

Original article

Exploring the relationship between aggression and empathy: A case study in Vietnam

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Abstract

Background: Although aggression is a major predictor of antisocial behaviours in adolescents, it can be reduced by improving empathic concerns to victims. The current study investigated the relationship between empathy and aggressive behaviour in Vietnamese adolescents. It explored the impact of an intervention that emphasized self-control skills and perspective-taking on aggressive adolescents in Vietnamese samples.

Methods: A total of 1,677 adolescents from three regions of Vietnam took part in this study with the employment of the Reactive and Proactive Aggression Questionnaire, Basic Empathy Scale and Self-Control Questionnaire. Among these participants, 26 adolescents identified as having severe aggressive behaviour were selected to attend a pre-and-post intervention for ten weeks. Participants were assessed before and after a 10-week training course.

Results: Findings revealed a negative relationship between aggression and empathy in Vietnamese adolescents. There was a statistically significant difference in aggressive behaviour and empathy scores in Vietnamese adolescents for several variables, including gender, academic performance, parents' occupation, and location. The intervention that focuses on self-control skills and perspective-taking has promising outcomes with aggressive adolescents. The obtained results add more to the literature about the role of empathy in reducing aggression in adolescents.

Conclusion: The current study was consistent with the previous studies with regard to the importance of empathic concern in reducing aggression. It also extended the evidence of the recommended intervention for aggression, that empathizes on self-control and empathy. Due to the negative association between aggression and empathy in adolescents, it calls for future research to discover other factors related to the aggression-empathy relationship that might help to reduce aggression in adolescents.

Keywords: aggression, Vietnamese adolescents, empathy, self-control, perspective-taking

Introduction

Aggression is a serious and common problem among children and adolescents [1]. It is also a major predictor of many antisocial behaviours like school violence, poor socialization and mental health disturbances [2]. Although some problems with aggression are expected during childhood and adolescence, serious aggression that meets the criteria for conduct disorder is estimated to occur in 6% to 16% of males and in 2% to 9% of females under age 18 [1]. Developmentally, aggressive behaviour is considered to be stable and genetic factors play a fundamental role in the total variance in aggression [3]. Thus, understanding the causes of adolescents' aggression and looking for effective intervention is becoming an increasingly important research topic [4]. Aggression has been defined as behaviour deliberately aiming to harm and hurt others physically or psychologically [5,6]. While aggression has been categorized differently based on its forms, such as overt and relational aggression, direct and indirect aggression, most researchers distinguish between proactive and reactive aggression [7, 6, 8, 9]. This is based on the assumption that aggression may be driven by two different functions: reactive and proactive [10]. Following this dichotomy, reactive aggression, often called hostile or affective aggression, is anger-driven, defensive in nature and in response to real or perceived provocation [8,11]. Conversely, proactive aggression was described as a

deliberate, instrumental and goal-oriented form of aggression [12]. With children, proactive aggression is often linked with a lack of empathy, feelings of guilt and delinquent behaviour. In contrast, reactive aggression has been related to peer rejection, substance abuse and internal problems due to impaired emotion regulation [6, 13]. For example, research on Asian adolescents found that reactive aggression was significantly related to anxiety and poor interpersonal functioning, while proactive aggression correlated with narcissistic traits [11]. Empirical studies suggested that due to those different functions, separate interventions should be undertaken with proactive and reactive aggression. For instance, a reactive aggression intervention should pay attention to anger regulation training and social problem-solving. In contrast, treatment for proactive aggression should emphasize the consequences of aggression and enhance empathy for others [14, 15, 16].

One of the intervention approaches to aggression is to improve empathic concern or empathy to victims. In the literature, there has been evidence supporting the idea that empathy plays a central role in the development of social behaviour in adolescents [17], and the absence of empathy also relates to the development of pathologic aggression [6]. Empathy is regarded as an important concept in many different areas of psychology, such as the development of empathy in children and adolescents [18]. Eisenberg [19] described empathy as the recognition of an emotional state in others, which would then provoke an emotional response that should crucially be a match with the emotional state of another. In the literature, researchers have conceptualized empathy as a multidimensional concept consisting of both cognitive and affective aspects [20, 21]. Kohut [22] described empathy as "the capacity to think and feel oneself into the inner life of another person. It is our lifelong ability to experience what another person experiences, though, usually and appropriately, to an attenuated degree" (p. 82). To our knowledge, the ability to comprehend the emotions of others and the ability to experience the emotion of others can be viewed as the primary components of empathy construct.

Previous studies found that empathy inhibits aggression in children and adolescents [23] and that cognitive and affective aspects of empathy may have implications for aggression [21]. This may be rooted in the relationship between empathy and prosocial behaviours such as helping, understanding others' feelings, sharing, providing comfort to others who are suffering [24]. So far, researchers have found that affective empathy but not cognitive empathy has a key role in the inhibition of overt aggression and relational aggression in early adolescents [23] as well as bullying in females [25]. Although the ability to pay attention to others' feelings may develop during childhood when children are at the age of two or three, it has been proposed that aggressive behaviour and antisocial behaviours may be associated with a lack of empathy [21, 19]. In a meta-analysis of 43 studies, Miller and Eisenberg [26] found a negative relationship between empathy and offending with a moderate mean effect size of 0.27. The relationship for cognitive empathy was stronger than that for affective empathy. Despite these conceptual links, the majority of existing studies have been limited to investigating the relationship between aggression and sympathy [27], and limited research has examined the relative association between two components of empathy and two forms of aggression in adolescents [23].

