Published in the Slovak Republic
European Journal of Contemporary Education
E-ISSN 2305-6746
2021. 10(3): 583-594
DOI: 10.13187/ejced.2021.3.583
www.ejournal1.com

Cognitive and Affective Empathy and Its Relationship to Proactive and Reactive Aggression in Vietnamese Adolescents

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Abstract

While aggression is considered as one of the most common behavior problems among adolescents, empathy can be a predictor of prosocial behaviors and underlines different implications for aggression in children. Empirical studies had proved that there was a negative correlation between empathy and aggression in children and adolescents. Nevertheless, the vast majority of studies on the relationship between aggression and empathy has been well documented in the literature with Western samples. The current study aims to examine the aggression-empathy association in Vietnamese adolescents and to explore whether or not aggression can be predicted by empathy and self-control. A total of 1,236 adolescents aged 12-13 years from 3 regions of Vietnam were asked to answer the survey package including the Reactive and Proactive Aggression Questionnaire, the Basic Empathy Scale and the Self-Control Questionnaire. Findings revealed that there was a statistically significant difference in aggression and empathy scores for gender, in which female adolescents showed a higher level of aggression and empathy than that of male ones. There was a strong negative relationship between aggression and empathy. Aggression can be predicted by empathy and self-control. Of the two variables, empathy was a better predictor of aggression (beta = -.42) than self-control (beta = -.37). The results add more valuable evidence to the existing literature on the relationship between aggression and empathy in a diverse population, and proved the role of education in enhancing empathy for adolescents in general and those with high levels of aggression in particular in school settings.

Keywords: aggression, empathy, self-control, Vietnamese adolescents, aggression-empathy relationship.

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1. Introduction

Empathy has been viewed as an emotional response related to other people's emotions and situations that is consistent with other individuals' emotional states (Eisenberg et al., 1991). Researchers acknowledged that empathy is a multidimensional concept that is comprised of both cognitive and affective components (Batanova, Loukas, 2014; Zych et al., 2020). The former refers to the capability of understanding emotions in other people and the latter refers to the capability of experiencing their emotions (Blake, Gannon, 2008; Jolliffe, Farrington, 2006). Empathy, therefore, not only underlies different implications for aggression (Caravita, et al., 2010; Batanova, Loukas, 2014) but is also an important predictor of prosocial behaviors (Zych et al., 2020). Marshall et al. (1995) proposed a model of empathy that consisted of 4 sequent stages: stage 1 – recognition of other's emotional states; stage 2 – perspective taking or ability to see things from the other's perspectives; stage 3 – compassionate response and stage 4 – take steps to help other's distress. It can be interpreted from the Marshall et al.,' model of empathy that the nature of empathy involving concerns for other emotional states can help in building a warm and close relationship with others. From our perspective, the ability to comprehend the emotions of others and the ability to experience the emotions of others can be viewed as the primary components of empathy construct. Empirical studies have found that a lack of empathy would lead to a tendency of aggression and disregard for other people's rights and pain (Marshall, Marshall, 2011; Miller, Eisenberg, 1988). Also, both empathy and self-esteem have been found to be a crucial element in the treatment of antisocial behaviors like aggression (Pechorro et al., 2015). As a result, the exploration of the relationship between empathy and oppositional behaviour in general and aggression in particular within adolescents has received much interest and priority in theoretical and empirical research (Marshall, Marshall, 2011).

There have been various studies on the association between empathy and aggression. McGee et al. (2021) highlighted that the relationship between low empathy and aggression had been studied for the past 50 years. Although the characteristics and level of this relationship caused different conflicts, most researchers have agreed that enhancing empathy might help reduce aggression. Aggression, one of the most common behaviour problems among adolescents, has been defined as behavior deliberately aiming to harm and hurt others physically or psychologically (Euler et al., 2017; Dodge, 1991). Aggression might be categorized based on its forms or function. Concerning the former criterion, aggression should be divided into direct and indirect aggression (including relational aggression and social aggression) or physical and relational aggression. With regards to the latter criterion, aggression can be classified into proactive aggression and reactive aggression. 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. Conversely, proactive aggression was described as a deliberate, instrumental and goal-oriented form of aggression (Hubbard, Swift, 2014; Seah, Ang, 2008).

Miller and Eisenberg were the first two authors carrying out systematic reviews on the relationship between empathy and aggression in 1988 with students and figured out the relationship between empathy and aggression from small to moderate. In particular, a negative correlation was recognized in studies on empathy when it was integrated into survey questionnaires ($r = -.18$), whereas when empathy was assessed by other methods, that correlation was identified at a lower level. For example, the empathy-aggression association was examined by facial and gesture methods ($r = -.06$) or pictures/story methods ($r = -.11$). Similar results were also discovered by Vachon, Lynam and Johnson (2014) through their meta-analysis into the relationship between empathy and two kinds of traditional aggression, namely verbal aggression and physical aggression. A growing body of literature showing negative correlation between empathy and kinds of aggression like physical and indirect ones among American students (Warren et al., 2011; Loudin et al., 2003), and in Australian ones (McGee et al., 2021). Studies on the association between empathy and other kinds of aggression like relational/indirect aggression, and social aggression has been limited. Recently, McGee et al. (2021) conducted a research on a sample of Australian students and discovered that low empathy should be the predictor of different kinds of aggression such as relational, online and physical aggression. However, regarding more modern aggression like online aggression and cyberbullying, empathy (cognitive empathy) would not be the predictor of aggression rather than other variables like gender and social skills (Kokkinos et al., 2014). From another perspective, factors related to family (such as a warm

