

RUNNING HEAD: Children's Peer Victimization, Empathy, and Emotional Symptoms

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**Abstract** This study investigated the concurrent and longitudinal relations among children's peer victimization, empathy, and emotional symptoms. The sample consisted of 175 children (85 girls, mean age = 6.1 years) recruited from kindergartens in Switzerland and followed for one year (Time 2). Parents and teachers reported on the children's emotional symptoms, empathy, and victimization. Children reported their empathy and victimization experiences. Peer victimization was a predictor of emotional symptoms at Time 1; this association was stronger for children with average or high levels of empathy. Increases in peer victimization predicted increases in boys' emotional symptoms, and increases in victimization were related to decreases in empathy. The results emphasize the role of negative peer relations and children's social-emotional information processing for the development of emotional symptoms.

**Keywords** Peer Victimization Empathy Emotional Symptoms Childhood

## **Introduction**

Researchers have acknowledged the harmful effects of victimization on children's psychological adjustment [1]. Nevertheless, we still lack knowledge on the longitudinal relations between peer problems and emotional disorders in children [2]. To develop efficient psychotherapeutic approaches, we need to know more about moderating factors of victimization and emotional adjustment problems. From a developmental perspective, empathy is an important factor in these relations, because its role on the quality of social behavior, associated peer relations, and (mal)adjustment has been strongly emphasized in developmental theory [3-5]. Although a wealth of studies has shown that empathy is negatively associated with aggressive behavior [6], surprisingly few studies have investigated its association with peer victimization and emotional maladjustment. Conceptually, peer relationships are an important learning experience for the development of social perspective taking and empathy [7]. Vice versa, empathy may play a major role for victimization experiences, because an empathic orientation towards others facilitates the quality of interpersonal relationships and may thus hinder victimization and promote emotional adjustment [8]. On the other hand, empathy might put children at risk for depression, because the great concern for others' problems may promote feelings of hopelessness and anxieties [9].

Further, longitudinal analyses of victimization and later emotional adjustment problems have been rarely reported. Against this background, the present study investigated within a multi-informant approach the concurrent and longitudinal relationships between kindergarten children's victimization, empathy, and emotional symptoms. From the perspective of clinical-developmental psychology, this question is highly significant, because socio-emotional

development (i.e., empathy) and related negative peer experiences (i.e., victimization) may crucially impact children's concurrent and subsequent emotional adjustment problems.

### Peer Victimization and Empathy

In this study, empathy was defined as an emotional response to the emotional state of another that is congruent with the other's emotional state [10]. Researchers have emphasized that empathy includes a social-cognitive component (i.e., understanding others' emotions) and an affective component [11-13]. Constructive peer relations form the basis for empathy, because affective ties with peers create a care orientation in interpersonal relationships [14-16]. Victimized children are less accepted by peers and have fewer friends [17-19]. This may offer them fewer opportunities to understand and feel the emotional situation of another child involved in conflicts over moral norms, and they may therefore display less empathy with the other. As victimized children likewise have problems understanding the mind of other children [20], and frequently interpret others as hostile and untrustworthy [21], they may also lack the social-cognitive preconditions for displaying empathy towards needy peers. This research provides evidence that negative or biased peer perceptions and related problems in empathy are a risk factor for peer victimization.

In contrast, it is also reasonable to argue that victimized children display more empathy because they are particularly sensitive to the emotional consequences of rule transgressions. The latter argument is indirectly supported by Garner and Lemerise [22], who showed that victimization was positively associated with global knowledge of the emotional situation of provoking peers and the attribution of sorrow to them. Similarly, Menesini et al. [23] found that victims attributed indifference and pride to the victimizer less frequently than bullies did. This knowledge of emotions is an important social-cognitive prerequisite of empathy. The

present study investigated the relation between victimization and empathy in children and can therefore provide the first empirical evidence for one of the theoretical assumptions or the other.

#### The Relations of Peer Victimization and Empathy to Emotional Symptoms

There is impressive empirical evidence that victimized children are at risk for concurrent emotional problems [24, 1]. For example, victimization is associated with depressive symptoms, social anxiety, lower self-worth, and increased risk of suicide [25-28]. Emotional symptoms may also follow from negative peer relationships (i.e., victimization). For example, a study by Kochenderfer-Ladd and Wardrop [29] revealed that children changing from nonvictim to victim status displayed increased loneliness. Other studies also indicate that victimized children are prone to emotional problems, and that peer victimization may contribute to later emotional symptoms [30-34].