Research has shown a negative correlation between empathy and antisocial behaviour like delinquency and criminal offending and aggression [31]. People with high empathy often show prosocial behaviours such as helping peers or caring about others [28]. In contrast, those with low empathy tend to engage in antisocial behaviours, including high-risk adolescent and young adult delinquency, crime, and violence [32, 33]. Particularly, people who are lacking in empathy tend to be more aggressive [34,27]. If this is the case, then understanding empathy in aggressive adolescents should be a priority for researchers. As Yeo et al. [35] concluded, the aggression-empathy relationship may differ from different types of aggression. Various studies have been examining the association between empathy and traditional aggression, including relational, physical and indirect aggression [36, 35, 37] or the relationship between empathy

and cyberbullying [38] or bullying [21, 39]. Thus, it is crucial to investigate the relationship between empathy and proactive and reactive aggression. McGee et al. [36] highlighted that the empirical relationship between low empathy and aggression had been studied over 50 years; however, most studies have been conducted with Western adolescents [28, 29, 30]. Whereas little is known in non-Western cultures, especially in Asia or in Southeast Asia. Only two studies were found with Singapore children [35] and with Korean adolescents [38] on this topic as a culture might regulate the expression of aggression and empathic responses [35].

More importantly, Hubbard and Swift [8] emphasized that the treatment package should target the specific correlates of each subtype of aggression. Following this, reactive aggression could emphasize self-control or anger regulation training and problem-solving skills. In contrast, the development of empathy to others and the awareness of negative consequences of aggression should be a focus of intervention for proactive aggression.

It is therefore important to explore the aggression-empathy relationship with adolescents in different cultures like Vietnam. The current study was undertaken in Vietnam, a country in Southeast Asia, where research into the association between aggression and empathy is still limited. This is because most recent research in the Vietnamese context focuses on relational and behavioural aggression, while little is known about proactive and reactive aggression.

With this background, present study was aimed to assess the proactive and reactive aggression, role of empathy and the effectiveness of intervention on self-control skills and perspective-taking (known as cognitive empathy) for aggressive adolescents in Vietnam.

Methods

Participants

Participants in this study were 1677 students aged 12-13 years in the North, Central region and the South of Vietnam. In the first stage (screening phase), there were 1677 students taking part in the research; among these, the number of males accounted for 49.2%, lower than that of

females with 50.8%. The Proactive and Reactive Aggression Questionnaire, The Basic Empathy Scale, The Aggression Scale and the Self-Control Questionnaire were employed as screening measures for the first stage.

In the second stage: Based on results from the first stage with 1677 students, 50 children who were identified as having a high level of aggression were asked to take part in this intervention. Only 26 agreed to join (the number of males was 14 and that of females was 12) and so were chosen for the second stage. Those 26 chosen students were selected according to certain criteria. As such, they had aggressive scores ranging from 36 to 46 (identified as high aggression according to the Proactive and Reactive Aggression Questionnaire' guidance) and self-control scores ranging from 21 to 55 based on the self-control questionnaire' guideline (identified as low self-control).

Procedure

The procedures were in accordance with the ethical standards of Hanoi University of Education (University Code of Practice on Ethical Standards for Research Involving Human Participants) and were approved by the Board of Studies for Research Degrees. The samples were selected with the consent of the school principal, parents/caregivers and students.

The research was approved by the two experts, i.e., Jolliffe representing authors of the Basic Empathy Scale and Raine - author of the Proactive and Reactive Aggression Questionnaire, to apply those two tools in this research. These two measures in English were translated into Vietnamese by the researchers of this study, which was then back-translated into English by a bilingual who is a psychologist in Vietnam. After that, the back translation version was checked by Jolliffe and Raine for compatibility with the original version in both grammar and lexicology. When the two translated versions were confirmed, the researchers carried out a pilot survey with 50 students to test grammatical and lexicological compatibility in reality. It was demonstrated that there should be certain adjustments in the translated version in terms of

sentence structure and word choice. Fortunately, this did not cause any big problems, i.e. students understood the content of the Vietnamese translation. Therefore, the research was then conducted with a larger sample.

