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Cognitive-Behavioral Group Therapy for Hong Kong Students that Engage in Bullying

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Ashley HUTCHISON⁴

Abstract

Research on the effectiveness of cognitive-behavioral therapy to reduce aggressive behaviors failed to take into account the potential importance of including content targeting types of aggression. This study addressed this gap by evaluating the effectiveness of such an intervention for Hong Kong secondary students that engage in proactive aggressive behavior or bullying. Using screening procedures, 63 high-risk proactive aggressors (bullies) were identified from 5,025 students and randomly assigned to treatment groups. A significant MANOVA was discovered when 46 participants' proactive, reactive, verbal, and physical aggression scores were compared before treatment and at four follow-up assessments after treatment. Proactive, reactive, and physical aggression decreased from pre-test to one-year follow-up suggesting the cognitive-behavioral program was effective. Based on a second MANOVA, however, it was found the program did not lead to increased levels of empathy for the participants. Implications for research on aggression, and programs to reduce aggression such as bullying of secondary school students in Hong Kong and elsewhere are presented.

Keywords: cognitive behavioral group therapy; bullying; youth; Hong Kong; aggression; empathy;

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Introduction

School bullying is a problem worldwide warranting extensive research. Numerous anti-bullying programs have been implemented. Most of these programs, however, were limited in their effectiveness (e.g., Ryan & Smith, 2009). This may be explained by the fact that children in prior programs were often classified as “aggressive,” without further differentiating this behavior. Aggressive behaviors though can be classified into reactive and proactive aggression based on their features (Cima & Raine, 2009; Dodge & Coie, 1987). Proactive aggression typically involves bullying others in an organized, rational, and instrumental fashion, without demonstrating empathy for the victim (Brendgen, Vitaro, Boivin, Dionne, & Perusse, 2006). Reactive aggression, in contrast, is characterized as an impulsive, fear-induced, affective defensive response to a hostile provocation stemming from a lack of self-control (Raine et al., 2006).

Based on a literature review, Vitello and Stoff (1997) concluded child aggression can be dichotomized as two distinct types: 1. impulsive, reactive, hostile, and affective; and 2. controlling, proactive, instrumental, and predatory. Therefore, a clear distinction between these two types of aggression may be necessary to implement effective interventions. Little and colleagues (2003) also distinguished between subtypes of aggression by administering a scale to assess four principle dimensions: overt, relational, instrumental, and reactive aggression. This measure was given to 1,723 German adolescents (grades 5 to 10). The scale’s internal validity was strong and the device seemed to capture discrete forms (overt and relational) and functions (instrumental and reactive) of aggression subtypes. This study provided support for subtypes of aggression for youth outside the United States (U.S.).

Research also has revealed that reactive and proactive aggression follows different developmental trajectories and affect students’ psychosocial development in diverse ways. Reactive aggression, for example, has been linked to depression, attention deficit disorders, and the lack of interpersonal skills, especially in peer relationships (Vitaro, Brendgen, & Tremblay, 2002). In contrast, proactive aggression has been associated with delinquency and inflated self-perceived social competence (Orobio de Castro, Brendgen, Van Boxtel, Vitaro, & Schaeppers 2007). Studies also have found that proactive aggression is related to positive outcome expectancies and actual instrumental rewards linked with aggression that are likely to be learned through past positive experiences of aggressive behavior (Crick & Dodge, 1996; Fite & Colder, 2007).

Since reactive and proactive aggression differs in its foundation and correlates, it is possible programs that address such differences will be more effective. Past programs have not included, however, content to target types of aggression. For example, since proactive aggression is associated with antisocial behaviors

(Kumpulainen & Rasanen, 2000), it seems critical to explore the effectiveness of a program designed for proactive aggressors.

Cognitive-Behavioral Group Therapy for Proactive Aggressors

In response to this need, this study evaluated the effectiveness of a school based cognitive-behavioral group program designed to treat proactive aggressors. This program was grounded in cognitive models that explain proactive aggression. This model was selected because of its reported effectiveness when treating aggression and the importance of cognitive factors in the development of proactive aggression.