connection and positively interactive relationship among family members) would make children less aggressive than those not living in a happy family atmosphere (Batanova, Loukas, 2014; Arim et al., 2011). In addition, positive family relations might also help adolescents improve their cognitive and affective empathy (Soenens et al., 2007; Carlo et al., 2007; Eisenberg et al., 2006). Similarly, children with good school relationships were reported to have less aggression like school bullying (Loukas, Murphy, 2007) and showed more empathic concern to others. Studies on predictive factors for aggression among adolescents found that females with low empathy would have potential to show overt aggression rather than relational aggression; at the same time, male adolescents with a high level of empathy and positive school connection would have less overt aggression (Batanova, Loukas, 2014). It is, therefore, advised that building more connection within family and school as well as empathic concern would significantly contribute to the prevention of aggression in the early adolescent stage. Thus, the two components of empathy play a key role in reducing both overt aggression and relational aggression within adolescents (Endresen, Olweus, 2011; Jolliffe, Farrington, 2011; De Kemp et al., 2007).

In addition to empathy, predictability of the above kinds of aggression would be stronger if low empathy is associated with other predicted variables like low self-control (McGee et al., 2021), social intelligence (Kaukiainen et al., 1999) or social skills (Kokkinos et al., 2014). Nevertheless, the vast majority of studies has focused on the relationship between empathy and different kinds of aggression based on its forms or in-person aggression such as physical aggression and online aggression. In fact, aggression can also be classified based on its function like proactive aggression and reactive aggression. Studies on the association between empathy and those two kinds of function-based aggression have been limited. More specifically, there have been few works on the significance and predictability of potential variables including self-control and empathy for proactive and reactive aggression among adolescents in Vietnam.

Consequently, the current study differs from others in two points: Firstly, this is one of the first studies in a Vietnamese context to explore the relationship between empathy and proactive and reactive aggression as well as the difference between genders with regard to this relationship. Secondly, this study also places emphasis on the predictability of self-control and empathy with regard to proactive and reactive aggression. In order to achieve these objectives, the following research questions would be answered:

Research questions:

1. Whether or not there is any difference between genders in relation to empathy (cognitive empathy and affective empathy), aggression (proactive aggression and reactive aggression) and self-control?
2. Whether or not there is correlation between cognitive and affective empathy and proactive and reactive aggression? How is that correlation different between genders?
3. How much predictability do empathy and self-control have in relation with aggression? And which of these two factors is the best predictor?

2. Materials and methods

Participant characteristics

The research sample included 1,236 students at the age of 12-13 in 3 regions of Vietnam: The North (Hanoi City), the Central (Nghe An), the South (Ho Chi Minh City). The sample size was calculated based on guidance by Iarossi (2006), with a tolerance of 0.5 and reliability of 95 %. For the total number of 750 students aging 12-13 per school, the researchers needed 203 students per school. In each region, there were 2 secondary schools selected, then, the required number of students was 203*8 = 1,218. However, the sample size of the actual study was a little bigger than the proposed sample, which included 1,236 students.

Among the 1,236 students, the percentage of female individuals was higher than that of males with 51.9 % and 48.1 % respectively. Characteristics of the research sample were described in Table 1.

Table 1. Demographic characteristics of samples

Sociodemographic characteristics	Vietnamese adolescents (N=1,236)	
	N	%
Gender		
Male	595	48.1
Female	641	51.9
Academic Performance		
Excellent	675	54.6
Good	461	37.3
Average	100	8.1
Location		
North	405	32.80
Central	427	34.50
South	403	32.60

Procedure

The research data was collected in 2020. The participants were selected with the consent of the local Districts Office of Education and Training, the principal, parents and students. After the research group received the principals' approval, a classroom-based survey was carried out. Prior to collecting data, the consent form was sent to the students' parents/caregivers by the form teacher. Students were also introduced to the study, rights and confidentiality in the case of participating in the research. Next, they signed in the assent form for adolescents. Based on the agreement of adolescents and their parents, the research team went to each class to provide instructions about answering the questionnaire and collecting those responses.

Measures

Empathy was measured by the Basic Empathy Scale (BES, Jolliffe, Farrington, 2006). The BES consists of 20 items and is comprised of two subscales 'cognitive empathy' (9 items) and 'affective empathy' (11 items). The BES uses a 5-point Likert scale from 1 – strongly disagree to 5 – strongly agree. Some converted items helped to assess levels of empathy in children as well as cognitive and affective subscales. Within the current study the value of Cronbach's alpha reliability for cognitive empathy $\alpha = .76$, for affective empathy $\alpha = .74$, and for the total BES $\alpha = .75$, which showed good internal consistencies.

