



Investigations of Cyber Bullying and Traditional Bullying in Adolescents on the Roles of Cognitive Empathy, Affective Empathy, and Age

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Little is known about the associations between bullying, empathy, and age. Therefore, the purpose of this research was to investigate the relationships between traditional bullying (verbal, physical, and relational) and cyber bullying based on the roles of cognitive empathy, affective empathy and age among adolescents. Three instruments to collect data were the Interpersonal Reactivity Index to measure the level of empathy, the Adolescent Peer Relations Instrument to measure the level of traditional bullying, and the Adolescent Peer Relations Instrument to measure the level of cyber bullying behavior. The sample in this research was 685 female students and 538 male students from three private high schools in Surabaya, Indonesia. Proportionally stratified samples were used to determine the sample. The data obtained were analyzed using Pearson Product-moment and Multiple Regression. The results showed that males were more often involved in bullying than females, and the level of empathy (cognitive and affective) of males was lower than females. It was only affective empathy that was significantly negatively related to traditional bullying. Age also correlated positively with traditional bullying, and the higher the age in the adolescents, the more they engaged in traditional bullying. The implication of this research was highlighting the role of affective empathy as part of efforts to prevent bullying and and to solve various bullying-related problems.

Keywords: traditional bullying, cyber-bullying, affective empathy, cognitive empathy, age

INTRODUCTION

Bullying is one of the most urgent acts of violence that needs to be conquered in Indonesia today. The data from Indonesian Child Protection Commission (2020) reported that at least 37,381 bullying cases occurred in Indonesia between 2011 to 2019, 2,473 cases allegedly occurred in schools. Bullying is affecting children and adolescents not only in Indonesia, but also in many other nations. Bullying is “unwanted, intentional, and aggressive behavior that involves an imbalance of power between the offender and the victim and is carried out repeatedly over time” (Olweus, 2000). There are some kinds of bullying, viz., traditional bullying - which is classified into physical (shoving, hitting, kicking), verbal (name-calling, teasing in a hurtful way, verbal threats),

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relational (peer-group exclusion, gossiping, denying friendship, telling lies to isolate other person) (Dardiri et al., 2020; Hadisi et al., 2019) and cyber bullying, which has been a new form of bullying. Cyber bullying is “an act of violence carried out through the internet or electronic devices such as cell phones; examples are: threatening comments, accessing and misusing personal data, and distributing personal information (for example, through the internet)” (Kowalski et al., 2014). Thus, bullying can now occur not only in the school environment but anywhere else too, as long as an internet network is available (Monks et al., 2012).

Bullying influences negatively on its victims and perpetrators. Victims are more likely to suffer from decreased self-image and self-esteem, reactive aggression, anxiety, depression, and low academic performance (Jain et al., 2020; Uzunboylu et al., 2017; Grinshteyn & Yang, 2017). Although the perpetrators are disliked by some classmates, they are viewed as popular and seem to receive additional status and power from their bullying behavior (Vaillancourt et al., 2003). Being a perpetrator is also found to be significantly related to substance use, poor academic achievement, depression, anxiety, and more aggressive behavior in the future (Ttofi et al., 2011; Klomek et al., 2007). Bullying behavior occurs because the perpetrators do not have empathy and guilt towards the victim (Beauchaine & Hinshaw, 2016). Some researchers suggested that in anticipating antisocial or violent behavior one needs to promote pro-social behavior (van Noorden et al., 2014) and empathy (Rahmah et al., 2021; Shannen et al., 2021; Syahril et al., 2020; Longobardi et al., 2019). Some studies reported a significant correlation between pro-social behavior and empathy (Van der Graaff et al., 2018).

Empathy is “an emotional response to another person's emotional state or situation, which is in harmony with the other person's emotional state or situation” (Eisenberg & Strayer, 1987: 5). Therefore, the construct of empathy consists of two elements, namely cognitive and affective empathy. Cognitive empathy means having the ability to perceive and know other's emotional state, and affective empathy refers specifically to the capacity to share other's feelings and respond them appropriately (Chiu & Yeh, 2017; Davis, 1994). According to Blair (2005), cognitive empathy is a precondition for experiencing affective empathy. Even though empathy is a combination of cognitive and affective components, the development of each component and its role in a person's behavior varies (Blair, 2005). Empathy generally is likely to increase with age (Nesdale et al., 2009), and improves in late adolescence when it becomes an important part in social relations (Albiero et al., 2009).