Social Information Processing (SIP) Model

Based on this model (Crick & Dodge, 1994; Dodge, 1986), it was proposed that proactive aggression was connected to problems in later stages of social information (Crick & Dodge, 1996; Dodge, Lochman, Harnish, Bates, & Pettit, 1997) or cognitive processing, while reactive aggression was associated with problems in early stages of such processing. Dodge et al. (1997) found support for this claim reporting that proactive aggressive school children anticipated more positive consequences for aggressing as compared to reactive aggressive children. Further, they discovered that proactive as contrasted with reactive aggressors were more likely “to expect that the commission of an aggressive act toward a peer would lead to the reduction of aversive behavior by that peer” (p. 49). Each of Dodge et al.’s outcomes involving proactive aggressors just mentioned reflected problems in later stage social information processing for this specific group of aggressive school children.

When applying a SIP model to the treatment of aggression, Fraser and colleagues (2005) implemented a school-based program with three groups of 3rd graders to promote social competence and decrease aggressive behavior by aiming to strengthen children’s social information processing and emotion regulation skills. When compared to children in the routine condition, children in the treatment conditions (received curriculum to promote social competence and decrease aggressive behaviors) were rated by parents and teachers lower on social and overt aggression and higher on social competence. Results suggested prevention programs may be able to strengthen social-emotional skills that might reduce or produce changes in aggressive behavior. Based on these findings, our study integrated the SIP model in the treatment of proactive aggressors. The current cognitive-behavioral group program, therefore, was designed to alter proactive aggressive Hong Kong secondary students’ errors in social information processing by disputing their irrational beliefs and replacing them with rational ones. It was expected that once students developed rational beliefs their levels of physical, verbal, proactive, and reactive aggression would decrease.

Empathy and Proactive Aggression

In addition to incorporating the SIP model when designing the treatment for this study, our program included strategies to address proactive aggressors' level of empathy. Research suggests aggressive children may be different in their ability to feel empathy and how they interpret potentially negative consequences, and they may exhibit less prosocial behavior (Warden & Mackinnon, 2003) and express more aggression and social withdrawal (Findlay, Girardi, & Coplan, 2006). Evidence also suggests a possible connection between proactive aggression and the failure to emit empathic responses. Cohen and Strayer (1996) found adolescents diagnosed with conduct-disorder, in comparison to other teens, were less likely to recognize others' emotions. Blair (1999) also reported teens high in psychopathy had more trouble in noticing sadness and fear; emotions considered central in reducing aggressive tendencies.

Proactive aggression has been associated with the under-regulation of emotion and low emotional intensity as well. The combination of these characteristics may be related to low levels of sympathy or personal distress in the face of others' pain. Proactive aggressors, in fact, appear to lack the appropriate amount of emotional arousal to trigger sympathetic capabilities needed to inhibit aggressive acts (Eisenberg & Fabes, 1992). It was expected that taking part in our group program would increase our participants' empathic responses.

Method

Participants

The project was promoted in 92 Hong Kong schools as a leadership-training program to avoid a labeling effect on the aggressors. Ten secondary schools were randomly selected to participate. Initially, 5,025 secondary students completed a screening measure once consent from their parents or guardians was secured. Students also agreed to participate in the study. The criteria to select students for the program was based on their scores on the Child Behavior Checklist-Youth Self-Report (CBCL-YSR) aggressive behavior, attention problem, and delinquency subscales, and the Reactive and Proactive Aggression Questionnaire (RPQ) proactive aggression subscale. Students with a CBCL-YSR aggressive behavior score greater than the clinical cutoff score (male ≥ 19 , female ≥ 18) were identified as aggressors. Among these aggressors, students with a RPQ proactive aggression score one standard deviation above the mean, or with both CBCL-YSR attention problem and delinquency scores one standard deviation above the mean were further classified as proactive aggressors. Further, teachers nominated students displaying potential proactive aggressive behaviors.