Aggression was measured by The Reactive and Proactive Aggression Questionnaire (RPQ, Raine et al., 2006). The RPQ 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 comprised of 11 items. With regard the current study, the reliability (Cronbach's α) of reactive aggression ($\alpha = .80$), proactive aggression ($\alpha = .79$), and the total RPQ scale ($\alpha = .81$) were sufficient.

Self-control was evaluated with the Self-Control Questionnaire (SCQ). This questionnaire was designed by the research team based on different sources such as The Emotion Regulation Questionnaire by Gross and John (2003), or the 10-Item Self-scoring Self-control Scale (Tangney et al., 2004). The SCQ consisted of 21 items based on a 5 – point Likert scale ranging from 1 – completely untrue for me; 2 – true for me to some extent; 3 – quite true; 4 – mostly true for me; 5 – completely true for me. The total score for the 21 items would provide the level of self-control of students. The minimum score was 21 and the maximum score was 105. This SCQ questionnaire had a good internal consistency with Cronbach's Alpha of .87.

It should be noted that both the BES and the RPQ were allowed by the above authors to be used in the current study, which were also culturally and language-adapted based on the following steps. Step 1: Having the questionnaires translated from English into Vietnamese by a

psychological PhD candidate who mastered both languages of English and Vietnamese. Step 2: Having the BES and the RPQ questionnaires back translated from Vietnamese into English by a linguist. After that, the back-translated version in English was examined by the two authors of the scale to check linguistic and grammatical accuracy. Step 3: A pilot survey was conducted to ensure the appropriateness of linguistics and grammar. The pilot study was undertaken with 50 students, which showed that all of them could understand and give answers to the translated questionnaires. Then, the survey was implemented with a larger size of 1,236 students.

Data analytic plan

Responses were analysed using SPSS version 22. Reliability was evaluated using Cronbach's Alpha; Pearson correlation coefficients followed the criteria proposed by Cohen (1988) (.10 ≤ r < .30: small; .30 ≤ r < .50: medium; r ≥ .50: large). The eta squared statistic to measure the effect size of the correlation using the formula suggested by Palland (2016) and the guidelines proposed by Cohen (1988) for this value are: .01 = small effect; .06 = moderate effect; .14 = large effect. Other statistical parameters such as mean and deviation, *t*-test were employed to illustrate the current status of aggression, empathy, self-control in Vietnamese adolescents and the differences in scores between genders respectively. A one-way between groups analysis of variance (ANOVA) was also applied to find out if aggression and empathy differed by adolescents' academic performance.

3. Results

Gender difference in regard of aggression, self-control and empathy

In order to answer the first research question, an independent sample *t*-test was performed to find out the difference between male and female adolescents in terms of their aggression, empathy and self-control (Table 2).

Table 2. Mean and standard deviation of aggression, empathy and self-control by gender

	Males (N=595)		Females (N=641)		Range		t	p
	M	SD	M	SD	Min	Max		
Aggression	9.31	5.08	9.60	4.73	0	46	-1.03	.03
Proactive aggression	1.91	2.36	1.65	1.94	0	24	2.06	.04
Reactive aggression	7.40	3.43	7.95	3.38	0	22	-2.81	.004
Empathy	66.52	8.20	70.73	8.35	37	98	-8.93	.000
Cognitive empathy	31.53	4.66	33.17	4.47	12	45	-6.27	.000
Affective empathy	34.98	5.74	37.56	5.67	14	55	-7.92	.000
Self -control	56.22	10.86	56.18	9.46	21	105	0.07	.93 (n.s)

Table 2 illustrated that there was a statistically significant difference in aggression between male and female adolescents with p < .05. The mean and standard deviation of aggression for females (M = 9.60, SD = 4.73) was higher than that of males (M = 9.31, SD = 5.08). The statistical difference between male and female adolescents was also found with both proactive aggression and reactive aggression (p < .05). Concerning proactive aggression, the mean score of male adolescents (M = 1.91, SD = 2.36) was higher than that of female ones (M = 1.65, SD = 1.94). In contrast, regarding reactive aggression the mean score of female adolescents (M = 7.95, SD = 3.38) was higher than that of males (M = 7.40, SD = 3.43).

Statistically significant differences were found between males and females regarding empathy and the two components of empathy (p = .000). Particularly, female adolescents had

higher scores for empathy than the males in terms of both cognitive empathy (M = 33.13, SD = 4.66 vs. M = 31.53, SD = 4.47) and affective empathy (M = 37.56, SD = 5.74 vs. M = 34.98, SD = 5.67).

Regarding self-control, there was no statistical difference between male and female adolescents ($p > 0.05$).

Correlation between empathy and aggression among Vietnamese adolescents

To address our second research question, a test of Pearson (r) correlation was performed between the main study variables including cognitive, affective subscales and total empathy scale; reactive, proactive subscales and total aggression scale (Figure 1). As can be seen from Figure 1, there was a significant negative correlation between reactive, proactive, total aggression and affective, total empathy scores. Aggression subcomponents and empathy subtypes correlated significantly with each other. Aggression had quite a strong negative correlation with empathy ($r = -0.53$, $p < .01$). When adolescents displayed aggression, they would not be empathetic with the victims of their behavior. Aggressive adolescents would neither understand the victims' emotions nor share with them an appreciation of their painful experiences.

