Abstract

Numerous interventions in the school environment focus on supporting empathy to prevent aggressive behaviour. But when planning interventions inside classrooms one needs to consider the context of each specific classroom, e.g., relationships between students and teachers. Based on the Developmental System Theory and Bronfenbrenner's Ecological System Model, this study examines the mediating effect of the positive and negative student-teacher relationships on the relationship between empathy (cognitive and emotional components) and aggression. We use a randomised sample of 539 students from two countries (Slovenia: N = 271, M = 12.91 years, 56.3% female; Croatia: N = 268, M = 13.60 years, 47.4% female). We measure empathy with the Interpersonal Reactivity Index, aggression with the AG-UD Aggression Scale and student-teacher-relationships with the Perceived Quality of Student-Teacher Relations measures. The findings show that empathy plays an important role in aggression, but interestingly, the component is different in the two countries. In Slovenia, there is a significant negative direct path from the cognitive component of empathy, *Perspective taking*, to aggression, while in Croatia, there is a similar path, but starting from the emotional component of empathy, *Empathic concern*. In both countries, *Negative student-teacher relationships* mediated the relationship between mentioned components of empathy and aggression, thus showing the importance of classroom context, e.g., the relationships with teachers, when addressing empathy and aggression of students in the school context. The practical implication based on our findings is the prevention of negative student-teacher relationships and the promotion of empathy among students (as well as teachers).

Keywords: aggression, empathy, student-teacher-relationships, Slovenia, Croatia

Mediating Effect of Student-Teacher Relationships for the Relationship between Empathy and Aggression: Insights from Two Countries

The relationship between empathy and aggression is both intuitive (e.g., being empathic and being aggressive are perceived as opposites) and empirically supported (e.g., Jolliffe & Farrington, 2004). In school settings, empirical support has led to numerous interventions focusing on supporting empathy in order to prevent aggressive behaviour. But when planning interventions inside classrooms one needs to consider the context of each specific classroom, e.g., specific characteristics of classroom climate, such as disciplinary rules, the relationships between individuals, students, students and teachers, etc., in that classroom. Even though classroom climate significantly affects the processes in school and is related to both empathy and aggression, its specific characteristics such as students-teacher-relationships have not yet been investigated as a possible mediator between empathy (and its components) and aggression.

The embeddedness of individuals in their context is explained by Developmental System Theory (Lerner, 1998) and by Bronfenbrenner's Ecological System Model (1979). These theoretical frameworks emphasize the importance of multilevel interactions, such as the student-teacher relationship, on the functioning of individuals. Even further, Bronfenbrenner and Morris (1998) argue that the engine of development is not a single action but the interaction between individual, e.g., student, and its contexts, e.g. student-teacher-relationship, during extended periods of time, e.g. schooling. Student-teacher relationships are perceived as a significant proximal process, influencing the development of students (Lerner, 1998). Positive student-teacher relationships are, together with being an important systemic context, also closely related to the process of social and emotional learning that leads to less aggression (Durlak, 2015). One of the social and emotional competencies that plays a crucial role in maintaining positive relationships with others (Boele et al., 2019), classroom climate (Ruiz et al., 2009; Zorza et al., 2015) as well as in aggression

prevention, is empathy (Kozina et al., 2020; Tampke et al., 2020). Empathy enables us to perceive similarities between ourselves and others (Davis et al., 1996) and allows us to understand others and feel connected to them (Eisenberg et al., 1996). It consists of two dimensions: the emotional and the cognitive. Emotional empathy is commonly interpreted as a response in which the perceived, imagined, or inferred emotional state of others produces a similar emotion in the observer. This emotion is normally more compliant with another's position than one's own (Hoffman, 2008). The other aspect of empathy is cognitive empathy, and it refers to the ability to understand other persons' emotions or perspectives via accurately identifying the state (e.g., thoughts and feelings) of others without necessarily implying that the empathiser shares this affective state him/herself' (Eisenberg et al., 2010). In the context of the classroom, relationships with teachers are especially important for the social and emotional development of students and consequently their behaviour (Rucinski et al., 2018; Wentzel, 2009). The important role of teachers, especially as regards positive relationships, has wide empirical support (for a review, see Wentzel, 2009), but there is a lack of attention given to the negative aspects of these relationships.

