Particular attention should be placed on how resources within the environment can serve to ameliorate the perceived stress related to relational aggression. It is important that healthcare professionals assess for relational aggression in their practice, particularly when these types of problematic behavior or adverse psychosocial health symptoms present, as this may be a critical time to intervene to reduce relational aggression and prevent continual or subsequent adverse health symptoms.

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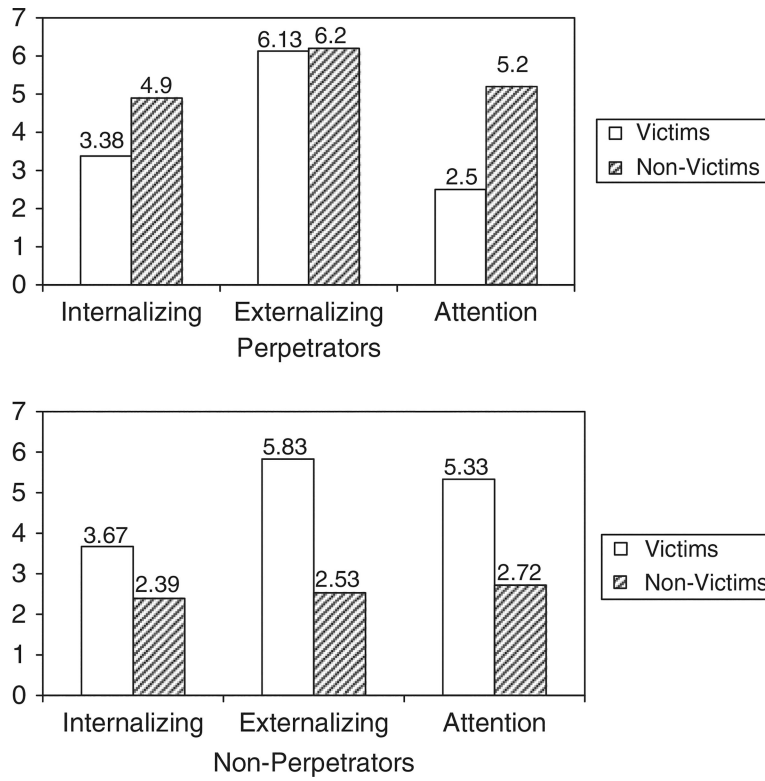


Figure 1. Estimated Marginal Means for the Effects of the Interactions of Perpetration Status and Victimization Status on Internalizing Behavior, Externalizing Behavior, and Attention Problems among Female Students

Table 1.

Prevalence of Relational Aggression and Adverse Psychosocial and Physical Health Symptoms by Gender

| Variables | Males (<i>n</i> = 76) (%) | Females (<i>n</i> = 109) (%) | Overall (<i>n</i> = 185) (%) |
|----------------------------------------|----------------------------|-------------------------------|-------------------------------|
| Relational aggression | | | |
| Perpetration-overall | 17.1 | 16.5 | 16.8 |
| Victimization-overall * | 26.3 | 12.8 | 18.4 |
| Perpetration only | 2.6 | 9.2 | 6.5 |
| Victimization only | 11.8 | 5.5 | 8.1 |
| Both perpetration and victimization | 14.5 | 7.3 | 10.3 |
| Neither perpetration nor victimization | 71.1 | 78.0 | 75.1 |
| Psychosocial symptoms | | | |
| Internalizing | 25.0 | 21.1 | 22.7 |
| Externalizing | 18.4 | 14.7 | 16.2 |
| Attention | 3.9 | 6.4 | 5.3 |
| Physical health symptoms | | | |
| Colds/flu | | | |
| Never/sometimes | 89.5 | 86.3 | 87.6 |
| Always | 10.5 | 13.8 | 12.4 |
| Headache | | | |
| Never/sometimes | 88.2 | 66.1 | 75.1 |
| Always ** | 11.8 | 33.9 | 24.9 |
| Stomach ache | | | |
| Never/sometimes | 86.9 | 74.3 | 79.5 |
| Always | 13.2 | 25.7 | 20.5 |

Note.

*
p .05,**
p .01.

Table 2.

Estimated Marginal Means for Adverse Psychosocial and Physical Health Symptoms by Perpetration/Victimization Status and Gender

| Variables | Perpetrators (n = 31) | | Nonperpetrators (n = 154) | | Victims (n = 151) | | Nonvictims (n = 34) | |
|--------------------------|-----------------------|------|---------------------------|-----|-------------------|-----|---------------------|-----|
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Males | | | | | | | | |
| Psychosocial symptoms | | | | | | | | |
| Internalizing behaviors | 2.61 | 0.79 | 2.52 | .37 | 3.92 | .46 | 1.22 | .74 |
| Externalizing behaviors | 6.80 | 1.01 | 3.82 | .47 | 5.82 | .59 | 4.80 | .95 |
| Attention problems | 2.96 | 0.82 | 3.03 | .38 | 3.90 | .48 | 2.08 | .77 |
| Physical health symptoms | 3.05 | 0.57 | 2.69 | .27 | 3.27 | .33 | 2.47 | .53 |
| Females | | | | | | | | |
| Psychosocial symptoms | | | | | | | | |
| Internalizing behaviors | 4.14 | 0.51 | 3.03 | .46 | 3.52 | .58 | 3.64 | .36 |
| Externalizing behaviors | 6.16 | 0.59 | 4.18 | .52 | 5.98 | .67 | 4.37 | .42 |
| Attention problems | 3.85 | 0.51 | 4.03 | .45 | 3.92 | .58 | 3.96 | .36 |
| Physical health symptoms | 3.65 | 0.39 | 3.10 | .34 | 3.42 | .44 | 3.33 | .28 |

Note. Possible ranges for each variable are internalizing behavior=0–10, externalizing behavior=0–14, attention problems=0–10, physical health symptoms=0–6.