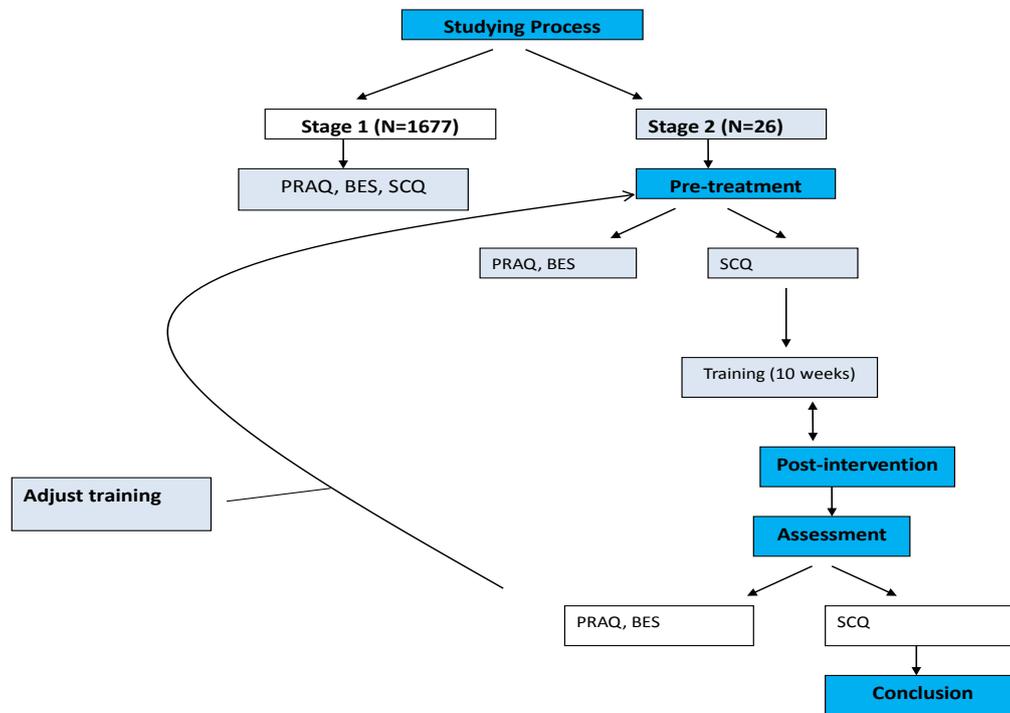


Figure-1: Studying Process

Assessment scales

The Reactive-Proactive Aggression Questionnaire (RPQ- 2008): The RPQ was developed by Raine et al. in 2008 [4]. It is a 23 item self-report questionnaire to assess reactive and proactive aggression in children aged from 6-16 years. It uses a 3-point Likert scale from 0- never, 1- sometimes and 2-often. Among 23 items, there are 12 items for a reactive subscale and a proactive subscale comprising 11 items. According to the RPQ manual, the total score of the RPQ illustrates the level of aggression in general, and there are separate measures on subscales. The higher the total score is, the higher the level of aggression will be (the total scores range from 0 to 46). It is reported by Raine et al. that internal consistencies are as follows: the reactive aggression ($\alpha = .84$), the proactive aggression ($\alpha = .86$) and the total RPQ scale ($\alpha = .90$). Within the current study, internal consistencies for the reactive aggression ($\alpha = .80$),

the proactive aggression ($\alpha = .79$), and the total RPQ scale ($\alpha = .81$) of the Vietnamese RPQ version in this study were sufficient.

The Basic Empathy Scale (BES, Jolliffe and Farrington, 2006) [21]: The BES consists of 20 items dividing into two subscales 'cognitive empathy' (9 items) and 'affective empathy' (11 items). BES uses a five point-Likert scale from 1-strongly disagree to 5-strongly agree. Some converted items help to assess the level of empathy in children as well as cognitive and affective subscales. The higher the total score is, the higher the level of empathy will be. For the current study, internal consistencies for the cognitive empathy ($\alpha = .76$), the affective empathy ($\alpha = .74$), and the total BES ($\alpha = .75$) showed good internal consistencies, $M = 86.69$; $SD = 8.53$.

Aggression Scale (AS, Orpinas và Frankowski, 2001) [42]: The AS comprises 11 items that assess aggressive general overt aggressive behaviours physically and verbally (e.g., 'I pushed or shoved other students, or 'I called other students bad names'), and anger (e.g., 'I got angry very easily with someone') in the last seven days, using a seven-point rating scale ranging from 0 (0 times) to 6 (6 or more times). The AS has been culturally adapted in Vietnamese children with sufficient reliability [43]. In this study, the AS showed good internal consistencies ($\alpha = .79$), $M = 11.95$; $SD = 9.96$.

Self-Control Questionnaire (SCQ): The SCQ was developed by the research team based on the Self-Control Scale [44]. The SCQ consists of 21 items, assessing self-control skills of children such as 'I keep my feelings to myself, 'When I am feeling bad (i.e., sad, angry or worried)', I am careful not to show it', 'I do things that feel good at the moment but regret later on' etc. All items were scored on a five point-Likert scale from 1-not at all like you to 5-very much like you. The lower the total score is, the lower the level of self-control skill will be (the total scores range from 1 to 105). For the current study, the SCQ showed substantial internal consistencies of .85.

Research design

The design of the study was an intervention study which was divided into two stages as follows: In the first stage (screening stage), the research team connected and sent a research description with details about research objectives, research questions to School Administrators of expected survey destinations. After receiving their approval, parents/caregivers were informed about the study by schools, using a letter prepared by the research team. They were given the opportunity to decide against the participation of their children. They then have their child take the consent form to the class teacher. Written consent forms from guardians/parents and assent of adolescents were collected before conducting the survey. On the day of data collection, adolescents will receive adequate information about the study's goals and procedures. This made clear to them that participation was completely voluntary, that questionnaires were anonymized at the source, and that data was stored. The research team went to different classes to provide students with instructions on answering the questionnaire package collected at class by the research team.

In the second stage (intervention stage): Before the intervention, parents/caregivers signed an informed consent form to give permission for their child to take part in the training. Parents/caregivers were all aware of the content and the advantages of allowing their children to be part of the intervention. Also, all participants were asked to sign an informed consent form to indicate that they were aware of being involved in the intervention. They agreed to join in the study, along with the agreement of their parents or caregivers. Participants, who took part in the training, were mentioned their rights to have feedback about their improvement during the training.