Based on these criteria, 119 students were selected for an individual pre-test screening interview. These students were asked a series of situational questions to assess their cognitions associated with aggression. Five scenarios were presented to the students during the interview. The research team created these scenarios (e.g., fight between two classmates during recess). Students' reactions to each scenario were not the focus of the interview. Instead, why students reacted in a particular way was of interest. This information determined whether the student was a proactive aggressor. Each scenario was presented and followed by questions focusing on gathering students' perceptions of the environmental cues, and their attributions, outcome expectations, and behavioral responses associated with the scenario. Based on the screening interview, sixty-three students (38 males & 25 females) aged 11 to 17 years old ($M = 13.6$, $SD = 1.23$) who displayed proactive aggression in the interview were randomly assigned to a treatment group. No other exclusion and inclusion criteria were used in the current study.

Procedures

Permission to conduct the study was obtained from the first author's university ethics committee. Students were not given any incentive to take part in the study. They completed the RPQ, CBCL-YSR, Interpersonal Reactivity Index (IRI), Aggression Questionnaire (AQ), Relational Aggression Subscale (Crick & Grotpeter, 1995), and Peer Victimization Questionnaire. Given the purposes of the latter two scales, responses were not included in the analyses performed in this study. Following treatment, there were five follow-up assessments (post-test, three-month, six-month, one-year, and two-year follow-up) employing the same format as the pre-test. Attrition rates for the follow-up assessments were as follows: 3.2% at post-test, 4.8% at three-month, 15.9% at six-month, 20.6% at one-year, and 58.7% at two-year follow-up. Given the very high attrition rate at two-year follow-up, this data was not included in the tests of our hypothesis. Thus, the final sample used in the analysis included 46 students (29 males; 17 females).

Intervention Implementation

The cognitive-behavioral group therapy program featured ten group sessions of one and a half hours each. Each session included about nine students and was led by two Hong Kong mental health professionals. In session 1, students shared comments about their relationship with their teachers and life at school and group expectations were established. In sessions 2 to 4, students' aggressive behavior learning history was obtained, and their goals linked with exhibiting aggressive behaviors, the reinforcers of their aggressive behaviors, and their emotional experiences were assessed through role-play, video recordings, and discussion.

In session 5, students learned the A-B-C paradigm of cognitive-behavioral therapy and their irrational beliefs were explored, while in session 6, they were taught to recognize the negative consequences of their aggressive behaviors. In session 7, students were presented with a bullying case and asked to consider the perspectives of different people in a role-play. In session 8, students learned the concept of sensibility; questions and cognitions designed to dispute irrational beliefs, while in session 9 they received empathy training. The last session integrated the learning from the previous sessions. For details about the content of the groups, the interested reader is referred to a manual developed as part of Project CARE (Fung, 2008). A summary of this manual also can be found on line (<http://www6.cityu.edu.hk/projectcare>).

It should be noted that the professionals who led the groups worked closely with the participating schools. Before each session began, these individuals ensured that the treatment venue was safe for the participants. For example, items that were considered dangerous (e.g., glasses, scissors, other sharp items) were removed. In addition, rules were established for the participants in the first session such as requiring them to ask the group leaders for permission to leave the room to use a bathroom during the session.

Instruments

The *RPQ* (Raine et al., 2006) is a 23-item rating scale utilized to measure students' self-perceived levels of reactive (11 items) and proactive (12 items) aggressive behavior. Each item is accompanied by a 3-point Likert scale (0 = "never," 1 = "sometimes," 2 = "often"). Raine et al reported internal consistency for adolescent boys for proactive aggression (.86), reactive aggression (.84), and total aggression (.90). They also provided evidence for the *RPQ*'s convergent, discriminant, criterion, and construct validity, as well as support for a significant fit for the two-factor, proactive-reactive aggression solution.

For this study, the *RPQ* was translated into Chinese and back-translated into English by persons proficient in both languages. The back-translation was checked for accuracy by an English speaking expert in the *RPQ*. Minor changes in wording were required (for details see Fung & Wong, 2007). Fung and Wong reported coefficient alphas of .89, .88, and .83 (total, proactive, & reactive aggression, respectively). These researchers also reported that aggression scores in their total sample were as follows: proactive, $M = 1.33$, $SD = 2.59$, reactive, $M = 4.71$, $SD = 3.81$, and total, $M = 6.03$, $SD = 5.72$. When performing a confirmatory factor analysis, Fung, Raine, and Gao (2009) replicated the two factor (proactive and reactive aggression) *RPQ* solution with a Chinese population.