In contrast to the relationship between classroom climate, more specifically student-teacher relationships and empathy, there is a lot of research focusing on the connection between the perception of a positive classroom climate and less aggression in schools (e.g., Behrhorst et al., 2019). Positive classroom and school climates are associated both with lower levels of externalisation problems (e.g., aggression) and fewer internalisation problems (e.g. anxiety) (Loukas & Robinson, 2004; McEvoy & Welker, 2000; Wang et al., 2020). Furthermore, aggression, which is by definition behaviour that aims to (or actually does) cause harm to oneself or another person (Flannery et al., 2007), contributes negatively to students' perceptions of school safety and their beliefs about the social climate at the school. Also, just witnessing others being victimised affects the social experiences that a student has at school (Goldstein et al., 2008). Similarly, teachers report more conflicts and less closeness in their relationships with students, when the

students exhibit a high level of either external (e.g., aggression) or internal problem behaviours (Nurmi, 2012). Likewise, to the positive classroom climate, empathy is often associated with less aggression (e.g. Deschamps et al., 2018; Jolliffe & Farrington, 2004; Kozina et al., 2020; Van Hazebroek et al., 2017) and more prosocial behaviours (e.g. Spataro et al., 2020; Telle & Pfister, 2012; Van der Graaff et al., 2018). The negative relationship is especially prominent in adolescence (Lovett & Sheffield, 2007). Batanova and Loukas (2016) showed that programmes aimed at developing empathy are important for preventing aggression in early adolescents. On the empathy dimensional level, empathic concern was the only component linked to a reduction of aggression, and this effect persisted after the programme had been implemented and after controlling for the effects of perspective taking and effortful control. These findings are supported in other studies that examined the relationship between aggression and empathy on a component level: namely, the emotional aspect of empathy is consistently related to lower aggression, whereas findings on relations between aggression and cognitive empathy are mixed (Eisenberg et al., 2010; Estévez et al., 2019; Stavrinides et al., 2010). Nevertheless, some studies have shown that perspective taking was higher in nonaggressive individuals (Gantiva et al., 2018) and that it acted as an inhibitor of interpersonal aggression and as a facilitator of prosocial behaviour (Richardson et al., 1998) and constructive conflict resolution skills (Richardson et al., 1994), which are associated with less aggressive behaviour.

Although the role of empathy in reducing aggression has been explored, as well as relations between classroom climate, e.g., student-teacher-relationships, and each of these two variables, all the three variables (empathy, aggression, and student-teacher-relationships) have rarely been explored together. One of the rare studies, with some conceptual overlap, focused on the relations between empathy, experienced bullying, and school climate (Acosta et al., 2018). They examined how empathy mediates the effects of perceptions of school climate on bullying experiences among students in middle schools.

Surprisingly, empathy was shown to be either an insignificant or an inconsistent mediator of the effects of school climate on different forms of experienced bullying. The authors proposed a need for more research to understand the role of empathy in bullying and its relations to the school climate. Previously mentioned Batanova and Loukas (2016) study also tested moderating effects of school climate. They have included empathy components in a longitudinal study that examined the roles of early adolescents' empathy and school climate in predicting aggression, as well as whether their perceptions of school climate would moderate associations between empathy and aggression. They showed that empathic concern reduced subsequent aggression, but that school climate perception did not make a unique contribution to explaining aggression. However, the interaction effect of school climate and empathic concern on aggression was significant and showed that the perception of a positive school climate reduced aggression only for students with high levels of empathic concern. Our study fills in the research gap by focusing on a specific characteristic of classroom climate that is positive and negative student-teacher relationships.

In our study, we will use both components of empathy, emotional and cognitive, as predictors and aggression as an outcome, mediated by negative and positive student-teacher relationships. The latter will give us insight into not only whether the student-teacher relationship plays a mediating role but also which type, positive or negative, is a mediator. We expect significant direct and indirect (mediated by positive and negative student-teacher relationships) paths between both types of empathy and aggression in both data sets. The present study aims to answer two research questions using data sets from two countries, Slovenia and Croatia: (i) is the aggression of students predicted by their cognitive and emotional components of empathy and by positive and negative student-teacher relationships (direct paths); (ii) is the relationship between students' aggression and the components of empathy mediated by positive and negative student-teacher relationships (indirect paths). We hypothesise:

- the significant direct path from both empathy components to aggression, with a larger effect in the emotional component in both data sets; the hypothesis is based on the findings from Batanova and Loukas (2016) and the assumption that by anticipating negative emotional effects of aggressive behaviour on the other person, one would regulate their own aggression tendencies (Hoffman, 2008);

- the significant indirect path from empathy to aggression mediated by both types of the student-teacher relationship, positive and negative; the hypothesis is based on the important role that context (Lerner, 1998), and especially relationships, play in the development of prosocial (empathy-based) and antisocial (aggression-based) behaviour (Pianta, 1999). We have used the student-teacher relationship as an indicator of the classroom context. Teacher emotional support has been found to be linked with positive peer relationships, e.g., more prosocial behaviour and less aggression (review in Ryan & Shin, 2018).