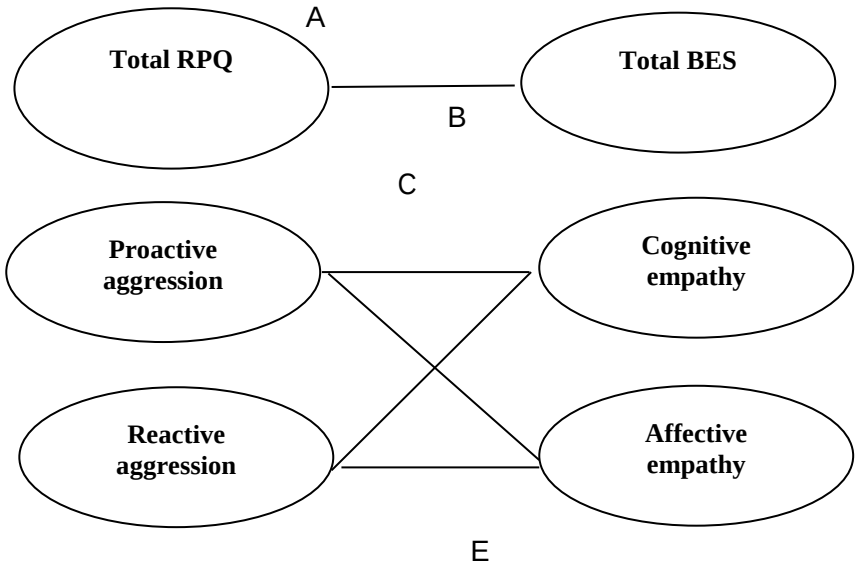

Fig. 1. The correlation between aggression and empathy in Vietnamese adolescents

A: Total: -0.53***; Male: -0.22**; Female: -0.32***
B: Total: -0.17**; Male: -0.57**; Female: -0.14***
C: Total: -0.45***; Male: -0.40**; Female: -0.25***
D: Total: -0.18***; Male: -0.22**; Female: -0.32***
E: Total: -0.46***; Male: -0.18**; Female: -0.30***
A: Correlation between aggression and empathy.
B: Correlation between proactive aggression and cognitive empathy.
C: Correlation between proactive aggression and affective empathy.
D: Correlation between reactive aggression and cognitive empathy.
E: Correlation between reactive aggression and affective empathy
(**): $p < 0.01$; (***): $p < 0.05$.

The negative correlation was also pointed out in relation to cognitive empathy, affective empathy and proactive aggression and reactive aggression. However, there was a difference between males and females in this relationship. Diagram 1 showed that the empathy-aggression association among females was higher than that of males in most relationships related to reactive aggression (D, E). The biggest correlation among female adolescents was between reactive aggression and cognitive empathy ($r = -.32$), the lowest correlation among them was between proactive aggression and cognitive empathy ($r = -.14$). On the contrary, regarding male adolescents, the correlation between aggression and empathy was higher than that of females in relationships related to proactive aggression (B, C). The biggest correlation among male adolescents was

between proactive aggression and cognitive empathy (r = -.57), the lowest correlation among them was between reactive aggression and affective empathy (r = -.18). This was consistent with results in Table 2 as male adolescents exhibited proactive aggression more frequently than female ones, while female adolescents showed reactive aggression more commonly than the opposite gender. Whether in proactive or reactive aggression, when adolescents displayed either type of aggression, they were not empathetic with the victims of their behavior in both cognitive and affective aspects.

Predictability of empathy and self-control over aggression

In order to find out the answer to the third research question, standard multiple regression was employed, which would help in clarifying the predictability of empathy and self-control over aggression among Vietnamese adolescents (Table 3).

Table 3. Results of standard multiple regression analyses

	Adjusted R Square	Beta	sig	VIF
Model	.472		0.000	
Empathy (BES)		-.42	0.000	1.37
Self-control (SCQ)		-.37	0.000	1.37

Results of the standard multiple regression analyses (Table 3) revealed that our model, which included control of empathy (BES) and control of self-control (SCQ), explains 47.2 % of the variance in aggression. Of these two variables, empathy made the largest contribution or a better predictor of aggression (beta = -.42), although self-control also made a statistically significant contribution (beta = -.37). Thus, it can be seen that aggression among adolescents in Vietnam could be predicted through empathy and self-control.

In addition, this study also explored the impact of adolescents' academic performance on aggression and empathy. A one-way between groups analysis of variance (ANOVA) was performed to explore the impact of academic performance on levels of aggression and empathy, as measured by the RPQ and the BES. Participants were divided into three groups according to their academic achievement ('excellence', 'good' and 'average'). There was a significant statistical difference in scores at p <. 05 for level of reactive, proactive and total aggression for the three academic achievement groups: F (2, 1,233) = 1.12; p = .03. Despite reaching a statistical significance, the actual difference in the mean scores between the groups was quite small. The effect size, calculated using eta square, was .01. According to Cohen's (1988, p. 284) guidance, this was a small effect. Post-hoc comparison using the Turkey HSD test showed that the mean score for 'good' students (M = 9.35; SD = 5.10) and 'excellent' students (M = 9.03; SD = 4.58) were significantly different from 'average' students (M = 9.70; SD = 4.67), p<.05. 'Excellent' students did not differ from 'good' students.