The correlation between bullying behavior and empathy in adolescence has often been investigated. Recent studies showed a significant negative correlation is found between bullying behavior and cognitive and affective empathy in adolescents (Kokkinos & Kipritsi, 2017; Zych et al., 2018). In contrast, Schultze-Krumbholz et al. (2020) found that negative relations occur to only affective empathy with bullying, while the correlation between cognitive empathy and bullying is not significant. Previous studies also reported a negative correlation between affective empathy and bullying (Zych et al., 2019; Antoniadou & Kokkinos, 2018; Del Rey et al., 2016). Further, Jolliffe and Farrington (2006) revealed that a correlation occurs to low affective empathy with

physical bullying among male adolescents, while among female adolescents, a correlation is found between low affective empathy and relational bullying. In the systematic review, it was found a dualism outcomes concerning cognitive empathy and bullying (Van Noorden et al. 2014). Some researchers proved that those whose cognitive empathy is high is capable to control and influence other adolescents psychologically (Jolliffe & Farrington, 2006; Sutton & Keogh, 2000). On the other hands, some others revealed that “cognitive empathy decreases when the level of bullying behavior increases” (van Noorden et al., 2014).

Low level of empathy is correlated with cyber bullying (Shannen et al., 2021; Del Rey et al., 2016; Baldry et al., 2015; Van Noorden et al., 2014). Cyber perpetrators have low empathy. Considering their behavior is harmless, unlike the traditional ones, cyber perpetrators do not see the need to help victims and have not as much guilt to their victims (Raskauskas & Stoltz, 2007). Cyber perpetrators have lower affective empathy scores compared to the ones who do not participate in cyber bullying (Antoniadou & Kokkinos, 2018; Renati et al., 2012); nevertheless, other researchers revealed that those who are involved in cyberbullying do not have lower affective empathy scores compared to those who are not a cyber perpetrator (Kokkinos et al., 2014; Almeida et al., 2012). Additionally, other researchers combined low cognitive and affective empathy scores as predictors of cyber bullying behavior (Casas et al., 2013).

In the matter of gender differences, males seem to have lower empathy and are more involved in bullying than females (Shannen et al., 2021; Kokkinos & Kipritsi, 2017; Christov-Moorea et al., 2014). Numerous studies which observed the elements of empathy demonstrated higher scores in female’s cognitive and affective empathy compared to male’s, and the score of female’s cognitive empathy is lower than the score of affective empathy (Antoniadou & Kokkinos, 2018; Bojana et al., 2016; Christov-Moore et al., 2014). High affective empathy helps females to avoid bullying behavior (Jolliffe & Farrington, 2011). A study conducted by Endresen and Olweus (2001) demonstrated a negative correlation between affective empathy and bullying behavior for both male and female. This means that male and female are vulnerable to bullying behavior when they have lower levels of affective empathy. Caravita et al. (2009) also concluded that high levels of affective empathy reduce bullying behavior only in adolescent males.

Further, Kaukiainen et al. (1999) stated that a significant negative correlation is found between empathy and each form of bullying, but the degree of that relationship can vary depending on the stage of individual development. According to the theory of the development of aggression (Björkqvist et al., 2000) at first children engage in physical aggression and then turn into verbal aggression when their social abilities develop. The development of empathy is related to the development of aggression in one's life. Van Langen et al. (2014) reported that age can predict cognitive and affective empathy, and adolescent perpetrators have lower levels of cognitive and affective empathy. While the correlation between empathy (cognitive and affective empathy) and bullying behavior is significantly influenced by age, and the effect is more significant for young perpetrators (up to the age of 18) compared to adults (over 18 years). Antoniadou and Kokkinos

(2018) reported that the negative correlation between empathy and bullying in high school students is weaker, compared to junior high school students, due to the development of high school students' empathy that is greater than that of middle school students.