Method

Participants

The sample included 539 8th-grade students from Slovenia and Croatia (from 12 schools per country). The Slovenian sample consisted of 271 students (M = 12.91 years, SD = 0.44, 56.3% female, 64.5% having a mother (or stepmother or guardian) with ISCED level 5 education or less and 71.2% having a father (or stepfather or second guardian) with ISCED level 5 education or less, 9.2% have been born outside Slovenia, 10% labelled themselves as being members of a discriminated group) and the Croatian sample consisted of 268 students (M = 13.60 years, SD = 0.54, 49.6% female, 62.1% having a mother (or stepmother or guardian) with ISCED level 5 education or less and 62.3% having a father (or stepfather or second

guardian) with ISCED level 5 education or less, 4.1 % have been born outside Croatia, 8.6% labelled themselves as being members of a discriminated group).

Instruments

The Interpersonal Reactivity Index (IRI; Davis, 1980) was used as a measure of empathy. The IRI has four subscales that can be differentiated into cognitive (*Perspective taking* and *Fantasy* scales) and emotional (*Empathic concern* and *Personal distress* scales) empathy. We included two scales in our study, namely *Perspective taking* (item example: I try to look at everybody's side of disagreement before I make a decision) and *Empathic concern* (item example: I often have tender, concerned feelings for people less fortunate than me)*. Empathic concern* assesses the tendency to have sympathy or consideration for other people's negative experiences, while *Perspective taking* assesses the ability to take the perspectives of other people and see things from their point of view. Students assessed how well the items (7 per scale) described them on a five-point Likert scale (1 – "Not at all like me", 4 – "Very much like me"). Cronbach's alpha scores were .62 and .61 for *Empathic concern* and .72 and .63 for *Perspective taking* for Slovenia and Croatia, respectively.

The LA (*Lestvica agresivnosti* [Aggression scale]) is an aggression scale (Kozina, 2013) that consists of 18 self-report items, to which responses were given using a 4-point Likert scale (from 1 – "Strongly disagree" to 4 – "Strongly agree"; original answering format, a 5-point Likert scale ranging from 1 – "Strongly disagree" to 5 – "Strongly agree", was changed to prevent the indecisive answer 3 – "Something in-between"). The scale measures *Aggression,* in children of primary school age to upper secondary school age, as a sum of four specific types of aggression: *Physical aggression* (6 items; item example: I like fighting a lot.), *Verbal aggression* (4 items; item example: If someone screams at me, I scream back.), *Inner aggression* (4 items; item example: A lot of people annoy me.), and *Aggression towards authority* (4 items; item example: If I don't agree with the teachers' rules, I break them). The original scale showed adequate

internal reliability and validity in Slovenian samples (Kozina, 2013). In our samples, reliability coefficients were adequate (for Slovenia and Croatia, respectively; *Aggression:* .88 and .87; *Physical aggression:* .75 in both countries; *Verbal aggression:* .73 and .68; *Inner aggression: .79* and .70; *Aggression towards authority:* .68 and .70).

Perceived quality of student-teacher relations (positive relations; Fischer et al., 2017; negative relations; OECD, 2018) was used as a measure of student-teacher relationships. In the *Positive student-teacher relationships*, students assessed the number of teachers the statements applied to in the past four months (item example: My teachers accept me the way I am). It included eight items answered on a four-point Likert scale (1 – "To none or almost none of them", 4 – "To all or almost all of them"). The *Negative student-teacher relationships* were assessed by the frequency of the negative experiences between the teachers and students in the past four months (item example: A teacher yelled at me). It included seven items on a four-point Likert scale (1 – "Never or almost never", 4 – "Every day or almost every day"). Cronbach´s αs in our study were .87 and .89 for *Positive relations* with teachers and .77 and .78 for *Negative relations* with teachers for Slovenia and Croatia, respectively.

Procedure

This study is a part of the Erasmus+ project HAND in HAND: Social and Emotional Skills for Tolerant and Non-discriminative Societies, which included a field trial in three EU countries (Croatia, Slovenia and Sweden). Out of a list of eligible schools in each participating country (the criteria of the target group were "schools with a high percentage of students at risk"), 12 schools were randomly sampled, including one 8th-grade class within each school. In September 2018, students completed a battery of questionnaires tapping into social, emotional, and intercultural competencies, classroom climate, and demographic information in the paper version. Informed consents were gathered beforehand from their parents. For

this study, we only present data from Slovenia and Croatia for the selected measures. The original scales

were translated into Slovenian and Croatian in the process of double-blind translation, which also involved

focus groups with the targeted age group.