Intervention

A pre-and post-intervention was undertaken for ten weeks with 26 students who displayed a high level of proactive and reactive aggression. The intervention was delivered in a group

format with students having similar problems, i.e. high aggression, which helped them disclose their issues easier to each other. Students taking part in the intervention were asked to respond to the measurements including the RPQ, BES and SCQ at baseline and post-intervention. Results of the RPQ, BES, SCQ at baseline were used for the pre-intervention, and after ten weeks, adolescents within the intervention group were asked to answer the measured package as the baseline, including RPQ, BES and SCQ. The outcomes after ten weeks were then compared with those at baseline to evaluate the role of self-control skills training for aggressive adolescents. The details are as follows:

The training course was run weekly for ten weeks in 2020. Each section lasted 50 minutes (equivalent to the amount of time in a school period). The principal investigator, a PhD in psychology and has obtained a certificate in using cognitive behaviour therapy and allowing the usage of manual training for aggressive adolescents, mainly delivered the training. An assistant, a Master degree in School Psychology helped the investigator run the training. It would be crucial to note here that the investigator was not involved in the rating process in order to ensure students answer the questionnaire objectively. The intervention was broken into two parts: (1) the first one lasted 3 sessions (psycho-education about aggression) with contents helping students to explore symptoms, causes and effects of aggression; as well as self-control knowledge with its definition, symptoms and effects; (2) the second part accounted for larger weight with seven sessions concentrating on the introduction to practice self-control skills including self-talk, problem-solving, perspective-taking and relaxation (i.e., mindfulness meditation). This intervention program was designed based on the material, namely Keeping Your Cool workbook by Nelson & Finch [40], which demonstrated that the cognitive-behaviour approach would help in changing both awareness and behaviour of aggressive adolescents. This program was approved by Nelson and Finch and culturally adapted with positive results within Vietnamese children [41]. Specific techniques like self-talk, problem-

solving, perspective-taking and relaxation (i.e., mindfulness meditation) were suggested in Keeping Your Cool and proved to be effective ones for aggressive children. In addition, the above intervention schedule was also consulted by different researchers about appropriate impacts on students with proactive and reactive aggression [8].

The study was mainly conducted with students in public schools. The self-control skills training at the second stage was undertaken in the school setting to ensure an efficient environment for students to take part in with the school principal's approval.

Statistical Analysis

Responses were analyzed using SPSS version 22. Reliability was evaluated using Cronbach's Alpha; Pearson correlation coefficients following the criteria proposed by Cohen (1988) ($.10 \leq r < .30$: small; $.30 \leq r < .50$: medium; $r \geq .50$: large). The eta squared statistic to measure effect size of the training using the formula suggested by Palland [45] and the guidelines proposed by Cohen [46] for this value are .01= small effect; .06=moderate effect; .14= large effect. Other statistical parameters such as mean and standard deviation were calculated to illustrate the level of aggression and empathy in adolescents. A mix between analysis subject of variance (*ANOVA*) was employed to investigate the differences of aggression and empathy scores with gender.

Results

Demographic characteristics of samples at the first stage was illustrated in Table 1.

Table 1. Demographic characteristics of samples

	N (%)	Range
Age		12-13
Gender		
Male	825 (49.2)	0-1
Female	852 (50.8)	0-1
Academic Performance		
Excellent	800 (47.7)	0-2
Good	671 (40.0)	0-2
Average	206 (12.3)	0-2
Location		
North	847 (50.50)	0-2
Central	427 (25.47)	0-2
South	403 (24.03)	0-2

At baseline: Table 2 illustrates descriptive statistics of scores on the different measures: RPQ, AS, BES and SCQ on Vietnamese adolescents. The mean and standard deviation on measures of interest revealed that students had higher scores on reactive aggression than proactive ones; among two components of empathy, adolescents showed higher scores on affective empathy than cognitive ones.

Table 2. Descriptive statistics for aggression and empathy scales

	Vietnamese adolescents (N=1677)		Range		Skewness (SE)	Kurtosis (SE)
	Mean (M)	SD	Min	Max		
Aggression (RPQ)						
Proactive aggression	1.69	2.10	0	24		
Reactive aggression	7.58	3.34	0	22		
Total RPQ	9.26	4.77	0	46	1.04 (0.06)	2.67 (0.11)
Aggression (AS)	11.97	9.92	0	66	1.57 (0.06)	3.37 (0.11)
Empathy (BES)						
Cognitive	32.32	4.65	12	45		
Affective	36.08	5.75	11	55		
Total BES	68.39	8.49	29	98	-0.21 (.06)	0.48 (0.11)
Self-Control skills Questionnaire (CSQ)	55.39	10.15	21	105	0.31(0.6)	1.50 (0.37)

Table 3 shows the correlations between the variables included in the study, such as cognitive, affective subscales and total empathy scale; reactive, proactive subscales and total aggression scale. As can be seen from Table 3, there was a significant negative correlation between reactive, proactive, total aggression and affective, total empathy scores. The association between reactive aggression and cognitive empathy was not significant. Aggression subcomponents and empathy subtypes correlated significantly with each other.