The same results were also found for empathy. There was a significant difference at p < .001 level of empathy as well as two components of empathy for the three academic groups: F (2, 1,233) = 9.86, p = .00. Post-hoc comparison using the Turkey HSD test revealed that the mean score for 'excellent' students (M = 69.56; SD = 8.52) and 'good' students (M = 68.02; SD = 8.37) was significantly different from 'average' students (M = 66.03; SD = 8.69), p = .00. The effect size, calculated using eta square, was quite small at .02 (Cohen's, 1988: 284).

4. Discussion

This study aimed to investigate the relationship between cognitive and affective empathy and proactive and reactive aggression, as well as the predictability of empathy and self-control over aggression among adolescents in Vietnam. Research findings helped in answering the research questions.

First, there was a difference between male and female adolescents in terms of aggression in general and proactive and reactive aggression, in particular. It was noticeable that the male adolescents showed a higher level of proactive aggression than the females, whereas female adolescents exhibited a

higher level of reactive aggression than males. This is consistent with previous studies' results, which were related to gender differences in terms of proactive aggression among adolescents. For example, in Fung, Raine, Gao' (2009) study, using a large sample of youth, found that proactive aggression increased for boys across adolescence but is more likely to remain stable for girls. However, what made this study different from others was that with Vietnamese adolescents, female adolescents displayed higher levels of aggression than male ones, specifically in regard to reactive aggression. This can be partly explained by the culture, which would have an impact on different aggression levels among male and female adolescents in different countries (Bergeron, Schneider, 2005; Anderson et al., 2010). Vietnam is situated in South East Asia, which has been largely influenced by Confucianism. The belief holds high regards for girly features and females' traditions. That the girls have always been expected to be discreet and soft made it inappropriate to show their aggression. Consequently, in the case of uncomfortable situations or provoking aggression, the girls would express their emotions rather than through overt behaviors. This is true to the extent that aggression was believed to be driven by emotional causes and the expression of aggression would be the way to release the emotions (Dogde, 1991). Those differences between male and female adolescents were also evident in relation to their empathy. To be more specific, female adolescents expressed empathy, including both cognitive and affective empathy, at a higher level than the males. This was in line with previous studies (Baez et al., 2017; McGee et al., 2021). However, neither male nor female adolescents showed their differences in terms of self-control.

Second, the findings in this research supported those in previous studies with respect to the relationship between empathy and aggression (Miller, Eisenberg, 1988; Mehrabian, 1997; Salas-Wright et al., 2012). Accordingly, empathy had a negative correlation with aggression. A body of empirical studies proved that aggression might be inhibited by empathy (Batanova, Loukas, 2016; Gni et al., 2008; Tangney et al., 2002). This is because the nature of empathy was linked to the care of other people in terms of cognitive and affective aspects. Researchers indicated that both cognitive and affective empathy play a crucial role in the inhibition of overt and relational aggression in early adolescents (Batanova, Loukas, 2014). Then, therefore, a higher level of empathy was connected with appropriate behaviour and contributed to personal relationships in a close and warm manner (Eisenberg et al., 2010). Cognitive empathy was also known as the capability of understanding other people's emotional states so the higher the cognitive empathy was, the higher the possibility of an aggression explosion would be (Warren et al., 2011). Despite different findings about aggression and empathy in different cultures (Anderson, 2010), the association between them seems to be universal. While the empathy-aggression association was based on its forms (physical aggression, verbal aggression) explored through questionnaires was not strong (Miller, Eisenberg, 1988), the association between empathy and aggression based on functional criteria (proactive and reactive aggression) within the current study was very strong. This result is valuable, which adds more evidence to the existing literature on the relationship between empathy and aggression, and proved that during adolescence empathy can buffer against aggression (Castillo et al., 2013).

A pivotal point of this study was the different correlation between empathy and aggression among male and female adolescents. While males exhibited proactive aggression more often than females, showing higher correlation between empathy and proactive aggression; females displayed higher reactive aggression, leading to a higher correlation between empathy and reactive aggression. This finding supported recommendations for different interventions within children showing different aggression. For example, the interventions for reactive aggression would focus more on self-control or anger regulation training and problem-solving skills. In contrast, those for proactive aggression would acknowledge the improvement of empathy and consciousness about negative effects of aggression (Hubbard, Swift, 2014). The association between empathy and proactive, reactive aggression among adolescents in Asian countries like Vietnam within the current study would provide more evidence on the empathy-aggression relationship, which has been researched for a long time.