Data Analysis

After examining descriptive statistics, correlations, and reliabilities using IBM SPSS Statistics 26, we

conducted ESEM (exploratory structural equation modelling), CFA (confirmatory factor analysis), and SEM

(structural equation modelling) using Mplus (Version 8.1; Muthén & Muthén, 1998–2017). A maximum

likelihood (ML) algorithm was used to handle missing data and assess parameters in the model. Separate

ESEM or CFA models were conducted for each construct. ESEM (EFA measurement model with rotations

used in a structural equation model; Asparouhov & Muthén, 2009) was used when non-ignorable cross-

factor loadings were found (in our case for Aggression) (Mai et al., 2018). If indicated by modification

indices and justified by the content of the items, a correlation between these items was added. ESEM and

CFA models were brought into the mediation model in the second step. Item loadings were interpreted

in accordance with Tabachnick and Fidell (2006), suggesting cut-off values of 0.32 (poor), 0.45 (fair), 0.55

(good), 0.63 (very good), or 0.71 (excellent). Model fit was assessed with chi-square (χ^2), comparative fit

indices (CFI), root mean square error of approximation (RMSEA), and standardised root mean square

residual (SRMR), following the recommendations by Hu and Bentler (1999) for a good fit: CFI > 0.95,

RMSEA < 0.06, and SRMR < 0.08. For adequate fit, the following cut-off values were applied: CFI > 0.90,

RMSEA < 0.08, and SRMR < 0.08 (Hair et al., 1998). Our data has a clustered structure (the students are

nested within schools). The commonly used procedures in Mplus to take this complex data feature into

account for calculating adjusted standard errors (multilevel models or sandwich estimator) were not

available due to the small number of schools within countries. This is also the reason why measurement

invariance could not be examined and therefore all the analyses were conducted for both countries separately.

To give some evidence about (dis)similarity of school-level results in the constructs of interest we performed Levene's test of homogeneity of variances between schools for each of the used constructs within both countries and a one-way ANOVA (or Welch test) to test the equality of means between schools within countries. In Slovenia, we cannot reject the hypothesis that the variances are equal between schools in all but one, in Croatia, this is true for two constructs. Furthermore, we cannot reject the hypothesis that the means between schools in Slovenia are the same for all but two constructs. The same is true in Croatia. The standard errors of coefficients, especially for the following constructs, should be interpreted with caution: *Empathic concern* in Slovenia, *Aggression* in Croatia and *Positive student-teacher relationships* in both countries.

Results

Firstly, descriptive statistics and correlations are summarized, followed by the results of ESEM, CFA and SEM models for both countries.

Descriptive Results

Means, standard deviations, and correlations for the questionnaire factors are presented in Table 1 to provide a brief insight into the data; however, in the ESEM, CFA and SEM analyses, questionnaire items (rather than factor scores) were used as indicators of latent variables. Following the recommendation of Curran et al. (1996) for ensuring the multivariate normality required in SEM, no variables (items) needed to be transformed due to excessive skewness or kurtosis.

Table 1

Descriptive Statistics and Correlations across Factors for Slovenia and Croatia

		M	SD	1	2	3	4
Slovenia							
1	Empathic concern	3.58	0.54				
2	Perspective taking	3.09	0.57	.48***			
3	+ S-T relationships	2.94	0.65	.22***	.31***		
4	- S-T relationships	1.54	0.52	-.13*	-.18**	-.36***	
5	Aggression	1.97	0.45	-.30***	-.46***	-.35***	.43***
Croatia							
1	Empathic concern	3.55	0.65				
2	Perspective taking	3.22	0.62	.36***			
3	+ S-T relationships	2.80	0.69	.22**	.11		
4	- S-T relationships	1.59	0.53	-.14*	-.12	-.48***	
5	Aggression	2.00	0.46	-.20**	-.32***	-.36***	.50***

Notes: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$; S-T = student-teacher (+ = positive relations; - = negative relations).

Aggression is significantly negatively associated with both types of empathy (the coefficient is larger for *Perspective taking*) in both countries. *Aggression* is significantly negatively associated with *Positive*

student-teacher relationships and significantly positively associated with *Negative student-teacher relationships* in both countries. In Slovenia, both types of empathy are significantly associated with both types of relationship, positively with *Positive student-teacher relationships* and negatively with *Negative student-teacher relationships*. On the other hand, in Croatia, only *Empathic concern* is significantly positively associated with *Positive student-teacher relationships* and significantly negatively with *Negative student-teacher relationships*, and *Perspective taking* does not correlate significantly with either type of relationship.

Exploratory Structural Equation Models (ESEMs) and Confirmatory Factor Analysis (CFA)

ESEM or CFA models for each construct were examined. The items were used as indicators in the models. Fit indices are summarized in Table 2 for Slovenia and Croatia.

Table 2

Model Fit Indices for Latent Constructs for Slovenia and Croatia

Latent constructs	χ2(df)		CFI	RMSEA [90% CFI]	SRMR
Slovenia					
Aggression	155.886 (89)	***	.960	0.053 [0.039–0.067]	0.038
Empathy	140.413 (74)	***	.902	0.058 [0.043–0.072]	0.055
S-T relationships	157.421 (87)	***	.952	0.055[0.041–0.069]	0.057
Croatia					
Aggression	153.670 (79)	***	0.939	0.061 [0.046–0.075]	0.042

Empathy	131.941 (74)	***	0.910	0.055 [0.040–0.070]	0.058
S-T relationships	230.417 (87)	***	0.903	0.080 [0.067–0.093]	0.061