Table 3. Bivariate analysis for the main study variables (n = 1677)

	1 ¹	2 ²	3 ³	4 ⁴	5 ⁵	6 ⁶	7 ⁷
BES affective	-						
BES cognitive	.52**	-					
Total BES	.85**	.76**	-				
RPQ reactive	-.56**	-.18	-.32**	-			
RPQ proactive	-.30**	-.25	-.30**	.69**	-		
Total RPQ	.09**	-.03	-.42**	.92**	.79**	-	
AS	.20	-.14	-.21**	.51	.50	.58**	-

¹ BES affective; ² BES cognitive; ³ Total BES; ⁴ RPQ reactive; ⁵ RPQ Proactive; ⁶ RPQ Proactive; ⁷ AS

An independent sample *t-test* was conducted to compare the aggression and empathy scores for males and females. There was a statistically significant difference in reactive aggression and total aggression scores for females (M = 7.85; SD = 3.37) and for males (M = 7.29; SD = 3.29); (1.675) = -3.48; p = 0.001. In contrast, scores on proactive aggression for males were higher than this for females (M = 1.54; SD = 1.90); t (1.675) = 2.86; p = 0.004. Similarly, significant differences were found for the cognitive, affective and total empathy scores for

gender as well. Females had higher scores on subtypes empathy and total empathy than males; total empathy for females (M = 70.31; SD = 8.41) and males (M = 66.41; SD = 8.10); $t(1.675) = -9.66$; $p = 0.000$. The magnitude of the differences in the mean (mean difference = -3.90, 95% CI: -4.69 to -3.11) was very small (eta square = .00).

The intervention: After the ten week-intervention, no dropouts were reported based on the weekly attendance register throughout the course of the group training. A paired sample *t-test* was employed to explore the impact of the training that focused on self-control skills, including perspective-taking, problem-solving, and relaxation (mindfulness meditation), with adolescents scoring high on the aggression scale (RPQ). The results indicated a significant decrease in aggression score (RPQ) from time 1 (pre-training) to time 2 (post-training) with $t(25) = 7.92$, $p < .001$ (two-tailed).

The mean decrease in RPQ scores was 3.80, with a 95% confidence interval ranging from 2.81 to 4.79. The eta squared statistic using the formula suggested by Palland [45] and the guidelines proposed by Cohen [46] (.71) indicated a very large effect size. A significant decrease in aggression scores was also found in AS at $t(25) = 12.39$, $p = .00$.

In contrast, scores on empathy from time 1 to time 2 increased adequately, $t(25) = -8.91$, $p = .00$. The mean increase in BES scores was -8.96, with a 95% confidence interval ranging from -11.03 to -6.89. The eta square statistic (.76) demonstrated a very large effect size.

Table 4. Mean and standard deviation of the measures over two time periods

	Pre-training (N=26)		Post-training (N=26)		t	P
	M	SD	M	SD		
RPQ	24.96	4.92	21.15	4.78	7.92	.00
BES	57.92	7.62	66.88	10.68	-8.91	.00
SCQ	58.00	8.83	65.23	9.20	-13.49	.00
AS	36.62	11.54	32.27	10.61	12.39	.00

The SCQ showed an increase in scores between the two intervals with $t(25) = -13.49$, $p = .00$.

The mean increase in SCQ scores was -7.23 , with a 95% confidence interval ranging from -8.33 to -6.12 . The size effect of the training on SCQ was very large at $.87$.

A two-way 2×2 (gender [male, female] Time [time 1, time 2]) mixed between within-subjects analysis of variance (ANOVA) was conducted to find out if aggression and empathy scores differed with gender. The results revealed that there were no statistically significant differences in aggression scores for gender at time 1 and time 2. The same was found for the BES at two intervals (Table 5).

Table 5. ANOVA's results for gender in RPQ and BES

	Pre-training		F	p	Post-training		F	p
	M(SD)	Sum of Square			M(SD)	Sum of Square		
RPQ								
Males (N=14)	25.43 (6.13)	6.16	.26	.61	21.50 (6.44)	3.63	.15	.69
Females (N=12)	24.42 (3.17)				20.75 (1.60)			
BES								
Males (N=14)	56.07 (8.22)	104.00	1.84	.18	64.64 (10.94)	152.44	1.35	.25
Females (N=12)	60.08 (6.54)				69.50 (6.54)			

Discussion

The two aims of this paper were to examine the relationship between empathy and aggression and then to investigate whether self-control skills training can help aggressive adolescents as measured on RPQ improve their empathy and reduce their aggression or not. The study findings supported two research questions made for the present research.

First, the results of this current study were broadly consistent with previous investigations regarding the relation between aggression and empathy in adolescents. That is, aggression is negatively correlated with empathy. Body of empirical research supported the conclusion that aggression can be inhibited by empathy [47, 48, 44]. Due to the nature of empathy involving concern for others that have both cognitive and affective aspects, it also contributes to warm and close interpersonal relationships [27]. Research to date has proved that low empathy can be predictive of several antisocial and violent behaviours, including aggressive behaviours, particularly proactive aggression and bullying [21,49]. Affective empathy, known as the ability to feel what another is feeling, has been found to inhibit relational aggression and violent aggression in adolescents [47]. Although aggression and empathy may differ across cultures and nations [18], the association between aggression and empathy seems to be universal. It is believed that Eastern people are less likely to be aggressive than Western ones, which is based on the rates of violence in the media [18].