In spite of the fact that several studies reported that low empathy is correlated with bullying, a good measure of empirical study is required to discover a more complex correlation between those variables. The correlation between bullying (traditional bullying and cyberbullying), empathy (cognitive and affective empathy), and age has to be investigated. Bullying conducted by male and female needs to be examined individually, since the prior research has shown that that male and female have various antisocial behavior mechanisms (Farrington & Painter, 2004). Putting male and female into one type of bullying will lead to unclear result of the effect of empathy on bullying, the previous studies repeatedly prove that female has far greater empathy than male (Kokkinos & Kipritsi, 2017; Christov-Moorea et al., 2014).

Hypothesis

The research aims to examine the complex and dynamic correlation between bullying (traditional bullying and cyber bullying), empathy (cognitive and affective empathy), and age among adolescent students. Specifically, this research aims to study whether cognitive and affective empathy can be predictors for bullying behavior. Four hypotheses tested in this research are:

H1: There is no difference between males and females in terms of involvement in traditional bullying and cyber bullying.

H2: There is no difference between males and females in terms of the levels of cognitive empathy and affective empathy.

H3: There is no difference between perpetrators and those who do not engage in bullying in terms of cognitive empathy and affective empathy.

H4: Cognitive empathy, affective empathy, and age can not predict bullying behavior.

METHOD

Participants

Proportionally stratified samples are used to determine the sample, with the number of samples of each stratum being proportional to the number of stratum populations. Male participants numbered 538 ($n = 538$, 44%) and females 685 ($n = 685$, 56%), coming from three private high schools in Surabaya, Indonesia. They were recruited during the 2019 – 2020 school year. The age of the participants was between 15 to 17 (Mean = 16.06, S.D. = 0.87). Although the socio-economic conditions of students are not measured directly, the students involved in this research came from diverse socio-economic backgrounds (lowest, middle, and upper).

Procedure

Firstly, the researcher contacted three high schools in Surabaya, Indonesia before presenting the research objectives to the principals of these schools. The aims of the research were also informed to the students. They were given verbal and written instructions about research procedures and were informed about the confidentiality of the research. Then, they were given the consent form in their classroom. After receiving self-report questionnaires of empathy and bullying, the students filled out them for around one hour.

Measurement instruments

To realize the research objectives, three measurement instruments were used to assess bullying (traditional bullying and cyberbullying) and empathy (cognitive empathy and affective empathy), namely:

Empathy. Empathy was measured with 28 items from the Interpersonal Reactivity Index (IRI). The IRI measures two elements of empathy: cognitive empathy (perspective taking and fantasy) and affective empathy (empathetic concern and personal distress). Each sub-scale in this instrument consists of 7 items. In the test, each item was rated on a 5-point Likert scale from 0 (never) to 4 (always) (Davis, 1994). IRI has been used with early adolescent and adult participants and shows good reliability and validity (Hawk et al., 2013). The Cronbach's alpha was 0.69.

Traditional Bullying. Bullying behavior was measured using a modified 36 items (18 items for perpetrators and 18 items for victims) from the Adolescent Peer Relations Instrument (APRI). This instrument measures physical, verbal, and relational bullying. This research only used 18 items for perpetrators. Each item was rated on a 6-point Likert scale ranging from 1 (never) to 6 (every day). A score that is closer to 1 means participants have a low bullying behavior, while a score closer to 6 means a high bullying behavior (Parada, 2000). The Cronbach's alpha was 0.92.

Cyber Bullying. In this research, cyber bullying was measured by Cyber bullying and Online Aggression Survey. The instrument consists of 14 items and this research only used items 10-14 to measure cyber bullying perpetrators. Each item was rated on a 5-point Likert scale ranging from 1 (never) to 5 (every day) (Hinduja & Patchin, 2009). Participants must choose only one answer from the five answer choices. In this research, only a scale to measure cyber bullying behavior of the perpetrators was used. The Cronbach's alpha was 0.96 in this research.

Data analyses

The research variables were represented by using descriptive statistics in this research. The correlation between bullying (traditional bullying and cyber bullying), empathy (cognitive and affective empathy), and age was investigated by Pearson Product-moment correlation. The factors that influenced bullying (traditional bullying and cyber bullying) was examined by Multiple Regression Analysis.