Third, proactive and reactive aggression in this study was predicted by two variables, self-control and empathy. Yeo et al. (2011) highlighted that the aggression-empathy relationship may be different in different types of aggression. There have been numerous studies about the relationship between empathy and different kinds of aggression, ranging from traditional ones like physical and relational aggression (Eisenberg et al., 2010; Yeo et al., 2011), to criminal offenders

(Jolliffe, Farrington, 2004), cyberbullying (Lee, Shin, 2017) or bullying (Kokkinos, Kipritsi, 2012; Jolliffe, Farrington, 2006). Also, self-control was proved to have a relationship with aggression: higher self-control would illustrate a lower level of relational aggression, physical aggression and online aggression (McGee, 2021). Within the current study, empathy was more capable of predicting proactive aggression and reactive aggression than self-control. This result supported the conclusion by L.E. Marshall and W.L. Marshall (2011), which stated that humans' lack of empathy would tend to lead to more aggression or behaviors that ignore the rights or suffering of others. Research showed that there would be various elements to moderate the relationship between empathy and aggression like empathy level, aggression level, and demographic features of the participants, such as age, gender, ethnic group (Vachon et al., 2014). In addition to the self-control and empathy as stated above, this study also demonstrated that academic competency of adolescents would impact their aggression and empathy level. This might be due to education playing an important role in the relationship between empathy and aggression as the empathy-aggression connection (physical and verbal) would not exist among participants with a low academic background (MacGee et al., 2021).

Although this study provided clear answers to the research questions, it still had certain limitations. First, the study focused on early adolescents, in this case, the relationship between empathy and aggression would be not the same as that among those at a later adolescent period. This can be explained by the cognitive empathy in a more mature period, which might influence the possibility of aggression. Therefore, future studies can expand participants to the whole adolescent period to demonstrate clear differences. Second, this was a cross-sectional study, hence, it could not reflect the development of aggression and empathy among adolescents on a complete basis. Third, although this research demonstrated that self-control and empathy were predictors for aggression, it could have been more valuable with regard to proactive and reactive aggression, if it had discovered whether there would be any differences between adolescents with low and high self-control, as well as those with high and low empathy. Finally, this study was solely based on self-report, which was not compared with evaluations from friends, parents, and teachers, therefore, in the future, there would be a more complete reflection if different kinds of methods and participants were incorporated.

5. Conclusion

This study was carried out among Vietnamese adolescents in 3 regions including the North, South and the Central. It focused on investigating the relationship between empathy and aggression, the difference between male and female participants in this aspect as well as the predictive role of empathy and self-control towards proactive and reactive aggression. The results demonstrated that adolescents with good empathy would express lower aggression and vice versa. The empathy-aggression connection was different between male and female adolescents. More specifically, empathy was a better predictor than self-control for aggression among adolescents. Results emphasized the role of education in improving empathy to mitigate aggression and reducing school bullying, which has been at an alarming level in Vietnam. In fact, empathy is a kind of competence that can be improved thanks to the educational process (Marshall, Marshall, 2011).

6. Acknowledgements

This research is funded by Vietnam National Foundation for Science and Technology Development (NAFOSTED) under grant number 501.01-2018.01.

References

Anderson et al., 2010 – *Anderson, C.A., Shibuya, A., Ihori, N., Swing, E.L., Bushman, B.J., Sakamoto, A., Rothstein, H.R., Saleem, M.* (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin*. American Psychological Association. 136(2): 151-173.

Arim et al., 2011 – *Arim, R.G., Dahinten, V.S., Marshall, S.K., Shapka, J.D.* (2011). An examination of the reciprocal relationships between adolescents' aggressive behaviors and their perceptions of parental nurturance. *Journal of Youth and Adolescence*. 40: 207-220.

Blake, Gannon, 2008 - *Blake, E., Gannon, T.* (2008). Social perception deficits, cognitive distortions, and empathy deficits in sex offenders: A brief review. *Trauma, Violence and Abuse*. 9: 34-55.

Batanova, Loukas, 2016 – *Batanova, M., Loukas, A.* (2016). Empathy and Effortful Control Effects on Early Adolescents' Aggression: When Do Students' Perceptions of Their School Climate Matter? *Applied Developmental Science*. 20(2): 79-93. DOI: 10.1080/10888691.2015.1067145

Batanova, Loukas, 2014 – *Batanova, M., Loukas, A.* (2014). Unique and interactive effects of empathy, family, and school factors on early adolescents' aggression. *Journal of Youth Adolescents*. 43: 1890-1902.

Bergeron, Schneider, 2005 – *Bergeron, N., Schneider, B.* (2005). Explaining cross-national differences in peer-directed aggression: A quantitative synthesis. *Aggressive Behavior*. 31: 116-137.

Baez et al., 2017 – *Baez, S., Flichtentrei, D., Prats, M., Mastandueno, R., Garcia, A.M., Cetkovich, M., Ibanez, A.* (2017). Men, women ... who cares? A population-based study on sex diff erences and gender roles in empathy and moral cognition. *PLoS One*. 12(6).

Caravita et al., 2010 – *Caravita, S., Blasio, P.D., Salmivalli, C.* (2010). Unique and interactive effects of empathy and social status on involment in bullying. *Social Development*. 18(1): 141-163.

Castillo et al., 2013 – *Castillo, R., Salguero, J.M., Fernández-Berrocal, P., Balluerka, N* (2013). Effects of an emotional intelligence intervention on aggression and empathy among adolescents. *Journal of Adolescence*. 36: 883-892.

Cohen, 1988 – *Cohen, J.* (1988). Statistical power analysis for the behavioral sciences. Hilsdale. NJ: Lawrence Earlbaum Associates.