Nevertheless, empirical studies have been increasingly supportive of the idea that empathy underlies prosocial behaviour and lack of empathy tends to be linked with more aggressive behaviour [19, 34]. A significant negative correlation between reactive and proactive aggression and empathy found within this study was in line with other studies [31,26,32]. Therefore, it adds further evidence of the association between aggression, particularly reactive and proactive aggression and empathy in a non- English speaking country and non-western cultures.

Previous studies demonstrated that male students displayed aggression more regularly. For reactive and proactive aggression, significant gender differences were found in which boys scored higher than girls on both types of aggression [6]. Similarly, Fung, Raine, & Gao' study [50] using a large sample of youth also found that proactive aggression increased for boys across adolescence but was likely to be stable for girls. In contrast to previous studies, this

research revealed that female students were more committed to reactive aggression, whereas male showed proactive aggression. As analyzed above, students would display reactive aggression when stimulated by emotional factors and expressed aggression would help release emotions [5]. This research's findings can be explained by the cultural differences within nations, which greatly impact aggression [51, 18]. Vietnam is an Asian country where culture and tradition highly appreciate the gentleness and traditional female qualities. Therefore, the expression of aggression through external behaviours would be inappropriate. However, when they are stimulated, female students still exhibit their aggression through reactions and emotions. Gender differences were consistently noted for empathy in adolescents. Generally, girls often obtained higher scores on both cognitive and affective components of empathy, but this is not the case for adolescent samples as gender differences seem to be more distinct for affective empathy than for cognitive empathy [6]. In line with that conclusion, within the current study, female adolescents had a much higher score on affective empathy than cognitive empathy.

Secondly, a noted finding, which helped in answering the second research question, was the concentration on training aggressive adolescents with self-control skills such as perspective-taking, problem-solving and relaxation (mindfulness meditation). The training procedure combined psycho-education on aggression and empathy (advantages and disadvantages of being aggressive and being empathic to others, identification and understanding of emotions in the self and others) and practising self-control skills would help enhance empathy and decrease aggression. The large effect size for the self-control skills training found within the current study was so valuable because it confirmed the suitability of the suggested intervention package for reactively and proactively aggressive adolescents. Intervention efforts for aggression recently have focused on an approach that integrates skills development, problem-solving and affective education [53]. The skills training course designed for aggressive Vietnamese

adolescents consisted of both self-control skills and empathy (perspective-taking) that map onto recommended intervention for each type of proactive as well as reactive aggression. Clearly, given the high correlation between the subtypes of aggression, many young people with aggression would benefit from both intervention packages [8]. As self-control skill refers to the ability to regulate cognition and behaviour in order to achieve long term goals [54], this outcome supported Arsenio and Lemerise's argument [55] that emotion regulation may underlie the empathy-aggression associations. Taken together, it can be concluded that self-control skills training showed promise for aggression generally and reactive and proactive aggression particularly. Among various self-control skills, perspective-taking positively contributed to reduced aggression [46, 56].

There are also some limitations that require further discussion. First and foremost, this study only covered the application of self-report to survey aggression and sympathy among adolescents. The expressions of empathy sometimes are internal and personal. Aggressive behaviours might be different in divergent settings. So, there should be numerous contexts for students to express their care and aggression.

Consequently, the limitation of not exploring situational factors largely affected the results of this study. Secondly, this study has not had a follow-up stage. Therefore, it could not measure changes of students in terms of their aggression, empathy and self-control over a long period of time. Furthermore, the study has not carried out a longitudinal study or predictor analysis (for example, with the teachers or parents' view) to understand its impact on aggression. Also, it would be valuable if future research could focus on training for parents of aggressive adolescents and then compare parental intervention and student intervention in reducing aggression and improving empathy in their children. Last but not least, this study would have been more comprehensive if it had included a control group to confirm the effectiveness of self-control skills training in aggressive students.

However, the above limitations would be suggestions for further research with more methods and measures to bring about more satisfying results. In further research, it would be useful to conduct a longitudinal study to look into students' changes during a long period of time and confirm the effectiveness of the training course on a more persuasive basis.

To conclude, this study made a valuable contribution to understanding the association of empathy and aggression in Vietnamese adolescents. As aggression has been connected to antisocial behaviour in children, high levels of aggression also place adolescents at risk for serious problems later at the latter stages of their life. Thus, understanding the role of empathy in reactive and proactive aggression can support previous research on this negative relationship and contribute to enriching the evidence of the effectiveness of the intervention on aggression that focuses on self-control skills and empathy. Results obtained from this study replicated the previous finding of the negative relationship between aggression and empathy and the value of teaching children how to regulate their emotions and how to solve problems, along with suitable relaxation techniques to reduce and prevent aggression.