FINDINGS

The mean values and standard deviations for all samples for each variable are showed in Table 1. In general, male students tend to involve in bullying (traditional bullying and cyber bullying) than female students. In term of empathy, females' empathy (cognitive and affective empathy) is higher than males' empathy. This research also found that females' affective empathy is higher than their cognitive empathy.

Table 1
Descriptive statistics of variables

	Gender	N	Mean	Standard Deviation
Traditional Bullying	Male	538	27.34	9.29
	Female	685	22.43	5.09
Cyber-bullying	Male	538	5.82	2.17
	Female	685	5.41	1.03
Cognitive Empathy	Male	538	48.26	5.93
	Female	685	49.51	5.95
Affective Empathy	Male	538	49.82	4.97
	Female	685	51.53	4.94
Age	Male	538	16.08	0.88
	Female	685	16.05	0.86

Pearson correlation was performed to investigate the correlation between bullying (traditional bullying and cyber bullying) and empathy (cognitive and affective empathy). The results of this research showed that affective empathy has a significant negative correlation with traditional bullying, but cognitive empathy does not have a correlation with both traditional bullying and cyber bullying. Significant positive relationships were found between traditional bullying and cyber bullying, cognitive and affective empathy, age and traditional bullying (Table 2).

Table 2
Correlations between traditional bullying, cyber bullying, cognitive empathy, affective empathy, and age

	Traditional Bullying	Cyber bullying	Cognitive Empathy	Affective Empathy
Cyber bullying	.459**	-		
Cognitive Empathy	.011	.054	-	
Affective Empathy	-.060*	.013	.391**	-
Age	.078**	-.032	-.019	.038

** $p < .01$, * $p < .05$.

A correlation between the predictor variables (cognitive empathy, affective empathy, and age) and bullying behavior (traditional bullying and cyberbullying) was investigated by multiple regression analysis. The first model is the relationship between predictor variables and traditional bullying and is quite significant, $R^2 = .012$, $F(4, 84) = 3.04$, $p = .002$. Affective empathy ($\beta = -.081$, $p < .05$) and age ($\beta = .082$, $p < .05$) are significant predictors, while cognitive empathy is not a significant predictor (Table 3).

Table 3
Multiple regressions of the correlation between predictor variables and traditional bullying

	B	SE	β	t	p
Cognitive Empathy	.056	.040	.044	1.423	.155
Affective Empathy	-.123	.047	-.081	-2.605	.009
Age	.721	.250	.082	2.882	.004

Note: R-squared: 0.012, Adjusted R-squared: 0.009

The second model is the relationship between predictor variables and cyberbullying, which is not significant, $R^2 = .004$, $F(1,617) = 3.04$, $p = .184$. Cognitive empathy, affective empathy, and age are not significant predictors of cyber bullying (Table 4).

Tabel 4
Multiple regressions of the correlation between predictor variables and cyber bullying

	B	SE	β	t	p
Cognitive Empathy	.016	.009	.057	1.818	.069
Affective Empathy	-.002	.010	-.007	-.239	.811
Age	-.059	.054	-.031	-1.083	.279

Note: R-squared: 0.004, Adjusted R-squared: 0.002

DISCUSSION

The results suggest that male students tend to be more often involved in traditional bullying than female students (H1). This finding is in tune with the results of previous studies (Kokkinos & Kipritsi, 2017; Mitsopoulou & Giovazolias, 2015; Buelga et al. 2015; Topcu & Erdur-Baker, 2012). In terms of cyber bullying, the results of this research also show that male students receive higher scores compared to their female counterparts (H1). This finding tallies with the results of previous studies, which stated that male students tend to involve in cyber-bullying than females (Shannen et al., 2021; Wong et al., 2017; Zsila et al., 2018; Patchin & Hinduja, 2013).

In the matter of empathy (H2), the results of this research support previous studies which reported that male students have lower empathy than female students (Shannen et al., 2021; Kokkinos & Kipritsi, 2017). This research demonstrated higher scores in female's cognitive and affective empathy compared to male's, and the scores of female affective empathy are higher than her cognitive empathy scores (Antoniadou & Kokkinos, 2018; Bojana et al., 2016; Christov-Moore et al., 2014). Being better in affective empathy than male, female is more capable in feeling and experiencing others' emotional states rather than just understanding them.