The *AQ* (Buss & Perry, 1992) is a 29-item scale that assesses types of aggressive behavior. Items are accompanied by a 7-point Likert scale (1 = extremely uncharacteristic of me; 7 = extremely characteristic of me). Given the purpose of

this study, two AQ subscales, “physical aggression” (9 items; e.g., “Once in a while I can’t control the urge to strike another person”) and “verbal aggression,” (7 items; e.g., “I can’t help getting into arguments when people disagree with me”) were administered while two others were not (Hostile and Anger subscales). An initial study of the reliability of the AQ (Buss & Perry, 1992) was performed with 1,253 participants. The alpha coefficients for the two subscales used in the present study were: Physical Aggression, .85 and Verbal Aggression, .72. Test-retest reliability over the course of 9 weeks was also assessed with a group of 372 participants. The obtained correlations were: physical aggression, .80; verbal aggression, .76; anger .72; hostility, .72.; and total score, .80.

The *IRI* (Davis, 1980) is a self-report empathy scale with 28-items accompanied by a 5-point Likert scale (1 = extremely uncharacteristic of me to 5 = extremely characteristic of me). Seven items load on each of four subscales: Perspective taking (PT), Fantasy (FS), Empathic Concern (EC), and Personal Distress (PD). The PT subscale assesses the tendency to incorporate the perspective of others in everyday life (e.g., “I sometimes find it difficult to see things from the other guy’s point of view”). The FS subscale measures the tendency to transpose oneself into the feelings and actions of characters in books, movies, and plays (e.g., “I really get involved with the feelings of the characters in a novel”). The EC subscale assesses the tendency to experience feelings of warmth and concern for others. Finally, the PD subscale measures typical emotional reactions and a person’s own feelings of discomfort in reaction to the emotions of other people (e.g., “In emergency situations, I feel apprehensive and ill-at-ease”) (Davis, 1980).

The four *IRI* subscales possess satisfactory internal (.71 to .77) and test-retest (.62 to .81) reliabilities (Davis, 1983). Results of confirmatory factor analysis revealed a fit for the 4-factor model. Further, small inter-correlations among responses to these subscales (r ’s ranged from .07 to .33) suggest that each is measuring a different construct. Correlations between responses to the *IRI* subscales and other psychological and empathy instruments lend support for the *IRI*’s convergent validity. Moreover, Davis (1983) reported responses to the *IRI* subscales are correlated, as expected, to other empathy measures, and indexes of social competence, self-esteem, emotionality, and sensitivity to others. The psychometric properties of the *IRI*, however, have not been demonstrated with a Chinese sample.

The *CBCL-YSR* (Achenbach, 1991) contains 113-items that assess (0 = not true; 1 = somewhat true or sometimes true; 2 = very true or often true) persons’ behavioral problems in the past three months. Four *CBCL-YSR* subscales were given in this study (i.e., aggressive behavior [19 items], anxious/depressed [16 items], attention problem [9 items], and delinquency [11 items]). *CBCL-YSR*

norms were developed based on responses of 2,368 non-handicapped 4 to 18 year olds in the U.S. Initial findings reported by Achenbach (1991) suggested high alpha coefficients (.87, .77, .88, & .74) for the aggressive-behavior, attention problem, anxious/depressed, and delinquency subscales of the CBCL-PRF, respectively.

Construct validity for the scale was investigated by correlating responses to the CBCL subscales with responses to the Conners (1973) Parent Questionnaire and Quay-Peterson (1983) Revised Behavior Problem Checklist. Data was gathered from sixty 6 to 11 year-olds who were clinically referred for services. Correlations between responses to the CBCL subscales and the Conners scale ranged from .59 to .86. Similar correlations were obtained when responses to the CBCL subscales and Quay-Peterson scales (*r*'s ranged from .59 to .88) were examined. Based on these findings, Achenbach (1991) concluded the CBCL possessed acceptable construct validity. Given the purpose of the current study, students' CBCL-YSR responses following the end of the group program were not analyzed.