Notes: *** $p \leq 0.001$

Hierarchical ESEM results showed adequate fit for aggression with four latent constructs (*Physical aggression*, *Verbal aggression*, *Inner aggression*, and *Aggression towards authority*) in Slovenia and Croatia. In Slovenia, *Physical aggression* has three items with target loadings over .64 ($ps < .001$) and three below, between .12 and .16 ($ps > .01$). *Verbal aggression, Inner aggression*, and *Aggression towards authority* all have target loadings above .33, .32, and .23 respectively, and non-target loadings mostly below target loadings. In Croatia, *Physical aggression* has one item loading over .58 ($p > .05$), two items with target loadings over .12 ($ps > .05$), and two below, .08 and 0.05 ($p > .05$). One item was left out due to negative residual variance. *Verbal aggression* has all four items with target loadings over .41 ($ps < .05$). Similarly, *Inner aggression* has all four items with target loadings over .41 ($ps < .001$). *Aggression towards authority* has three items with target loadings over .70 ($ps < .001$) and one over .25 ($p < .001$).

CFA for *Empathy* confirmed the two-factor solution: *Perspective taking* and *Empathic concern* in both countries. In Slovenia, most of the target loadings for *Empathic concern* were above .19 ($ps <.05$), with the exception of item 2 (.04; $p = .49$). For *Perspective taking* all target loadings were above .19 and significant ($ps < .05$). In Croatia, most of the target loadings for *Empathic concern* were above .17 ($ps <.05$), with the exception of item 2 (.06; $p = .44$). For *Perspective taking* four target loadings were above .46 and significant ($ps < .001$) and two below, .10 and .11 ($ps > .05$). Based on modification indices, we added correlations between negatively worded items on *Empathic concern* (four items in both data sets; two the same (describing non-sensitivity), two only in Slovenia (describing non-sensitivity), and two only in Croatia (both describing sensitivity)).

CFA results for the *Student-teacher relationship* showed an adequate fit for the two-factor model. In Slovenia, both *Positive relationship* and *Negative relationship* have all target loadings above .54 and .52 (*p*s < .001), respectively. The exception was item 5 (.17) for *Negative relationships*; however, all were still significant (*p*s < .05). In Croatia, both *Positive relationship* and *Negative relationship* have all target loadings above .58 and .56 (*p*s < .001), respectively. The exception was item 7 (.11, *p* >.05) for the *Negative relationship*. Two correlations in each data set were included in the model based on the modification indices. In both countries, for *Negative student-teacher relationships*: two items in both data sets (both describe harsh and unfair treatment in front of others), two items in Slovenia (both describe unfair evaluation or grading), and two items in Croatia (both describe public shaming) were allowed to correlate.

Structural Equation Models (SEMs)

In the next step, we included the improved ESEM/CFA models in SEM. We examined the direct and indirect paths between empathy, classroom climate, and aggression.