Carlo et al., 2007 – *Carlo, G., McGinley, M., Hayes, R., Batenhorst, C., Wilkinson, J.* (2007). Parenting styles or practices? Parenting, sympathy, and prosocial behaviors among adolescents. *The Journal of Genetic Psychology*. 168(2): 147-176.

De Kemp et al., 2007 – *De Kemp, R., Overbeek, G., De Wied, M., Engels, R., Scholte, R.* (2007). Early adolescent empathy, parental support, and antisocial behavior. *The Journal of Genetic Psychology*. 168(1): 5-18.

Dodge, 1991 - *Dodge, K.A.* (1991). The structure and function of reactive and proactive aggression. In *The Development and Treatment for Childhood Aggression*. Edited by Pepler D., Rubin D.K., Hillsdale: Erlbaum, 201-218.

Eisenberg et al., 2010 – *Eisenberg, N., Eggum, N.D., Di-Giunta, L.* (2010). Empathy-related responding: associations with prosocial behavior, aggression, and intergroup relations. *Social Issues Policy Review*. 4(1): 143-80.

Eisenberg et al., 1991 – *Eisenberg, N., Shea, C.L., Carlo, G., Knight, G.P.* (1991). Empathy related responding and cognition: A "chicken and the egg" dilemma. In W. M. Kurtines (Ed.), *Handbook of moral behavior and development, Research*. 2: 63-88. Hillsdale: Erlbaum.

Eisenberg et al., 2006 – *Eisenberg, N., Fabes, R.A., Spinrad, T.L.* (2006). Prosocial development. In W. Damon & R.M. Lerner (Series Eds.) & N. Eisenberg (Vol. Ed.). Handbook of child psychology, Vol. 3: Social, emotional, and personality development (6th ed., pp. 646-718). New York, NY: John Wiley.

Endresen, Olweus, 2011 – *Endresen, I.M., Olweus, D.* (2001). Self-reported empathy in Norwegian adolescents: Sex differences, age trends, and relationship to bullying. In A.C. Bohart & D.J. Stipek (Eds.). Constructive and destructive behavior: Implications for family, school and society (pp. 147-166). Washington, DC: American Psychological Association.

Euler et al., 2017 – *Euler, F., Steinlin, C., Stadler, C.* (2017). Cognitive and affective empathy. *Child Adolescent Psychiatry Mental Health*. 11(1). DOI: 10.1186/s13034-016-0141-4

Fung et al., 2009 – *Fung, A.L-C., Raine, A., Gao, Y.* (2009). Cross-cultural generalizability of the Reactive-Proactive Aggression Questionnaire (RPQ). *Journal of Personality Assessment*. 91: 473-479. DOI: 10.1080/00223890903088420

Gni et al., 2008 – *Gni, G., Albiero, P., Benelli, B., Altoe, G.* (2008). Determinants of adolescents' active defending and passive bystanding behaviour in bullying. *Journal of Adolescence*. 31: 93-105. DOI: 10.1016/j.adolescence.2007.05.002

Gross, John, 2003 – *Gross, J.J., John, O.P.* (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*. 85: 348-362.

Hubbard, Swift, 2014 - *Hubbard, L.A., Swift, L.E. (*2014). Treatment for Anger Regulation and Reactive Aggression in Young Children. In E. Fernandez (Eds.). Treatments for Anger in Specific Populations: Theory, Application and Outcomes, 197-212.

Jolliffe, Farrington, 2006 – *Jolliffe, D., Farrington, D.P. (*2006). Development and validation of the Basic Empathy Scale. *Journal of Adolescence*. 29: 589-611. DOI: 10.1016/j.adolescence.2005.08.010

Jolliffe, Farrington, 2011 – *Jolliffe, D., Farrington, D.P.* (2011). Is low empathy related to bullying after controlling for individual and social background variables? *Journal of Adolescents*. 34(1): 59-71.

Jolliffe, Farrington, 2004 – *Jolliffe, D., Farrington, D.P.* (2004). Empathy and off ending: A systematic review and meta-analysis. *Aggression and Violent Behavior*. 9(5): 441-476.

Kokkinos et al., 2014 – *Kokkinos, C.M., Antoniadou, N., Markos, A.* (2014). Cyber-bullying: An investigation of the psychological profi le of university student participants. *Journal of Applied Developmental Psychology*. 35(3): 204-214.

Kaukiainen et al., 1999 – *Kaukiainen, A., Björkqvist, K., Lagerspetz, K., Ö Sterman, K., Salmivalli, C., Rothberg, S., Ahlbom, A.* (1999). The relationships between social intelligence, empathy, and three types of aggression. *Aggressive Behavior*. 25: 81-89.

Kokkinos, Kipritsi, 2012 – *Kokkinos, C.M., Kiprits, E.* (2012). The relationship between bullying, victimization, trait emotional intelligence, self-efficacy and empathy among preadolescents. *Social Psychology Education*. 15: 41-58. DOI: 10.1007/s11218-011-9168-9

Lee, Shin, 2017 – *Lee, C., Shin, N.* (2017). Prevalence of cyberbullying and predictors of cyberbullying perpetration among Korean adolescents. *Computer Human Behavior*. 68: 352-358.