Results

Table 1 presents descriptive statistics on variables of interest from time of screening through the one-year follow-up assessment. This Table reveals that the mean screening score for both proactive ($M = 8.2$; $SD = 7.3$) and reactive ($M = 11.5$; $SD = 5.8$) aggression were much higher than those reported in another study (proactive $M = 1.3$ and reactive $M = 4.7$) involving Chinese youth (Fung & Wong, 2007). This is not that surprising since students were selected for our treatment group, in part, because their proactive aggression score was at least one standard deviation ($SD = 2.6$) above the mean in the Fung and Wong study. *Table 1* also suggests the mean physical aggression ($M = 28.7$; $SD = 7.5$) score for the current students was higher than what was discovered in the AQ development study (Buss & Perry, 1992), while the mean verbal aggression score ($M = 15.4$; $SD = 2.7$) was somewhat comparable.

Table 1 presents means linked with the empathy measure (IRI) employed in this study as well. The current mean IRI-Fantasy score ($M = 21.9$; $SD = 3.8$) was higher than the one reported in the original project involving this subscale (Davis, 1980). The same can be said for the IRI-Perspective Taking ($M = 20.8$; $SD = 4.9$) and IRI- Personal Distress ($M = 20.1$; $SD = 5.3$) scores obtained in the current study. Lastly, the IRI-Empathy Concern score ($M = 21.7$; $SD = 4.2$) in this study was nearly the same as the one discovered by Davis.

Table 1. Descriptive statistics for aggression and empathy variables across time.

Variable	Screening		Post-test follow-up		3-month follow-up		6-month follow-up		1 year follow-up	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Reactive Aggression ^a	11.5	5.8	8.0	4.9	7.6	4.9	6.3	4.2	5.9	4.9
Proactive Aggression ^a	8.2	7.3	5.5	5.5	3.8	5.2	3.3	4.0	2.9	4.6
Verbal Aggression ^b	15.4	2.7	14.7	3.1	14.3	2.6	14.4	2.8	14.7	2.6
Physical Aggression ^b	28.7	7.5	25.1	6.1	23.8	5.6	22.6	5.3	22.4	5.7
IRI-Fantasy ^c	21.9	3.8	-	-	22.5	4.9	21.1	5.7	21.3	4.4
IRI-Empathic Concern ^c	21.7	4.2	-	-	22.3	3.9	21.8	4.0	21.9	3.6
IRI-Perspective Taking ^c	20.8	4.9	-	-	21.4	5.0	21.3	4.7	21.1	4.4
IRI-Distress ^c	20.1	5.3	-	-	19.9	4.3	18.0	4.5	19.5	3.6

Note. IRI = Interpersonal Reactivity Index; ^aSubscales of the Reactive and Proactive Aggression Questionnaire; ^bSubscales of the Aggression Questionnaire; ^cThis measure was given at pre-test and not during screening or post-test.

Correlations between the current Hong Kong students' responses to the aggression and empathy variables are displayed in *Table 2*. As expected, the inter-correlations between responses to the different aggression measures were much higher (*r*'s ranged from .18 to .75) than those found when responses to these measures were correlated with the IRI (empathy) subscales (*r*'s ranged from -.27 to .17). Further, in almost every case, the inter-correlations among the responses to subscales linked with a specific measure were higher than responses to other measures (see *Table 2*).

Table 2. Correlations between responses to aggression and empathy variables before treatment.