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References

1. Lochman JE, Powell NP, Boxmeyer CL, Kelly M, Dillon C, Bradshaw C. Anger Management in Schools. The Coping Power Program for Children and early Adolescents. In *Treatments for Anger in Specific Populations: Theory, Application and Outcomes*. Edited by Fernandez E. London: Oxford University Press. 2014, 176-192
2. Tuvblad C, Dhamija D, Berntsen L, Raine A, Liu J. Cross-Cultural Validation of the Reactive-Proactive Aggression Questionnaire (RPQ) Using Four Large Samples from the US, Hong Kong, and China. *J Psychopathol Behav Assess*. 2016, 38:48-55

3. Tuvblad C, Baker LA. Human aggression across the lifespan: Genetic propensities and environment moderators. *J Adv Genet.* 2011, 75:171-214
4. Raine A, Dodge K, Loeber R, Gatzke-Kopp L, Lynam D, Reynolds C, et al. The reactive-proactive aggression questionnaire: Differential correlates of reactive and proactive aggression in adolescent boys. *Aggress Behav.* 2006, 32:159-171
5. Dodge KA. The structure and function of reactive and proactive aggression. In *The Development and Treatment for Childhood Aggression.* Edited by Pepler D, Rubin DK, Hillsdale: Erlbaum. 1991, 201-218.
6. Euler F, Steinlin C, Stadler C. Distinct profiles of reactive and proactive aggression in adolescents: associations with cognitive and affective empathy. *Child Adolesc Psychiatry Ment Health* 2017, 11.
7. Bushman BJ, Anderson CA. Is it time to pull the plug on hostile versus instrumental aggression dichotomy? *Psycho Rev.* 2001, 108:273-279
8. Hubbard LA, Swift LE. Treatment for Anger Regulation and Reactive Aggression in Young Children. In *Treatments for Anger in Specific Populations: Theory, Application and Outcomes.* Edited by Fernandez E. London: Oxford University Press. 2014, 197-212
9. Vitaro F, Brebdgen M. Proactive and reactive aggression: A developmental perspective. In *Developmental Origins of Aggression.* Edited by Tremblay RE, Hartup WM & Archer J. New York: Guildford. 2005, 178-201
10. Dodge KA, Coie JD. Social-information-processing factors in reactive and proactive aggression in children's peer groups. *J Pers Soc Psychol.* 1987, 53:1146-1158
11. Seah SL, Ang RP. Differential Correlates of Reactive and Proactive Aggression in Asian Adolescents: Relations to Narcissism, Anxiety, Schizotypal Traits, and Peer Relations. *Aggress Behav.* 2008, 34:553-562
12. Cenkseven-Önder F, Avcı R, Çolakkadioğlu O. Validity and Reliability of the Reactive-Proactive Aggression Questionnaire in Turkish Adolescents. *Educ Res Rev.* 2016, 11:1931-1943.
13. Fite PJ, Colder CR, Lochman JE, Wells KC. Pathways from reactive and proactive aggression to substance abuse. *Psychol Addict Behav.* 2007, 21:355-364
14. Brown KS, Parsons RD. Accurate identification of childhood aggression: A key to successful intervention. *Prof Sch Couns.* 1998, 2:135-140
15. Larson J. Cognitive-behavioral treatment of anger-induced aggression in the school settings. In *Anger, Hostility and Aggression: Assessment, Prevention, and Intervention*

- Strategies for Youth. Edited by Furlong MJ & Smith DC. Brandon VT: Clinical Psychol. 1994, 393-440.
16. Phillip NC, Lochman JE. Experimentally manipulated change in children's proactive and reactive aggressive behavior. *Aggress Behav.* 2003 29:215-227
 17. Vossen GM, Piotrowski JT, Valkenburg PM. Development of the adolescent measure of empathy and sympathy. *J Pers Individ Dif.* 2015, 4:66-71
 18. Anderson CA, Shibuya A, Ihori N, Swing EL, Bushman BJ, Sakamoto A, et al. Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull.* 2010, 136:151-173
 19. Eisenberg N. Emotion, regulation, and moral development. *Annu Rev Psychol.* 2000, 51:665-697.
 20. Feshbach ND. Empathy in children: Some theoretical and empirical considerations. *The Couns Psychol.* 1975; 5:25-30
 21. Jolliffe D, Farrington DP. Development and validation of the Basic Empathy Scale. *J Adolesc.* 2006, 29:589-611.
 22. Kohut H. Introspection, empathy, and psychoanalysis: An examination of the relationship between the mode of observation and therapy. *J Am Psychoanal Assoc.* 1959, 7:459-83.
 23. Batanova M, Loukas A. Empathy and Effortful Control Effects on Early Adolescents' Aggression: When Do Students' Perceptions of Their School Climate Matter? *Appl Dev Sci.* 2016, 20:79-93.
 24. Grazzani I, Ornaghi V, Pepe A, Brazzelli E, Rieffe C. The Italian version of the Empathy Questionnaire for 18- to 36-months-old children: psychometric properties and measurement invariance across gender of the EmQue-I13. *Eur J Dev Psychol.* 2017, 14:118-126.
 25. Caravita S, Blasio PD, Salmivalli C. Unique and interactive effects of empathy and social status on involvement in bullying. *Soc Dev.* 2009, 18:141-163
 26. Miller PA, Eisenberg M. The relation of empathy to aggression and externalizing/antisocial behavior. *Psychol Bull.* 1988, 103:324-344
 27. Eisenberg N, Eggum ND, Di-Giunta L. Empathy-related responding: associations with prosocial behavior, aggression, and intergroup relations. *Soc Issues Policy Rev.* 2010, 4:143-80
 28. Gni G, Albiero P, Benelli, B, Altoe G. Determinants of adolescents' active defending and passive bystanding behaviour in bullying. *J Adolesc.* 2008, 31:93-105.

