A Cross-lagged Model of Adolescent Dating Aggression Attitudes and Behavior: Relationship Education Makes a Difference

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Romantic relationships offer many positive developmental opportunities for adolescents. Most importantly they provide a context for identity and intimacy development (Beyers & Seiffge-Krenke, 2008; Dyk & Adams, 1987; Kerpelman et al., 2012; Markstrom & Kalmanir, 2001; Montgomery, 2005; Pittman, Keiley, Kerpelman, & Vaughn, 2011). Despite, the capacity for facilitating healthy development, romantic relationships also can include experiences of jealousy, possessiveness, and relationship violence (Giordano, Soto, Manning, & Longmore, 2010). Dating aggression in adolescent relationships is of concern given the effects it can have on adolescent development and adjustment, as well as patterns established that can affect functioning and outcomes well into the future. The current paper examines the effectiveness of a youth-focused relationship education program to increase disapproval of relationship aggression and reduce physical aggression perpetrated by adolescents in their dating relationships.

Dating Aggression in Adolescent Romantic Relationships

Dating aggression is common among adolescents, with some studies finding rates of 50% or higher of adolescents reporting dating aggression experiences (Ellis, Crooks, & Wolfe, 2009; Fritz & Slep, 2009). Physical aggression, which includes grabbing, pushing, slapping, punching, and/or kicking one's romantic partner (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) has

been found to occur within a substantial minority of adolescent dating relationships (Banyard & Cross, 2008; Howard, Wang, & Yan, 2007; Whitaker & Niolon, 2010) at rates of approximately 10% - 30% (Giordano et al., 2010;Gomez, 2011; Silverman, Raj, Mucci, & Hathaway, 2001). In one study of late adolescents reporting on their experiences in recent relationships, findings indicated that physical intimate partner violence in one relationship significantly predicted persistent perpetration in the next (Whitaker & Niolon). In another study, Crick, Ostrov, and Werner (2006) found that relationally aggressive students were more socially and psychologically maladjusted than their non-aggressive peers. Their results suggest that relational aggression is significantly related to maladjustment depression, loneliness, and social isolation. Similarly, Banyard and Cross found positive associations between dating violence and depression, suicidal thoughts and academic failure. And Ackard, Eisenberg, and Neumark-Sztainer (2007), who investigated the long-term impact of adolescent dating violence, noted that adolescent dating violence significantly preceded the initiation or worsening of the health risks.

Dating Aggression across Time

Relational interactions are subject to change but few studies have tried to assess the relationship between underlying motivations for aggressive behavior and engagement in aggressive actions over time. Ellis et al. (2009) argue for increasing understanding of adolescents' knowledge and attitudes regarding relationship aggression, and Pronk and Zimmer-Gembeck (2010) note the need for research that assesses the reasons adolescents engage in relational aggression, including attitudes and motivations. Goldstein and Tisak's (2010) examination of early adolescents' attitudes about relational aggression, and the relationship between those attitudes and their own relationally aggressive behavior indicated that adolescents' views about relational aggression were not consistently positive or negative. Adolescents

believed that physical aggression, more so than other forms of aggression, was wrong. Additionally, beliefs about physical aggression were associated with physically aggressive behavior.

In a longitudinal study that examined the stability of adolescent dating aggression across both time using growth curve (GC) modeling techniques, Fritz and Slep (2009) found that when adolescents remained with the same partner, that did not increase their risk for physical perpetration or physical or psychological victimization. Herrenkohl et al. (2009) also looked at aggression across time, in order to examine how aggression in seventh grade and ninth grade relates to aggression two years later. Results indicated a significant relationship between 7th and 9th grade aggression and aggression two years later. This relationship remained significant even after accounting for age, gender, and race.

Across cross-sectional and longitudinal studies, the most commonly used measure of physical aggression is the Conflict Tactics Scales (Straus, 1979)/the revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). In a recent analysis of the factorial structure of the physical dating aggression subscale, Nocentini, Menesini, Pastorelli, Connolly, Peplar, & Craig (2011) found that the scale was monodimensional, and was invariant (with some qualifications) across gender and country in their study of 704 Italian high school students and 924 Canadian high school students. This measure was found to capture a range of physical aggression behaviors and offer a good assessment of these behaviors within adolescent dating relationships.