But how does empathy influence the relationships between victimization and emotional symptoms? So far, our knowledge about these relationships is rather opaque. By definition, empathy has social-cognitive components and is thus related to other social perceptions in the social information-processing domain, such as adequately perceiving and evaluating the social behavior of others [35, 36]. Because social perceptions are closely linked to empathy [37], we can hypothesize to a degree from previous research how victimized children think about their social environment in relation to their symptoms, which in turn allows us to develop hypotheses about the effect of empathy on the relationship between victimization and emotional problems. For example, Kochenderfer-Ladd and Skinner [38] found that children's coping strategies moderated the concurrent relationship between peer victimization and emotional symptoms. Interestingly, problem-solving strategies that were beneficial for

nonvictimized children exacerbated emotional symptoms for victimized children. The authors interpreted this finding with reference to the negative social reputation that victimized children bring to bear on their peer interactions. This negative reputation also prevents them from being very influential with their peers. This finding is important, because coping strategies, such as constructive social problem-solving skills, have been shown to be associated with children's prosociality and empathy [39]. Perhaps being over-involved empathically in the problems of others, as expressed by high levels of manifest empathy, is a path to emotional symptoms if a child is bullied by others [9, 40]. As illustrated by the finding of Kochenderfer-Ladd and Skinner [38], victimized children who express strong empathy may be particularly at risk for emotional symptoms, because they may experience that their expression of empathy does not necessarily lead to better peer relationships. This is the case because, unlike nonvictimized children, victimized children are relatively unpopular with their peers and have little influence on them, even if they express empathy [41].

Regarding longitudinal relationships, we can also draw upon related research on social cognition to form hypotheses about how empathy might moderate the relationship between victimization and emotional symptoms: For example, a study by Troop-Gordon and Ladd [42] showed that children's peer beliefs developed in middle childhood acted as mechanisms through which interpersonal problems in early elementary-school years later cause emotional symptoms. Interestingly, changes in peer beliefs (i.e., perceptions of peers as being generally unfriendly and aggressive) were also associated with the emergence of emotional difficulties. Research has revealed that perceptions of peers as aggressive and hostile are related to low empathy with others [11, 43]. A decrease in empathy with other children might serve as a buffer for victimized children and protect them from developing emotional symptoms later,

because it may help prevent them from becoming emotionally over-involved with other children. This decrease in empathy may also help them to be more aware of their own needs and desires and enable them to distance themselves from someone else's pain. This argument has been indirectly supported by a study of Grills and Ollendick [44], who found that victimized boys with high self-worth displayed fewer anxiety symptoms than victimized boys with low self-worth. From a clinical-developmental perspective, this finding is reasonable, as children who are too empathically involved with others, but at the same time perceive their social relationships as problematic (and have a low sense of self-worth as a result) are assumed to be particularly vulnerable to depression and emotional symptoms [45-47].

#### The Present Study

In summary, previous research provides evidence for the significant role of children's social perceptions in the relationship between victimization and emotional maladjustment. To the best of our knowledge, no study has hitherto investigated how children's victimization, empathy, and emotional symptoms are interrelated. The purpose of this study was, therefore, to investigate the relationship between empathy and victimization and the degree to which children's victimization and empathy contribute to the development of emotional symptoms, both concurrently and longitudinally over the course of 1 year. We chose a longitudinal design to investigate these relations, because we are interested in how individual changes in peer victimization and empathy contribute to subsequent emotional symptoms. It is hypothesized that victimization puts children at risk for concurrent and continuing emotional problems, and that empathy moderates the relationship between these problems and victimization. The moderator analysis was indirectly based on research suggesting that peer-related cognitions and emotions are important in the prediction of victimization [21] and

(mal)adaptation [48]. On the one hand, we assumed that victimized children with high empathy are particularly prone to concurrent emotional symptoms; on the other hand, we expected that decreases in empathy would decrease emotional symptoms in victimized children. Based on previous research, we also assumed that decreases in victimization would negatively predict level of emotional symptoms [29]. We controlled for aggressive behavior, because aggression has been shown to relate positively to victimization and emotional symptoms [32, 49, 50]. Sex and parental educational level were also controlled for, as previous research has consistently shown sex and SES effects on the variables of interest here [51, 52]. Based on previous research, we assumed that the relationship between victimization and emotional symptoms might differ for boys and girls [52].

## **Method**

### **Participants**

The data were taken from the first and second waves of a longitudinal study of children's social competence development, currently being conducted in Switzerland [53]. A random sample of kindergarten children and their primary caregivers was drawn, based on the resident population of the Canton of Zurich in Switzerland. Written requests for participation were sent to the primary caregivers, and written informed consent was obtained. A total of 175 child and primary caregiver interviews were carried out. One hundred and sixty-three of the primary caregivers (92%) filled in a supplementary questionnaire. Of the primary caregivers, 98% gave their written consent to for us to contact the kindergarten teachers, and 133 of the kindergarten teachers filled in a questionnaire (76%). The participating children at Time 1 (T1) were on average 6.1 years of age ( $SD = 0.19$ ); 85 were girls (49%). Ninety percent of the primary caregivers were mothers; 85% of the mothers were Swiss and 15% were of other

nationalities. Ten percent of the parents had no education or low-level secondary education, 37% had vocational training, and 4% had attended a vocational college; 6% had a baccalaureate degree, 26% higher vocation diploma, and 17% had a university degree. Parental education scores, which served as an index of socioeconomic status (SES), were then computed (Range: 1-6;  $M = 3.53$ ,  $SD = 1.28$ ). Higher scores indicate higher SES (1 = no education or low-level secondary education – 6 = university degree).