29. Robinson R, Roberts WL, Strayer J, Koopman, R. Empathy and emotional responsiveness in delinquent and nondelinquent adolescents. *Soc Dev.* 2007, 16:555-579
30. Strayer J, Robert W. Empathy and observed anger and aggression in 5-year olds. *Soc Dev.* 2004, 13:1-13
31. Mehrabian A. Relations among personality scales of aggression, violence, and empathy: Validation evidence bearing on the Risk of Eruptive Violence Scale. *Aggress Behav.* 1997, 23:433-445
32. Salas-Wright CP, Olate R, Vaughn MG. Assessing Empathy in Salvadoran High-Risk and Gang-Involved Adolescents and Young Adults: A Spanish Validation of the Basic Empathy Scale. *Int J Offender Ther Comp Criminol.* 2012, 57:1393-1416.
33. Jolliffe D, Farrington DP. Is low empathy related to bullying after controlling for individual and social background variables? *J Adolesc.* 2011, 34:59-71.
34. Marshall LE, Marshall WL. Empathy and antisocial behavior. *J Forensic Psychol Res Pract.* 2011, 22:742-759.
35. Yeo LS, Ang RP, Loh S, Fu KJ, Karre JK. The Role of Affective and Cognitive Empathy in Physical, Verbal, and Indirect Aggression of a Singaporean Sample of Boy. *J Psychol.* 2011, 145:313-330
36. McGee TR, Jolliffe D, Ericksson L, Bond C.E.W, Farrington DP. Low cognitive empathy and its relationship to relational, online, and physical aggression in young adults in Australia. In: *Empathy versus Offending, Aggression, and Bullying Advancing Knowledge using the Basic Empathy Scale*, 1st edition. Edited by Jolliffe D, Farrington DP. London: Routledge. 2021, p16-30
37. Eisenberg N, Eggum ND, Di Giunta L. Empathy-Related Responding: Associations with Prosocial Behavior, Aggression, and Intergroup Relations. *Soc Iss Policy Rev.* 2010, 4:143-180
38. Lee C, Shin N. Prevalence of cyberbullying and predictors of cyberbullying perpetration among Korean adolescents. *Comput Human Behav.* 2017, 68:352- 358
39. Kokkinos CM, Kipritsi. The relationship between bullying, victimization, trait emotional intelligence, self-efficacy and empathy among preadolescents. *Soc Psychol Educ.* 2012, 15:41-58.
40. Nelson WM, Finch AJ. *Keeping Your Cool: The Anger Management Workbook.* Cincinnati, OH: Workbook Publishing, 2008

41. Bui Thi Thu Huyen. Using a psychoeducational program based on cognitive behavioral therapy to improve anger management skills for Vietnamese adolescents. PhD thesis. University of Bolton, the UK, School of Education and Psychology, 2017
42. Orpinas P, Frankowski R. The Aggression Scale: A self-report measure of aggressive behavior for young adolescents. *J Early Adolesc.* 2001, 21:50-67
43. Vu BT, Petry K, Bosmans G. The translation and psychometric evaluation of the Vietnamese version of the Aggression Scale. *Eur J Dev Psychol*, 2019.
44. Tangney JP, Baumeister RF, Boone, AL. High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success. *J Personal* 2002, 72(2):271-324.
45. Palland J. SPSS-Survival Manual-A Step by Step Guide to Data Analysis Using IBM SPSS. New York: Mc Graw Hill Education, 2016
46. Cohen J. Statistical Power Analysis for the Behavioral Sciences. Hillsdale. NJ: Lawrence Earlbaum Associates, 1988
47. Batanova M, Loukas A. Unique and Interactive Effects of Empathy, Family, and School Factors on Early Adolescents' Aggression. *J Youth Adolesc.* 2014, 43:1890-1902.
48. Gni G, Albiero P, Benelli B, Altoe G. Does empathy predict adolescents' bullying and defending behaviour? *Aggress Behav.* 2007, 33:467-476
49. Jolliffe D, Farrington DP. Is low empathy related to bullying after controlling for individual and social background variables? *J Adolesc.* 2011, 34:59-71.
50. Fung AL-C, Raine A, Gao Y. Cross-cultural generalizability of the Reactive-Proactive Aggression Questionnaire (RPQ). *J Pers Assess.* 2009, 91:473-479.
51. Bergeron N, Schneider B. Explaining cross-national differences in peer-directed aggression: A quantitative synthesis. *Aggress Behav.* 2005,31:116-137
52. Ogden T, Hagen KA. Adolescent Mental Health. New York: Routledge, 2014
53. Sukhodolsky DG, Kassinove H, Gorman BS. Cognitive-behavioural therapy for anger in children and adolescents: a meta-analysis. *Aggress Violent Behav.* 2004, 9:247-269
54. Baumeister RF, Vohs KD, Tice DM. The strength model of self-control. *Curr Dir Psychol Sci* 2007, 16:351-355.
55. Arsenio WF, Lemerise E. Varieties of childhood bullying: Values, emotion process, and social competences. *Soc Dev.* 2001, 10:59-73.
56. Peplak J, Malti T. "That Really Hurt, Charlie!" Investigating the Role of Sympathy and Moral Respect in Children's Aggressive Behavior. *J Genet Psychol.* 2016, 178:89-101.

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