The context and processes which underlie the choices adolescents make are important particularly in understanding why adolescents become aggressors in these relationships. Specifically, more research that addresses associations among attitudes about aggression and

actual use of physical aggression in dating relationships over time is needed. Importantly, it needs to be determined whether educating adolescents about beliefs and behaviors that support healthy dating relationships influences their attitudes about relationship aggression and their actual use of relationship aggression.

Associations between Attitudes and Behavior

Research has documented linkages between aggressive attitudes (cognitions and affect) and behavior (Brezina, 2010; Henry, Farrell, Schoeny, Tolan, & Dymnicki, 2011; Solomon, Bradshaw, Wright, & Cheng, 2008). Studies addressing romantic relationship aggression and attitudes among adolescents have found concurrent associations between endorsing less healthy attitudes about relationships and use of aggression within romantic relationships (Fering, Deblinger, Hoch-Espada, & Haworth, 2002), and between physical aggression beliefs and behaviors (Muñoz-Rivas, Gámez-Guadix, Fernández-González, & Lozano, 2011).

In their review, Avery-Leaf and Cascardi (2002) noted that across research studies that examined aggression attitudes and behavior there is a consistent significant link between believing aggression is acceptable and using physical aggression in dating relationships; this association is particularly consistent for male adolescents. Using a longitudinal design, Nash and Kim (2007) examined associations between beliefs legitimizing aggression and use of serious physical aggression by adolescents and young adults. The belief that aggression is acceptable was associated positively with the use of serious aggression by the younger adolescents in the sample. The authors argued that reducing the belief that aggression is acceptable can help prevent use of aggression by adolescents

Intervention

Relationship violence interventions targeting adolescent populations have shown modest success, with the greatest effectiveness in the area of showing changes in attitudes about aggression. However, in most studies changes in attitudes are not been sustained over time (Avery-Leaf & Cascardi, 2002). Avery-Leaf and Cascardi argue for global approaches to dating violence prevention, with school-based settings being highly desirable. They note that school settings permit incorporating dating violence prevention into existing courses, and are cost-effective when school personnel can be trained to deliver the programs. Delivery by school personnel ensures that messages are reinforced over time and allow for modeling of effective skills. They also note that prevention programs should be gender-neutral especially when addressing coed groups of students. Providing the programming to a broad audience of youth also can truly prevent some youth from ever engaging in dating violence, it also can reach high risk youth that may not willingly participate in programs designed for high risk/violent youth.

Efforts to educate adolescents about healthy relationships were found to improve adolescents' understanding of how relationships function (Adler-Baeder**,** Kerpelman, Schramm, Higgenbotham, & Paulk, 2007; Gardner, et al., 2004). Such educational efforts also have been successful in building skills associated with maintaining healthy relationships, (Gardner & Boellaard, 2007; Kerpelman, et al., 2009), and have helped adolescents decrease their verbal aggression toward dating partners (Adler-Baeder et al., 2007), as well as increase adolescents' conflict management skills (Kerpelman et al., 2008, 2009, 2010). However, to our knowledge, no evaluation of youth-focused relationship education has examined whether it reduces adolescents' use of physical aggression within their dating relationships. Given the strong links between prior physical aggression being associated with subsequent physical aggression,

attitudes about the acceptability of relationship aggression remaining stable over time, and the concurrent positive relationship between the attitude that relational aggression is acceptable and the use of physical regression in dating relationships, it is important to determine whether educating adolescents about healthy relationships influences their attitudes and use of physical aggression and whether such education affects aggression beliefs and behaviors over time.

Goals of the Current Study

The current study aimed to determine the influence of youth-focused relationship education on adolescents' use of physical aggression within their dating relationships over a two year period following the educational intervention. Specifically, the influence of adolescents' knowledge gained from the educational program on their attitudes about using physical aggression (concurrently and longitudinally) were examined. In addition the concurrent and longitudinal associations between attitudes about aggression and the use of physical aggression toward a dating partner were assessed.