Variable	Proactive Aggression <i>r</i> <i>p</i>	Verbal Aggression <i>r</i> <i>p</i>	Physical Aggression <i>r</i> <i>p</i>	IRI-Fantasy <i>r</i> <i>p</i>	IRI-Empathic Concern <i>r</i> <i>p</i>	IRI-Perspective Taking <i>r</i> <i>p</i>	IRI-Distress <i>r</i> <i>p</i>
Reactive Aggression ^a	.75 .000	.32 .000	.71 .000	.07 ns	-.12 ns	-.13 ns	-.07 ns
Proactive Aggression ^a	-	.18 .05	.51 .000	-.07 ns	-.15 ns	-.07 ns	-.23 .01
Verbal Aggression ^b	-	-	.55 .000	.17 ns	-.02 ns	-.09 ns	.01 ns
Physical Aggression ^b	-	-	-	.04 ns	-.21* .05	-.27 .005	-.18 ns
IRI-Fantasy	-	-	-	-	.40 .000	.28 .005	.20 .05
IRI-Empathic Concern	-	-	-	-	-	.49 .000	.22 .05
IRI-Perspective Taking	-	-	-	-	-	-	-.02 ns

Note. IRI = Interpersonal Reactivity Index; ns = non-significant; All measures were given during screening except for the IRI which was administered at the pre-test. ^aSubscales of the Reactive and Proactive Aggression Questionnaire; ^bSubscales of the Aggression Questionnaire.

Given the correlations discovered and the conceptual relationships between the various sets of variables, multivariate analyses were performed to test the hypotheses. Recall it was expected proactive, reactive, physical, and verbal aggression would decrease as a result of our Hong Kong youth participating in the cognitive-behavioral program. One repeated measure MANOVA was performed to test this hypothesis. Time of assessment (screening, post-test, 3-month, 6-month, & 1 year follow-up) served as the repeated measure and the dependent variables included students' proactive, reactive, physical, and verbal aggression scores. A significant MANOVA was discovered when this procedure was performed (*Wilks's* $\lambda = .37$; $F [16, 30] = 3.2$; $p < .005$). Follow-up univariate analyses revealed that proactive ($F [4, 42] = 7.1$, $p < .0001$), reactive ($F [4, 42] = 8.9$, $p < .0001$), and physical ($F [4, 42] = 6.8$, $p < .0001$) aggression scores significantly decreased across time, while there was no effect for verbal aggression ($F [4, 42] = 1.3$, $p > .05$). Post-hoc Bonferroni tests comparing the proactive aggression means across time indicated that the mean scores for the 3-month, 6-month, and 1-year follow-ups were significantly lower than the mean for the screening assessment. The same results were discovered for physical aggression where the mean 3-month, 6-month, and 1-year follow-up scores were significantly lower than the

mean found during the screening assessment. Slightly different results were found when Bonferroni tests were employed to compare the reactive aggression means across time. The mean reactive aggression scores for the post-test, 3-month, 6-month, and 1-year follow-ups were significantly lower than the mean found during the screening assessment. The findings mentioned in this paragraph, in general, support the hypothesis that participating in our cognitive-behavioral group program would reduce various types of aggression reported by the Hong Kong secondary students in this study.

A MANOVA also was used to test the second hypothesis that taking part in the cognitive-behavioral group program would increase different empathic responses of the Hong Kong participants. Results of this analysis failed to support this hypothesis (*Wilks's* $\lambda = .67$; $F [12, 35] = 1.44$; $p > .05$). Thus, unlike what was expected, the mean composite score of IRI-Fantasy, IRI-Empathic Concern, IRI-Perspective Taking, and IRI-Personal Distress for our Hong Kong participants did not increase as a result of taking part in the cognitive-behavioral group program.

Discussion

In general, the current results revealed the cognitive-behavioral group therapy program offered to proactive aggressive Hong Kong youth was effective in achieving its' purpose. The students behaved in a less aggressive manner, and appeared to evaluate the consequences of their actions in a more rational fashion. It was expected the students' behaviors would be altered once their irrational beliefs were disputed during the course of the group program. Thus, behavior change was anticipated to occur later on than cognitive restricting. Our results revealed, however, that almost all the behavioral, cognitive, and emotional components of aggression that were assessed had changed in the predicted direction at one-year following the completion of treatment. This suggests that the group therapy program was effective in challenging proactive aggressors' irrational beliefs. It appears then that the Hong Kong secondary students developed more rational beliefs. We did not gather any data, however, to determine whether these persons were able to apply their rational beliefs in their daily life.