In Slovenia, we use *Perspective taking* and *Empathic Concern* as predictors of *Aggression*, mediated by *Positive student-teacher relationships* and *Positive student-teacher relationships*. The SEM model shows an adequate fit to the data: $\chi^2(980) = 1412.605$, $p < .001$, CFI = .90, RMSEA = .041, 90% CI [.037, .046], SRMR = .07(see Figure 1). Several correlations between items were included in the model, based on modification indices and item content. Only items within the same construct were allowed to correlate and a correlation between the latent factors *Positive student-teacher relationships* and *Positive student-teacher relationships* was allowed.
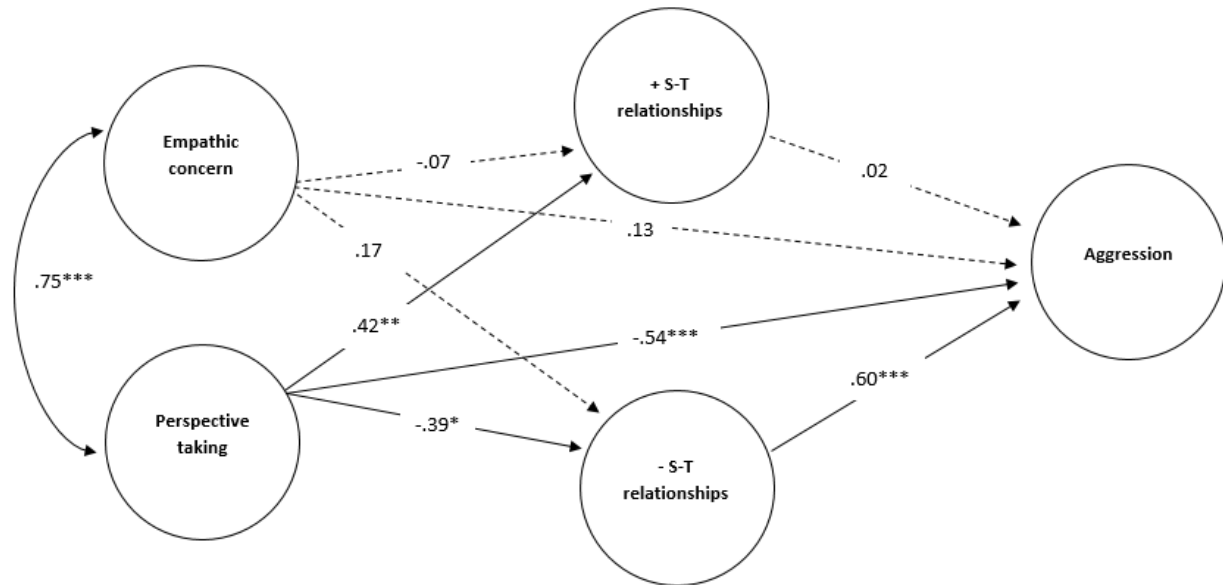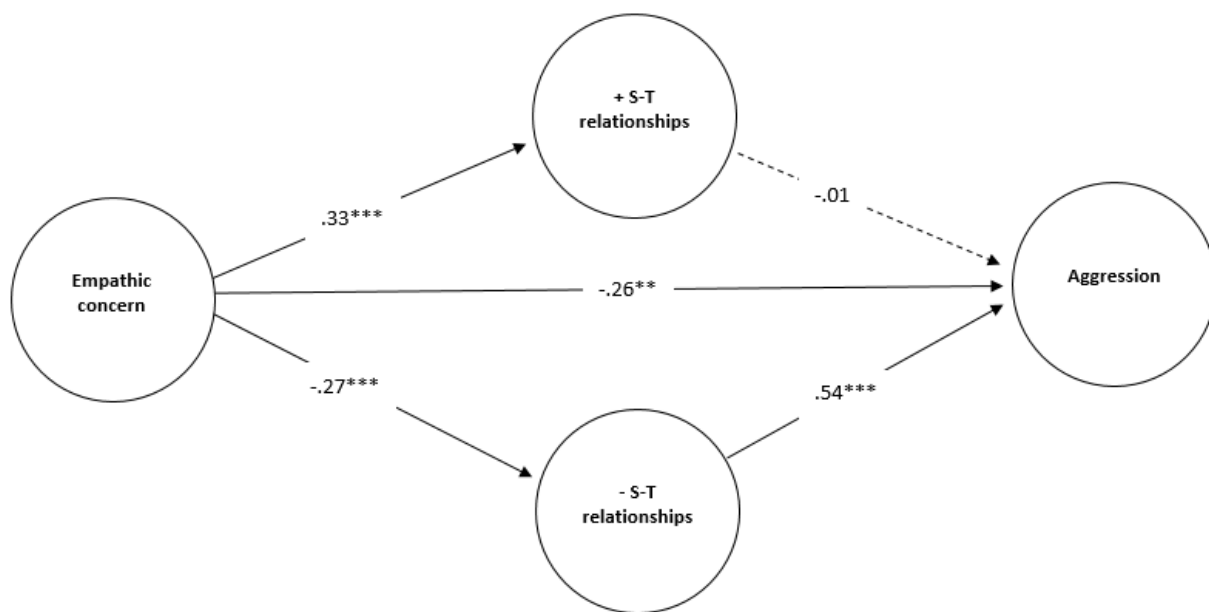
Figure 1

*Relationships between Empathy Components, Positive and Negative Student-Teacher Relationships, and Aggression in Slovenia: Structural Equation Model. The numbers present completely standardised coefficient estimates. Solid lines represent significant paths or correlations and dashed lines indicate non-significant paths or correlations. *p < .05, **p < .01, ***p < .001.*

There is a significant direct negative path between *Perspective taking* and *Aggression* (ß = -0.54; *p* = .000) and a significant indirect negative path from *Perspective taking* through *Negative student-teacher relationships* to *Aggression* (ß = -.23; *p* = .009). *Empathic concern* does not have any significant paths with other variables. The paths leading from either component of empathy, *Perspective taking* and *Empathic concern*, through *Positive student-teacher relationships* to *Aggression* (either direct or indirect) are not significant.

Since in Croatia *Perspective taking* was not significantly correlated or with *Positive student-teacher relationships* or with *Negative student-teacher relationships,* we used only *Empathic concern* (CFA: $\chi^{22}(12)$

= 25.238, *p* < .001, CFI = .95, RMSEA = .066, 90% CI [.029, .102], SRMR = .05 with two pairs of correlated

errors) as a predictor of *Aggression*, mediated by *Positive student-teacher relationships* and *Negative*

student-teacher relationships. The SEM model fits the data adequately: χ^2(649) = 1005.845, p < .001, CFI

= .90, RMSEA = .046, 90% CI [.041, .052], SRMR = .065) (see Figure 2). Only items within the same construct

were allowed to correlate and a correlation between the latent factors *Positive student-teacher*

relationships and *Negative student-teacher relationships* was allowed.