Method

Participants

A total of 2427 high school students in 140 health classes at 39 public high schools in a Southern state, participated in an evaluation study of the Relationship Smarts *Plus* (RS+) curriculum (Pearson, 2007). Of these participants, 1439 were in the 73 test classes distributed across 22 schools and 988 participants were in control classes. Because a main focus of the current study is evaluating the impact of the curriculum in terms of relationship knowledge gains among those who received the curriculum, our analysis sample is limited to the test-group participants. Due to varied data problems (e.g., obvious response set or discrepant self-

descriptions across waves), 38 participants were excluded from the analysis leaving 1401 in the analysis sample.

Health classes are required for all public high school students in the State, and are typically taken in the 10th grade. Therefore, the sample at pre and post-test represents well the demographics of public school 10th graders. Two follow-up surveys also were conducted respectively one and two years later. The sample sizes for these two follow-up surveys are substantially smaller due largely to random causes connected to logistical problems encountered in re-contacting participants in some school systems and the voluntary nature of the request for participation in the follow-ups. In addition, however, 210 participants who were in the 11th and 12th grade when they took their health class may well have "aged out" of the sample before the study concluded. The sample for the first follow up included 181 participants (12.9% of those eligible) and the second follow up included 173 participants (12.3% of those eligible).

At the time of the intervention, the sample was 52% female, 48% African American and 43% White. Participants had an average age of 16.6 years (SD = 0.94). Nearly 60% of the sample was eligible for the free or reduced lunch program, suggesting most students came from low-to-middle income families. Approximately 22% lived with a single parents and another 28.5% lived at least part of the time with a step-parent. In the follow-up waves, females (65% and 56%), and African American participants (53% and 48%) continued to retain their slight majorities.

Procedure

Participating teachers were randomly assigned to test or control conditions. Test teachers then received a 2-day orientation to the curriculum and evaluation procedures, and were monitored and supported through regular telephone and e-mail communication by project staff from pre-test, through the intervention and on to the post-test. The relationship education lessons

were implemented by the test teachers across the semester; when teachers had questions about the material, project staff answered questions and provided needed information.

All teachers, test and control, received packets with all pre- and post-test materials contained in individualized envelops labeled with their students' names. All contents of each student's envelope were identified only by the student's unique identification number. Pre-test surveys were collected in the class period preceding the implementation of the 13 lesson curriculum and post-test surveys were collected in the first class period following the last lesson. When pre and post data collections were completed, the paper booklets were mailed in a pre-addressed, postage-paid envelop to the researchers.

The two follow-up surveys occurred, respectively, one and two years after the health class intervention. At each round of follow up, multiple attempts were made to recontact each original participant at their school and to invite them to complete a brief follow-up survey on line. This process involved providing schools with names of original participants. School staff were asked to contact the students while at school and during a free period when they could go to the school's computer lab to complete the survey. The students who participated were strictly volunteers who received no incentive for their cooperation. All participants completed IRB approved parental consent/student assent forms prior to participating in the study.

Measures

Physical aggression. At each data collection (pre, post, follow-up 1 and 2) two items from the Revised Conflict Tactic Scale (Straus, Hamby, Boney McCoy, Sugarman, 1996)were used to assess physical aggression. The instructions asked participants to report on their current relationship if they were in one or their most recent relationship if not currently in one. The time focus was limited to the most recent month (for current relationships) or the final month (for past

relationships). Like Straus' instructions, ours noted that, "No matter how well partners in a relationship get along, there are times when they disagree. How often have you used the following behaviors during an argument with your partner: (a) Pushed grabbed or shoved him or her, (b) Kicked, bit or hit him or her with a fist." (Verbal aggression items were also asked but are not part of the current study.) Participants answered on a four point scale where 0 meant never, 1 meant once, 2 meant twice, and 3 meant 3 or more times within the relevant month long period. Means and standard deviations for all variables at each wave are given in Table 1. The correlations between the pairs of items within each wave ranged from 0.71 to 0.80 suggesting good reliability.