The fact various forms of aggressive (proactive, reactive, & physical) behavior were reduced one-year after the end of the cognitive-behavioral program designed specifically for proactive aggressors indicates that this highly individualized intervention approach had a long-lasting positive effect on reducing aggressive behaviors. This outcome was consistent with our hypothesis that cognitive-behavioral group therapy would be effective in decreasing different forms of aggression among proactive aggressive Hong Kong secondary students. It is also somewhat consistent with the results of Fraser and colleagues (2005) who reported on the effectiveness of a program constructed to promote social competence and decrease

aggressive behavior by strengthening school children's social information processing and emotion regulation skills. Unlike in the current study, however, Fraser et al did not specifically target proactive aggressive children.

While the current study did not isolate how components of the intervention may have contributed to the positive outcomes, we contend our group program helped students to dispute their irrational beliefs and replace them with rational ones. Further, we believe our participants were able to maintain their rational behavior over a longer period of time because their response decisions were guided by rational and thoughtful processing. In fact, previous studies suggested individuals were more prone to relapse if they had a tendency toward maintaining irrational beliefs (Nieuwenhuisen, Verbeek, de Boer, Blonk, & van Dijk, 2008). Therefore, disputing irrational beliefs through cognitive reconstruction as was done in the current study seems to have been an important element in disrupting the aggressive behavior of our Hong Kong participants over an extended period of time.

Although our group program was tailored to address the behaviors and beliefs of proactive aggressors, the intervention not only led to positive outcomes in reducing proactive aggression, but also resulted in reduced levels of reactive and physical aggression. All three forms of aggression decreased from the screening assessment to the one-year follow-up after the end of treatment. In fact, participants' proactive aggression mean scores went from 8.2 during the screening session to 2.9 one-year after treatment (possible range is 0 to 24), suggesting that they infrequently bullied others, while their mean reactive aggression score decreased from 11.5 (screening) to 5.9 (one-year post treatment), indicating they were less inclined to exhibit an impulsive, affective defensive response to a hostile provocation.

Perhaps the reduction in students' proactive and reactive aggression occurred because both can be linked, in part, to problems in social information processing (Crick & Dodge, 1996; Dodge, et al, 1997). Since reactive aggression is associated with problems in early stage social information processing, while proactive aggression is connected to problems in the later stages of social information processing (Crick & Dodge, 1996; Dodge et al., 1997), it appears reasonable a cognitive-behavioral strategy like the one reported in this article that was designed, in general, to enhance functional social information processing would be effective in reducing both forms of aggression. Future studies are needed to explore whether the intervention reported in this article actually reduced errors in social information processing and also whether the underlying mechanisms of proactive and reactive aggression are similar or different, and more importantly, interdependent or independent.

Future research is needed as well to determine what aspect of our cognitive-behavioral program might have been responsible for a reduction in students' level

of physical aggression one year after ending treatment. Perhaps by disputing students' beliefs about the presumed consequences of their aggressive behavior they actually developed more accurate cognitions about these consequences and were able to effectively reduce their physical expression of aggression. That is, they were able to less often physically hurt or harm others. It should be noted the mean physical aggression scores prior to (28.7) and one-year after (22.4) treatment were well below the midpoint in the potential range of scores (7 to 63) for this variable, but still indicative of engaging in a fair amount of physically aggressive behavior.

Further research is also warranted to investigate why our cognitive-behavioral approach did not decrease students' use of verbal aggression that is thought to be an instrumental or motor component of aggression. An examination of the obtained means might help to explain this finding. The mean verbal aggression scores before (15.4) and one-year following (14.7) treatment were well below the midpoint in the potential range of scores (7 to 49) and comparable to the mean found in the original study involving this construct (Buss & Perry, 1992). The current means suggested verbal aggression was not a frequently employed behavior of the students either before or after treatment. Thus, a meaningful reduction in verbal aggression was not quite possible. Even still, we expected our intervention to have a positive effect on this behavior. It is conceivable, however, that our intervention focused more attention on physical acts of aggression than verbal forms of aggression.