Loudin et al., 2003 – *Loudin, J.L., Loukas, A., Robinson, S.* (2003). Relational aggression in college students: Examining the roles of social anxiety and empathy. *Aggressive Behavior*. 29(5): 430-439.

Loukas, Murphy, 2007 – *Loukas, A., Murphy, J.L.* (2007). Middle school student perceptions of school climate: Examining protective functions on subsequent adjustment problems. *Journal of School Psychology*. 45: 293-309.

McGee et al., 2021 – *McGee, T.R., Jolliffe D., Ericksson, L., Bond, C.E.W., Farrington, D.P.* (2021). 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, 16-30.

Miller, Eisenberg, 1988 – *Miller, P.A., Eisenberg, M.* (1988). The relation of empathy to aggression and externalizing/antisocial behavior. *Psychological Bulletin*. 103: 324-344.

Marshall, Marshall, 2011 – *Marshall, L.E., Marshall, W.L.* (2011). Empathy and antisocial behavior. *The Journal of Forensic Psychiatry & Psychology*. 22(5): 742-759. DOI: 10.1080/14789949.2011.617544

Marshall et al., 1995 – *Marshall, W.L., Hudson, S.M., Jones, R., Fernandez, Y.M.* (1995). Empathy in sex offenders. *Clinical Psychology Review*. 15: 99-113.

Mehrabian, 1997 – *Mehrabian, A.* (1997). Relations among personality scales of aggression, violence, and empathy: Validational evidence bearing on the Risk of Eruptive Violence Scale. *Aggressive Behavior*. 23: 433-445.

Palland, 2016 – *Palland, J.* (2016). SPSS – Survival Manual – a Step by Step Guide to Data Analysis Using IBM SPSS. Open University Press, New York: Mc Graw Hill Education.

Pithers, 1999 – *Pithers, W.D.* (1999). Empathy: Definition, enhancement, and relevance to the treatment of sexual abusers. *Journal of Interpersonal Violence*. 14: 257-284.

Pechorro et al., 2015 – *Pechorro, P., Ray, J.V., Salas-Wright, C.P., Maroco, J., Goncalves, R.A.* (2015). Adaptation of the basic empathy scale among a Portuguese sample of incarcerated juvenile offenders. *Psychology, Crime & Law*. 21: 699-714. DOI: https://doi.org/10.1080/1068316X.2015.1028546

Rainne et al., 2006 – *Raine, A., Dodge, K., Loeber, R., Gatzke-Kopp, L., Lynam, D., Reynolds, C., Stouthamer-Loeber, M., Liu, J.* (2006). The reactive-proactive aggression questionnaire: Differential correlates of reactive and proactive aggression in adolescent boys. *Journal of Aggressive Behavior*. 32(2): 159-171.

Soenens et al., 2007 – *Soenens, B., Duriez, B., Vansteenkiste, M., Goosens, L.* (2007). The intergenerational transmission of empathy-related responding in adolescence: The role of maternal support. *Personality and Social Psychology Bulletin*. 33: 299-311.

Salas-Wright et al., 2012 – *Salas-Wright, C.P., Olate, R., Vaughn, M.G.* (2012). Assessing Empathy in Salvadoran High-Risk and Gang-Involved Adolescents and Young Adults: A Spanish Validation of the Basic Empathy Scale. *International Journal of Offender Therapy and Comparative Criminology*. 57(11): 1393-1416. DOI: 10.1177/0306624X12455170

Seah, Ang, 2008 – *Seah, S.L., Ang, R.P.* (2008). Differential Correlates of Reactive and Proactive Aggression in Asian Adolescents: Relations to Narcissism, Anxiety, Schizotypal Traits, and Peer Relations. *Aggressive Behavior*. 34: 553-562.

Tangney et al., 2002 – *Tangney, J.P., Baumeister, R.F., Boone, A.L.* (2002). High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success. *Journal of Personality*. 72(2).

Tangney et al., 2004 – *Tangney, J.P., Baumeister, R.F., Boone, A.L.* (2004). High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success. *Journal of Personality*, 271-324.

Vachon et al., 2014 – *Vachon, D.D., Lynam, D.R., Johnson, J.A.* (2014). The (non)relation between empathy and aggression: Surprising results from a meta-analysis. *Psychological Bulletin*. 140: 751-773.

Warren et al., 2011 – *Warren, P., Richardson, D.S., McQuillin, S.* (2011). Distinguishing among non-direct forms of aggression. *Aggressive Behavior*. 37(4): 291-301.

Yeo et al., 2011 – *Yeo, L.S., Ang, R.P., Loh, S., Fu, K.J., Karre, J.K.* (2011). The Role of Affective and Cognitive Empathy in Physical, Verbal, and Indirect Aggression of a Singaporean Sample of Boy. *Journal of Psychology*. 145(4): 313-330.

Zych et al., 2020 – *Zych, I., Farrington, D.P., Nasaesc, E., Jolliffe, D., Twardowska-Staszek, E.* (2020). Psychometric properties of the Basic Empathy Scale in Polish children and adolescents. *Current Psychology*. DOI: https://doi.org/10.1007/s12144-020-00670-y