Disapproval of aggression. Each survey included three items intended to evaluate attitudes toward aggression. These items tapped the degree to which participants considered aggression an appropriate or acceptable strategy for ending a conflict with a partner. A sample item is, "There are certain circumstances when kicking, biting or punching a dating partner is acceptable." Participants responded on a 5-point Likert-type scale coded so that higher scores indicated an attitude toward aggression that was more disapproving. Alpha coefficients were 0.64, 0.78, 0.75, and 0.77, respectively, for pre-test, post-test, first and second follow-up.

Curriculum-linked relationship knowledge. At the post-test, retrospective pre-post assessments (see Davis, 2003; Lam & Bengo, 2003; Pratt, McGuigan, & Katzev, 2000; Rockwell, & Kohn, 1989) were used. Thirty-four items addressing salient themes and topics of the curriculum were posed twice, in the following way: (a) "Before participating in the curriculum (_X_) was poor, fair, good, excellent" and (b) "After participating in the curriculum (_X_) was poor, fair, good, excellent." An example item is, "My awareness of differences between healthy and unhealthy relationships." Two scores were calculated based on these

responses. First, **perceived knowledge** was the mean of the 34 "before" items. It reflected participant's views of what they knew initially. Second, **perceived gain** was the mean of the 34 *after* items minus the *before* items. Perceived gain, therefore, reflected the perceived impact of the curriculum.

For the two follow-up surveys, 12 multiple-choice items asked content questions related to curriculum themes and topics. The same items were used in both follow up surveys. An example item is, "One principle of a smart relationship is: (a.) look for common interests, (b.) change yourself to fit with the other person, (c.) avoid conflict." Each item had three choices. Participant knowledge scores were the number of correct answers.

Analysis Strategy

The dataset contained up to four observations for each individual (pre-test, post-test, follow-up 1 and follow-up 2). Our analysis progressed under the hypotheses that at each wave of data collection physical aggression would be influenced by past use of physical aggression as well as current and past attitudes about aggression. Similarly, current attitudes toward aggression would be influenced by prior attitudes toward aggression, prior aggression and one's current knowledge about relationships. Within a time frame, knowledge was modeled as a predictor of current attitudes, which, in turn, predict behavior. The analysis, therefore, was a longitudinal path model with stabilities in aggression and attitude scores estimated from wave to wave. Cross-lag parameters were also estimated whereby attitudes about aggression at wave *i* predicted aggression at wave *i+1* and aggression at wave *i* predicted attitudes about aggression at wave *i+1*.

We used M-Plus (Muthen & Muthen, 2009) for our analysis. A strength of M-Plus is that randomly missing data are not problematic. They are not ignored as with pairwise deletion nor

are cases lost as with listwise deletion of missing data. Rather, the procedure "borrows" information from the data that are available (Singer & Willett, 2003). Consequently, substantial loss of statistical power does not result from sample attenuation. Since only 5% of cases were seniors at the time of curriculum exposure and 11% were juniors, the great majority of missing data was apparently due to simple attrition linked to logistical issues at some schools and the voluntary nature of the follow-up activities.

Results

Regression coefficients reveal the expected pattern that physical aggression and attitudes toward aggression are significantly related across time (see Figure 1). These standardized stability coefficients ranged from 0.39 to 0.47 for physical aggression and from 0.20 to 0.35 for attitudes disapproving of aggression. This indicates that individuals who reported higher rates of aggression at one time point were also likely to report higher rates of aggression at other time points, other things being equal. Similarly, individuals who at one point were more disapproving of the use of aggression were also likely to be disapproving at other times. Note, however, that these associations were not strong. In fact, they would be generally classified as small to moderate in strength. Therefore, within the trend of stability, there is actually considerable diversity of behavior and attitude over time suggesting that high school aged adolescents are not settled in either pattern. However, the pattern for aggressive behavior may be slightly more stable than the pattern for attitudes in this sample.