We also expected our intervention would increase students' empathic responses. Contrary to our prediction, our intervention did not enhance students' tendency to incorporate the perspective of others in their everyday life (IRI Perspective Taking subscale), their likelihood of transposing themselves into the feelings and actions of characters in books, movies, and plays (IRI Fantasy subscale), their ability to experience feelings of warmth and concern for others (IRI Empathic Concern subscale), and their tendency for experiencing feelings of discomfort in reaction to the emotions of others (IRI Personal Distress subscale).

Recall previous research revealed that bullies were less empathic (Warden & Mackinnon, 2003) and that low-empathic children in kindergarten and grade one were less prosocial in their behavior and more aggressive (Findlay, Girardi, & Coplan, 2006). Further, it was reported (Cohen & Strayer, 1996) that youth diagnosed with a conduct-disorder were less likely to recognize emotions in other persons. Other authors (Eisenberg & Fabes, 1992) argued that proactive aggressors lacked the appropriate amount of emotional arousal to trigger sympathetic capabilities needed to inhibit aggressive acts.

The current results are inconsistent with the findings above. The IRI empathy mean scores for the Hong Kong youth that completed our program were basically similar to those obtained in the original study involving this scale (Davis, 1980).

In fact, prior to treatment, our participants' mean scores were slightly above the midpoint in the potential range (7 to 32) of IRI subscale scores, suggesting these persons were already able to display various empathic responses. Students' involvement in our group program, however, did not enhance this ability. This outcome was contrary to our prediction and quite surprising given that five of the ten total group sessions focused in some way on increasing students understanding and display of empathy. In fact, one entire session was devoted to this goal.

It is possible our intervention was not effective increasing students' empathic responses because the material covered in the five sessions, the structure of each session, and presentation format was not salient enough to the students. Perhaps a more descriptive and realistic presentation, structure, and format organized around how victims of the students' aggression were negatively effected may have increased proactive aggressors empathic responses. For example, in our program students were presented with a bullying case and asked to consider the perspectives of various persons (e.g., victim) in a role-play. In another session, they were shown a videotape of a victim who discussed his experiences of being bullied. Students were asked to imagine being this person. While each of these examples have the potential to generate empathic responses, they lack the immediacy and realistic features of a live interaction with a person who had been bullied or had been adversely affected by the proactive aggressors in the current study. Assuming the proper ethical steps were taken and the necessary safeguards had been put in place to assure their safety, including real victims of bullying in some of the sessions could have enhanced the salience of the relevance and importance of empathy and led to an increase in students' empathic responses at the end and one-year following the conclusion of the treatment program. Future research is needed to examine the effectiveness of employing such a strategy.

Limitations and Conclusions

The high attrition rate in this study across assessments raises questions about the external validity of our results since it is unclear if there were systematic differences in the characteristics (e.g., aggression) of persons who did and did provide responses. External validity is also limited because only Hong Kong youth participated. Therefore, it is uncertain if the results can be generalized to youth elsewhere.

A control group was not employed in this study. Thus, it is unclear if the long-term positive effects were truly the result of the cognitive-behavioral program or maturation, a history effect, or regression to the mean. We highly suspect though that our intervention was effective in reducing students' aggressive behaviors.

Although our intervention seemed effective, there remains a need to compare the effectiveness of this strategy with a true control group. Until a treatment-control group design is investigated the current outcomes should be interpreted with caution. Further, to be more confident our intervention was effective, it is essential to compare the approach outlined in this article with other strategies (e.g., solution focused therapy, emotion focused therapy) and intervention formats (e.g., individual therapy, family therapy).

Past research (e.g., Ryan & Smith, 2009) on anti-bullying programs included persons regardless of the type of aggression they displayed and often these programs were not effective. We assumed constructing an intervention to target the features of proactive aggressors would yield the desired outcome. In general, our results confirmed this assumption. While it is too soon to claim all interventions targeting aggressive behaviors, cognitions, and emotions should be highly individualized, our findings suggest at least in the case of proactive aggressive Hong Kong youth such an approach is warranted.

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