Figure 2

Relations between Empathic Concern, Positive and Negative Student-Teacher Relationships, and

Aggression in Croatia: Structural Equation Model. The numbers present completely standardised

coefficient estimates. Solid lines represent significant paths or correlations and dashed lines indicate non-

*significant paths or correlations. **p < .01, ***p < .001.*

In Croatia, there are four significant direct paths, three leading from *Empathic concern* to both types of

relationship, *Positive student-teacher relationships* (ß = .33; *p* < .001) and *Negative student-teacher*

relationships (*ß* = -.27; p < .001), and one leading from *Empathic concern* to *Aggression (ß = -.26; p = .001)* as well as one leading from *Negative student-teacher relationships* to *Aggression (ß = .54; p < .001)*. In addition, there is a significant indirect effect leading from *Empathic concern* through *Negative student-teacher relationships* to *Aggression (ß = -.14; p = .001)*. The indirect path from *Empathic concern through Positive student-teacher relationships* to *Aggression* is not significant.

Discussion

In the current study, we have investigated the mediating role of student-teacher relationships for the path between empathy and aggression using data sets from two countries, Slovenia and Croatia. We have used the student-teacher relationship as an indicator of classroom climate. In line with the Developmental System Theory (Lerner, 1998) and Bronfenbrenner's Ecological System Model (1979) we assumed the significant role of student-teacher relationships in shaping students' empathy and consequently, aggression. We have used both positive and negative student-teacher relationships as mediators between empathy and aggression in order to see their differentiated roles.

The findings from both data sets show the important role empathy plays in aggression, as well as the significant mediating role of the relationship between students and teachers in the relationship between empathy and aggression. There are also minor differences, especially on the empathy component level. More specifically, in Slovenia, the findings show a significant direct path between the cognitive component of empathy, *Perspective taking*, and *Aggression*, while the path leading from the emotional component of empathy, *Empathic concern*, to *Aggression* is not significant. This finding is in line with studies that show perspective taking as an inhibitor of interpersonal aggression and as a facilitator of prosocial behaviour (Richardson et al., 1998) and studies that stress the importance of perspective taking in constructive conflict resolution skills (Richardson et al., 1994). When one takes the perspective of another, one can better understand the motives and situation of the other person and thus aggressive

behaviour is less likely to occur (Batanova & Loukas, 2016). Adopting others' perspectives decreases stereotyping and increases positive attitudes, intergroup understanding, the desire to engage in intergroup contact, and general social affiliation (Sherman et al., 2020).

In Croatia, we only used the emotional component of empathy, *Empathic concern*, as a predictor of aggression (perspective taking was not significantly associated with either type of student-teacher relationship). There are three significant paths leading from *Empathic concern* to both types of student-teacher relationship (positive and negative) and one to *Aggression*. The findings are supported by studies that only reported significant associations between emotional components of empathy (e.g. Stavrinides et al., 2010) and aggression and not cognitive components and aggression, as was the case in the Slovenian data set. The effect of emotional empathy on aggression can be explained by empathy triggering an individual's regulation of their aggression, based on the anticipated emotional effects of their aggressive behaviour on the other person (Hoffman, 2008). The perception of the victim's pain reduces the likelihood of an aggressive response in order to avoid pain and suffering in another (Eisenberg et al., 2010). We do however see the significant role of empathy in aggression, even though the component is not the same in both data sets.

Another significant relationship shared in the data sets is the significant path from empathy to both positive and negative student-teacher relationships. As one of the characteristics of empathy is the construction of emotional bridges between people, the effects of empathy on positive relationships with others are reflected in the relationships with teachers as well. In Slovenia, both paths leading from *Perspective taking* to student-teacher relationships, one leading to *Negative student-teacher relationships*, and another leading to *Positive student-teacher relationships,* are significant. Students that report higher perspective-taking competence, also report more positive and less negative relationships with their teachers. These findings emphasise the important role that the ability to see the situation from

the point of view of others has in forming and maintaining positive relationships with others, both students and teachers (Davis et al., 1996). Similarly, in Croatia, the positive effect of *Empathic concern* is reflected not only in lower levels of aggression but also in the relationships with teachers (Ruiz et al., 2009). Students that report higher *Empathic concern* report both more positive and less negative relationships with their teachers.