At pre-test, disapproval of aggression and use of aggression were correlated significantly ($r = -0.24$, $p < 0.001$). At post-test and both follow-up waves, disapproving attitudes were statistically significant predictors of reported amounts of physical aggression. These standardized coefficients ranged from -0.18 to -0.31 and indicated that at each wave those whose disapproval

of aggression was a standard deviation higher reported approximately a fifth to a third of a standard deviation less aggression. Overall, therefore, people who disapproved more strongly of physical aggression as a conflict management strategy appeared to use less of it. The strength of this attitude-behavior link was small-to-moderate as the literature on attitude-behavior linkages would lead one to expect (Ajzen & Fishbein, 1977).

Perhaps the most important findings of the current study were the small-to-moderate associations between knowledge gained from the relationship curriculum and concurrently measured attitudes about aggression. Greater perceived knowledge gains at post-test (controlling for the knowledge participants felt they already had before the curriculum) were associated with attitudes more disapproving of aggression. One and two years later, greater knowledge assessed as objective questions about the content of the curriculum was again associated with more disapproving attitudes toward aggression. Neither the retrospective pre-post questions nor the follow-up relationship knowledge questions were designed to ask specifically about aggression. Rather, these questions ranged broadly across the relationship education themes of the curriculum. Nevertheless, those who felt they had gained more from the curriculum at post-test and who remembered more about it at follow-up assessments were more critical of the use of aggression as a solution for relationship conflict. These standardized coefficients began small at post-test, but seemed to strengthen with time. By the second follow-up, the association was 0.45, almost twice that seen at the first follow-up.

The three waves of data collected after the conclusion of the curriculum, therefore, appear to present a consistent picture. Previous aggression and previous attitudes predict current reports of both; current disapproving attitudes toward aggression are negative predictors of current aggression; and greater relationship knowledge predicts greater disapproval of

aggression. What remains to be considered are the cross-lagged associations between earlier aggression and subsequent attitudes, on one hand, and between earlier attitudes and subsequent aggression on the other.

The cross-lagged associations from one wave to the next between aggressive behavior and disapproving attitudes present an interesting pattern. From pre-test to post-test and from post-test to first follow-up, earlier aggression was a negative predictor of later disapproval of aggression. That is, more aggressive youth were less disapproving of using aggression. At the final wave (second follow-up), however, this association was no longer significant. In other words, it appears that over time for those who participated in a relationship curriculum, earlier aggression went from a significant to a non-significant predictor of disapproving attitudes toward aggression. For the cross-lagged associations between earlier disapproval of aggression and later reports of aggression, the pattern was almost the opposite. From pre-test to post-test and from post-test to first follow-up, earlier attitudes did not predict later reports of aggression. From first to second follow-up, however, early disapproval of aggression was not only a significant predictor of later reports of aggression (β = -0.29) but it appeared as strong a predictor as concurrent disapproval (β = -0.22). Where earlier aggressive behavior appeared to become less predictive of subsequent disapproval over time, it seems that earlier and concurrent disapproval joined to predictor aggression for participants in a relationship education program.

It is always important to confirm that a pattern of findings are robust when important demographic controls are implemented. Consequently, the model was fit again adding gender, ethnicity (majority *vs*. minority ethnic status), and eligibility for the free or reduced school lunch program (a SES indicator) to each equation. Gender was a significant contributor to disapproval of aggression at post-test and both follow-up waves. Consistently, females were more

disapproving of aggression as a conflict resolution strategy than males. However, at first follow-up, females also reported more aggression than boys. The only other significant association for a demographic control was at second follow-up where students eligible for the free or reduced school lunch program were significantly less disapproving of aggression than others. Overall, however, with the control variables in the model the pattern of findings remained. Two small changes were noted. The attitudinal stability from post-test to first follow-up became non-significant and the cross-lag association of disapproval at first follow-up with actual reports of aggression at second follow-up went from statistically significant (p =0.04) to marginally significant (p = 0.10). Aside from these two small changes, all significant parameters remained significant and all non-significant parameters remained non-significant.