Several previous studies found that traditional bullying is caused by low cognitive and affective empathy (Topcu & Erdur-Baker, 2012; Del Rey et al., 2016; Antoniadou & Kokkinos, 2018) and cyber-bullying (Shannen et al., 2021; Chan & Wong, 2015). Although cognitive empathy and affective empathy are significantly related, only affective empathy is found to be significantly negatively correlated to traditional bullying, and low affective empathy is correlated with higher levels of bullying (H3). Other researchers also found that only low affective empathy is correlated with

traditional bullying behavior (Schultze-Krumbholz et al. 2020; Zych et al., 2019; Antoniadou & Kokkinos, 2018; Kokkinos & Kipritsi, 2017; Del Rey et al., 2016) and that low affective empathy makes the perpetrator unable to feel the victim's suffering, whereas high affective empathy prevent people from engaging in bullying. According to Blair (2005), cognitive empathy is seen as a precondition for the development of affective empathy. Therefore, students who have low cognitive empathy have difficulty in recognizing and understanding the emotions and suffering of other students. In addition, low affective empathy makes the perpetrators unable to feel the victim's negative emotional reaction and makes them continue their bullying behavior (Sutton & Koegh, 2000).

In the matter of the influence of age, the results of the research indicate that age influences traditional bullying behavior. Age also correlates positively with traditional bullying, meaning that the higher the age in the teens, the more they are involved in traditional bullying behavior. This finding differs from the results of previous studies, which found that younger perpetrators are more often involved in bullying behavior because of their lower levels of cognitive empathy and affective empathy, compared to older actors (Antoniadou & Kokkinos, 2018; Van Langen et al., 2014).

In line with a research conducted by van Langen et al. (2014), this study revealed that low affective empathy predicts bullying behavior (H4). Interestingly, the data of this study does not find a correlation between low cognitive empathy and bullying behavior. Although cognitive empathy and affective empathy are highly correlated, data shows that only affective empathy can reduce bullying behavior.

Finally, the results of this research emphasize the role of affective and cognitive empathy in student involvement in bullying, while in previous studies, there was no conclusion regarding the role of affective and cognitive empathy in bullying involvement (Woolley, 2012). Empathy training, through role playing can encourage perpetrators to perceive and understand what victims feel, develop the empathy of perpetrators and reduce their bullying behavior. Because "focusing on the cognitive dimension only helps the perpetrators to understand the victim's feelings and to design more effective bullying methods" (Van Noorden et al., 2016), counseling for perpetrators should focus on efforts to improve their affective empathy. If perpetrators have high affective empathy, they will be able to share and experience the feelings of victims of bullying and cease their bullying behavior.

Limitations and contributions

This research has many limitations. First, the results of this research are based on self-assessment; therefore, they depend on whether students answer honestly. Validating results through other people's assessments (friends, other students or teachers) will increase the validity of the data. Second, students who participated in this research filled out the tests in classrooms. There is a possibility that the presence of their classmates influenced their answers. To reduce this effect, the researcher and teachers should monitor the process to ensure privacy and confidentiality. Third, data were gathered from three high schools. Therefore, findings of this research can not be generalized.

Ideally, to attain more adequate results and conclusion on the correlation between bullying (traditional bullying and cyber bullying) and empathy (cognitive and affective empathy), conducting research at more schools are needed. Forth, participants in this research came from different socio-economic backgrounds and their socio-economic conditions were not measured directly. Therefore, the biased selection of the participants who has different socio-economic backgrounds should be taken into account in this research.

In future research, the researcher should control moderator variables (for example, demographic, social, and individual variables) since they can impact the correlation between empathy and bullying. Exploring through longitudinal study of the causal correlation between bullying (traditional bullying and cyber bullying), empathy (cognitive and affective empathy), and age would be interesting, too.

CONCLUSION

This research reported that male students tend to bully than female students. Males also have lower levels of cognitive empathy and affective empathy than females. The negative correlation between empathy and bullying is found only between affective empathy and traditional bullying. It is also found that affective empathy and age predict traditional bullying behavior. This research does not find a negative relationship of cognitive empathy with bullying behavior. In this research affective empathy has more important roles than cognitive empathy in the prediction of bullying. Therefore, considering affective empathy when designing bullying intervention programs in schools is important.

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