In addition to similar direct effects between measured constructs, the indirect effects show that both data sets supported the mediating role of the relationship with teachers in the path between empathy and aggression. In Slovenia, there is a significant indirect path leading from *Perspective taking* through *Negative student-teacher relationships* to *Aggression*, while in Croatia, there is a significant indirect path leading from *Empathic concern* also through *Negative student-teacher relationships* to *Aggression*. What is important here is the fact that not only are *Perspective taking* in Slovenia and *Empathic concern* in Croatia related to lower aggression, but this becomes even more important in the context of negative relationships with teachers. We can assume that *Positive student-teacher relationships* play a buffering role here. By buffering role, we mean that when teachers´ emotional support is present, this is linked with positive peer relationships, e.g. more prosocial behaviour and less aggression (review in Ryan & Shin, 2018). The important role of *Negative student-teacher relationships* is also reflected in the direct paths between *Negative student-teacher relationships* and *Aggression* in both data sets. Our findings support the importance of negative relationships with teachers as a risk factor in aggressive behaviour. Teachers have been found to interact with students in ways that, intentionally or not, contribute to the classroom social dynamics, and consequently to children's peer relations (Farmer et al., 2011). They are not only important for fostering cognitive development and the process of learning but also in the development of students' emotional well-being and positive sense of self, as well as motivation for social and academic outcomes (Wentzel, 2009).

As mentioned in the introduction, the important role of teachers, especially regarding positive relationships, has wide empirical support (for a review, see Wentzel, 2009), but there is a lack of attention given to the negative aspects of these relationships. These are equally important, or even more important, as the positive. For instance, research shows that students who have a negative or emotionally abusive relationship with their teacher are likely to miss out on important learning opportunities, which may place these students at risk of increased adjustment difficulties and behavioural problems in both the short term and in the future years of schooling (Brendgen et al., 2007). There are only a few studies that have investigated the impact of negative relationships with teachers on students' social and emotional outcomes, e.g. depression and anxiety (Murray & Greenberg, 2000; Schwab & Rossmann, 2019) and bullying (Hanish et al., 2004). Lucas-Molina et al. (2015) even point out the unwanted effects of teacher practices that aim to reduce student aggression, e.g. a disciplinary strategy that can increase the frequency and severity of aggression by students and their peers. The topic is especially relevant since empirical evidence shows that teacher targeted bullying and harassment is evident in classrooms in different countries (e.g. Australia, New Zealand, Luxembourg, Canada, Slovakia, South Africa, Taiwan etc.) (Billett et al., 2019).

Conclusions, Future Directions, and Limitations

In our first hypothesis, we have assumed significant direct paths between both empathy components and aggression. In both data sets, one component was a significant predictor of student-teacher relationships and aggression; in Slovenia, it was *Perspective taking* and in Croatia *Empathic concern*. Our data do confirm that empathy plays an important role in aggression, but interestingly, the type or component depends on the specific context. The two neighbouring countries in question are similar in their history (have been a part of the same country, Yugoslavia until 1991 with the same centralised school system) and macroeconomic conditions, therefore, we cannot say that the findings necessarily reflect country-

wise contextual differences. Nevertheless, the findings can be used as a starting point in investigating the contextual differences in the relationship between empathy components and aggression – possibly also including aggression components, and in this way getting an even more detailed picture of the relationship as well as including more data sets possibly from different contexts (e.g., countries, school types, age groups). In our second hypothesis, we have assumed significant indirect paths between empathy components through student-teacher relationships, both positive and negative, to aggression. We have assumed that both types of relationships will play a significant mediating role between empathy and aggression. The findings show that in both data sets, *Negative student-teacher relationships* play a mediating role between empathy and aggression. The practical implication based on our findings is the prevention of negative student-teacher relationships by fostering students' (as well as teachers') empathy. This is not only important for aggression prevention but also, as pointed out by Martin and Collie (2018), for greater school engagement among students. In addition, research shows that the quality of student-teacher relations has an important role in students' connection to the school, subjective well-being, and behavioural problems (Gehlbach et al., 2012; McNeely et al., 2002; Schwab & Rossmann, 2019; Suldo et al., 2009). Some of the practical implications would be for teachers and students to share empathy evoking activities, e.g. sharing heart-warming experiences with each other, regularly spending time together outside the classroom in fun activities.

There are several limitations that hinder our conclusions and generalisations, e.g., the study is cross-sectional (and therefore reciprocal causality between variables over time cannot be analysed), based on self-report and with some methodological limitations (the clustered nature of the data and the small sample of schools within both countries limit the measurement invariance analyses; low reliability of empathy components). Due to the small number of schools within countries, we could not use the common procedures for standard error adjustments. Nevertheless, our findings stress the importance of planning intervention multidimensional, at the same time fostering empathy on the students' level as well

as empathy on teacher levels and by doing so fostering positive student-teacher-relationships and preventing negative student-teacher-relationships. The study does bring a unique contribution, that is a detailed analysis of the role of one specific context important in preventing aggressive behaviour in schools, the relationship between students and teachers. Together with student-teacher relationships, other important factors also play important roles in aggression prevention, such as peer relationships, behavioural standards and consistent discipline practices, and an inclusive philosophy that can be included in future studies. The findings can be used as a starting point in investigating multiple contexts that influence the relationship between empathy components and aggression. In future studies, testing possible intervention designs (with pre- and post-measurement and control groups) across different contexts is advised.

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