Discussion

The overall findings of the current study indicated that educating adolescents about healthy relationships increased their perceived knowledge and perceived knowledge gain at post program, and this knowledge was associated with stronger disapproval of aggression within dating relationships at post-program. Post-program disapproval of aggression was associated concurrently with lower use of physical aggression toward a dating partner. Adolescents' healthy relationship knowledge at one year and two years post-program was associated concurrently with disapproval of the use of aggression toward a dating partner, and disapproval of aggression was associated concurred as well as longitudinally (from one year to two years post program) with actual use of physical aggression toward a dating partner. Taken together these findings suggest that relationship education does strengthen disapproval of relational aggression, which in turn is related to lower use of physical aggression toward a dating partner.

Consistent with other studies, we found a significant association between attitudes about the acceptability of aggression and the actual use of physical aggression toward a dating partner (Fering, Deblinger, Hoch-Espada, & Haworth, 2002; Goldstein & Tisak, 2010; Nash & Kim, 2007). One of our most important findings was the association between curriculum-based knowledge gains and attitudes about aggression. That is, greater knowledge gained about healthy relationship functioning was associated with greater disapproval of aggression. Focusing on attitudes in intervention efforts is viewed as an important avenue for relationship aggression prevention (Avery-Leaf & Cascardi, 2002) and sets the stage for later changes in behavior (i.e., less perpetration of aggressive behavior toward a dating partner).

Our approach, providing a school-based delivery of relationships education lessons facilitated by teachers within their existing Family and Consumer Science or Health classes, is consistent with recommendations of Avery-Leaf and Cascardi (2002) who advocate targeting general adolescent populations rather than only high risk adolescents. Having teachers trained in the curriculum permits sustained delivery of the lessons across the semester and permits ongoing discussion among the students with the teacher and each other about the relationship education content. The relationship lessons focus primarily on knowledge acquisition and attitude change, along with skill building and opportunities to practice new behaviors. Importantly, our study demonstrates the importance of collecting follow up data that offer the capacity to observe behavior change. The association between attitudes and behavior was seen well after the program was concluded. When educating adolescents, it is important to permit time for them to use their new knowledge in their real life experiences. It is only then that behaviors associated with attitude change can be observed.

The current study was limited in several areas. All data were self-reported by the participating adolescent. An improvement to the design might include data collected from relationship partners or from others who have the opportunity to engage with the adolescent and observe the adolescent's behavior. Another limitation is the attrition that occurred during the one and two year follow up assessments; however, our analytic approach took advantage of all available information without requiring deletion of cases with missing data.

Taken together, the findings of the current longitudinal study add to the growing literature addressing the prevention of adolescent dating aggression. Learning about relationships through the school-based delivery of lessons by trained teachers in their regularly scheduled classes enhanced adolescents' understanding of what makes relationships healthy and unhealthy, increasing the adolescents' disapproval of dating aggression. Future research should examine whether specific areas addressed within curricula are particularly important for changing attitudes about aggression. Efforts to enhance the effectiveness of relationship education curricula to change adolescents' knowledge and attitudes about aggression and effect changes in their actual behaviors continue to be a critical need that supports both current adolescent adjustment and the future trajectories of their dating and marital relationships.

References

Ackard, D. M., Eisenberg, M. E., & Neumark-Sztainer, D. (2007). Long-term impact of adolescent dating violence on the behavioral and psychological health of male and female youth. *The Journal of Pediatrics, 151*, 476-481.

Ajzen, I., and Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84*, 888-918.

Avery-Leaf, S., & Cascardi, M. (2002). Dating violence education: Prevention and early intervention strategies. In. P. A. Schewe (Ed.), *Preventing violence in relationships: Interventions across the life span,* (pp. 79- 105), Washington, D.C.: American Psychological Association.

Banyard, V. L., & Cross, C. (2008). Consequences of teen dating violence: Understanding intervening variables in ecological context. *Violence Against Women*, 14, 998-1013. doi: 10.1177/1077801208322058

Beyers, W., & Seiffge-Krenke, I. (2010). Does identity precede intimacy? Testing Erikson's theory on romantic development in emerging adults of the 21st century. Journal of Adolescent Research, 25, 387–415. DOI: 10.1177/0743558410361370

Brezina, T. (2010). Anger, attitudes, and aggressive behavior: Exploring the affective and cognitive foundations of angry aggression. *Journal of Contemporary Criminal Justice, 26*, 186-203. DOI: 10.1177/1043986209359849

Crick, N.R., & Grotpeter, J. K. (1995) Relational aggression, gender and social-psychological adjustment. *Child Development, 66*, 710-722.

Davis, G. (2003). Using a retrospective pre-post questionnaire to determine program impact. *Journal of Extension* [On-line], 41(4) Article 4TOT4. Available at: http://www.joe.org/joe/2003august/tt4.php

Dyk, P. A., & Adams, G. R. (1987). The association between identity development and intimacy during adolescence: a theoretical treatise. Journal of Adolescent Research, 2, 223–235. DOI: 10.1177/074355488723004

Ellis, W. E., Crooks, C. V., & Wolfe, D. A. (2009). Relational aggression in peer and dating relationships: Links to psychological and behavioral adjustment. *Social Development, 18*, 253-269. doi: 10.1111/j.1467-9507.2008.00468.x

Fering, C., Deblinger, E., Hoch-Espada, A., & Haworth, T. (2002). Romantic relationship aggression and attitudes in high school students: The role of gender, grade, and attachment and emotional styles. Journal of Youth and Adolescence, 31, 373-385. DOI: 10.1023/A:1015680625391

Foshee, V. A., Reyes, H. L. M., Ennett, S. T. (2010). Examination of sex and race differences in longitudinal predictors of the initiation of adolescent dating violence perpetration. *Journal of Aggression, Maltreatment & Trauma, 19*, 492-516.

Fritz, P. A. T., Slep, A. M. S. (2009). Stability of physical and psychological adolescent dating aggression cross time and partners. *Journal of Clinical Child and Adolescent Psychology, 38*, 303-314. DOI: 10.1080/15374410902851671

Giordano, P. C., Soto, D. A., Manning, W. D., & Longmore, M. A. (2010). The characteristics of romantic relationships associated with teen dating violence. *Social Science Research, 39*, 863-874. DOI: 10.1016/j.ssresearch.2010.03.009

Goldstein, S., & Tisak, M. (2010). Adolescents' social reasoning about relational aggression. *Journal of Child and Family Studies*, *19*(4), 471-482.

Henry, D. B., Farrell, A. D., Schoeny, M. E., Tolan, P. H., & Dymnicki, A. B. (2011). Influence of school-level variables on aggression and associated attitudes of middle school students. *Journal of School Psychology, 49*, 481-503. DOI 10.1016/j.jsp.2011.04.007

Herrenkohl, T., Catalano, R., Hemphill, S., & Toumbourou, J. (2009). Longitudinal examination of physical and relational aggression as precursors to later problem behaviors in adolescents. *Violence and Victims, 24(1)*, 3-19.

Howard, D. E., Wang, M. Q., & Yan, F. (2007). Psychosocial factors associated with reports of physical dating violences among U. S. adolescent females. *Adolescence, 42,* 311-324.

Jouriles, E. N., Wolfe, D. A., Garrido, E., & McCarthy, A. (2006). Relationship violence. In D. A. Wolfe, & E. J. Mash (Eds.), *Behavioral and emotional disorders in adolescents: Nature, assessment, and treatment* (pp. 621-641), New York, NY: Guilford.

Jouriles, E., Garrido, E., Rosenfield, D., & McDonald, R. (2009). Experiences of psychological and physical aggression in adolescent romantic relationships: Links to psychological distress. *Child Abuse & Neglect*, *33*(7), 451-460.

Kerpelman, J. L., Pittman, J. F., Saint-Eloi Cadely, H., Tuggle, F. J., Harrell-Levy, M. K., & Adler-Baeder, F. M.(2012). Identity and intimacy during adolescence: Connections among identity styles, romantic attachment and identity commitment. *Journal of Adolescence, 35,* 1427-1439. DOI: 10.1016/j.adolescence.2012.03.008

Lam, T. C., & Bengo, P. (2003). A comparison of three retrospective self-reporting methods of measuring change in instructional practice. *American Journal of Evaluation, 24*, 65–80.

Markstrom, C. A., & Kalmanir, H. M. (2001). Linkages between the psychosocial states of identity and Intimacy and the ego strengths of fidelity and love. *Identity: An International Journal of Theory and Research, 1*, 179-196. DOI: 10.1207/S1532706XID0102_05

Montgomery, M. J. (2005). Psychosocial intimacy and identity: from early adolescence to emerging adulthood. *Journal of Adolescent Research*, *20*(3), 346–374. DOI: 10.1177/0743558404273118

Muñoz-Rivas, M. J., Graña, J., O'Leary, K. D., & González, M. P. (2010). Aggression in adolescent dating relationships: Prevalence, justification, and health consequences. *Journal of Adolescent Health, 40*, 298-304.

Nocentini, A., Menesini, E., & Pastorelli, C. (2010). Physical dating aggression growth during adolescence. *Journal of Abnormal Child Psychology, 38*, 353-365.

Nocentini, A., Menesini,E, Pastorelli,C., Connolly, J., Pepler,D, & Craig, W. (2011). Physical dating aggression in adolescence: Cultural and gender invariance. European Psychologist, 16, 278–287. DOI:10.1027/1016-9040/a000045

Pittman, J. F., Keiley, M. K., Kerpelman, J. L., & Vaughn, B. E. (2011).Attachment, identity, and intimacy: Parallels between Bowlby's and Erikson's paradigms. *Journal of Family Theory and Review, 3,* 32-46. DOI: 10.1111/j.1756-2589.2010.00079.x

Pratt, C. C., McGuigan, W. M., & Katzev, A. R. (2000). Measuring program outcomes: Using retrospective pretest methodology. *American Journal of Evaluation, 21*(3), 341-349.

Pronk, R.E. and Zimmer-Gembeck, M. J. (2010) Its “mean,” but what does it mean to adolescents? Relational aggression described by victims, aggressors, and their peers. *Journal of Adolescent Research, 25* (2), 175-204

Rockwell, S. K., & Kohn, H. (1989). Post-then-pre evaluation. *Journal of Extension* [On-line], 27(2) Article 2FEA5. Available at: http://www.joe.org/joe/1989summer/a5.php

Solomon, B. S., Bradshaw, C. P., Wright, J., & Cheng, T. L. (2008). Youth and parental attitudes toward fighting. Journal of Interpersonal Violence, 23, 544-560. DOI: 10.1177/0886260507312947

Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactic Scales. *Journal of Marriage and the Family, 41,* 75-88.

Straus, M. A., Hamby, S. L., Boney McCoy, S., Sugarman, D. S. (1996). The revised conflict tactics scales (CTS2): Developmental and preliminary psychometric data. *Journal of Family Issues, 17*(3), 283-316. DOI: 10.1177/019251396017003001

Whitaker, D., Le, B., & Niolon, P. (2010). Persistence and desistance of the perpetration of physical aggression across relationships: Findings from a national study of adolescents. *Journal of Interpersonal Violence*, *25*(4), 591-609.

Table 1. Descriptive statistics for all constructs at each wave.

	Pre-test Mean (SD)	Post-test Mean (SD)	Follow-up 1 Mean (SD)	Follow-up 2 Mean (SD)
Physical aggression	0.29 (0.71)	0.28 (0.64)	0.49 (0.94)	0.42 (0.83)
Disapproval of aggression	4.52 (0.75)	4.56 (0.73)	4.64 (0.76)	4.40 (1.10)
Curriculum based knowledge				
Perceived knowledge	3.33 (0.52)	----	----	----
Perceive gain	----	0.47 (0.59)	----	----
Relationship knowledge	----	----	7.41 (1.91)	7.45 (2.48)