The participation rate of the primary caregivers in the second assessment was 91%, and 158 child interviews and 160 primary-caregiver interviews were carried out at Time 2 (T2). One child refused to participate after the interview was conducted with the mother, and one mother refused to let her child participation, because the child was extraordinarily shy. One hundred forty-seven of the primary caregivers also filled in questionnaires (92%). One hundred and fifty-four parents gave their consent to our contacting the teachers at T2 (96%), and 140 teachers filled in a questionnaire (91%). Eighty-seven percent of participants had complete data for final data analyses.

An analysis was performed to control for attrition. Participants with complete child, mother, and kindergarten teacher data at T1 were compared with participants lacking kindergarten teacher data ( $N = 42$ ) on two demographic variables (highest primary-caregiver education, family income) as well as on the four study variables at T1 (emotional symptoms, victimization, empathy, and aggression). No significant differences were found. Next, the participants at T1 were compared with the participants who dropped out at T2 ( $N = 15$ ) on the variables described above. In the latter sample, the children displayed at T1 significantly more emotional symptoms,  $t(167) = -1.94$ ,  $p = .05$ , and victimization experiences,  $t(170) = -2.07$ ,  $p < .05$ .

## Procedure

The first assessment (T1) was conducted during the spring of 2006. Three child sessions were conducted: one computer-assisted personal interview (CAPI) at the child's home, and two sessions in a separate and quiet room in the kindergarten. Each session lasted about 60 minutes. The mothers were individually interviewed at home with a 60-minute CAPI interview. While the child was interviewed at home, the mother filled in a supplementary questionnaire on the child's social development. The kindergarten teachers also filled in a questionnaire on the child's social development, which they returned by mail. The second assessment (T2) was completed one year later (spring 2007), with the same procedure as applied at T1. All the measures were taken at both assessments. The mothers and teachers provided ratings for all the main study variables. The children reported their victimization and aggression during the school interviews, whereas the empathy data were collected during the CAPI interview at the child's home. The interviewers were undergraduate psychology students who had been intensively trained in the relevant interview techniques by the research team.

## Measures

### Emotional Symptoms

At T1 and T2, children's emotional symptoms were assessed with mother and teacher reports from the emotional symptoms subscale of the Strengths and Difficulties Questionnaire [54]. The subscale consists of five items rated on a 6-point-scale (e.g., is often unhappy, depressed or tearful). Cronbach's  $\alpha$  was .56 at T1 and .66 at T2, for the mother ratings, and .73 at T1 and .64 at T2 for the teacher ratings.

### Peer Victimization

Peer victimization was assessed at T1 and T2 with self, teacher, and mother reports. Self-

reports were assessed using the German version of the Berkeley Puppet Interview [55]. This instrument was developed by Measelle, Ablow, Cowan, and Cowan [56] and combines structured and clinical interviewing techniques to elicit children's self-perceptions. The interview is carried out by two identical hand puppets that make two opposing statements on a topic, then the child gives his or her own response. The interview was videotaped and subsequently scored by two independent raters, who were blind to all other data, on a 7-point scale (1–3=strong to mild agreement with the negative statement, 4=neither positive nor negative, 5–7=mild to strong agreement with the positive statement). For the current analyses, the scores have been reversed, and higher scores indicate higher perceived peer victimization. Interrater reliability corresponded to a medium ICC of .96 (range .80–1.00). The scale for peer victimization consists of four items (e.g., “kids at school tease me”). Cronbach's  $\alpha$  was .75. Teachers and mothers completed a scale on the frequency of peer victimization [41]. The scale contains three victimization items (physical, verbal, exclusion; e.g., is physically bullied by other children, such as beaten, kicked, etc.) and was assessed on a 6-point-scale from *never* to *always*. Cronbach's  $\alpha$  was .77 for teachers and .81 for mothers. Mean scale scores were computed.

### Empathy

At T1 and T2, children's empathy was assessed by self-reports and by mother and teacher ratings. Children's self-reported empathy was assessed with five items [57]; e.g., “when I see another child who is being picked on, I feel sorry for him or her.” The children were asked whether the sentence is like him or her, and if so, how much. The answer not like him or her was scored 0, sort of like him or her was scored 1, and like him or her was scored 2. Cronbach's  $\alpha$  was .67. The mothers and teachers each rated children's empathy with the same

five items on a 6-point scale (e.g., “my child feels usually sorry for other children who are being teased”) from Zhou et al. [57]. The  $\alpha$ s were .83 and .92. For the statistical analyses, the scale was transformed to a categorical variable (low, average and high levels of empathy). The scales were standardized, and a cut-off of  $z = 0.5$  was used (low empathy:  $z < -.50$ , medium empathy:  $z \leq .50$  and  $\geq -.49$ , high empathy:  $z > .50$ ). This categorization was done because of our interest in the effects of distinct empathy groups on the variables. On the other hand, this procedure also helps to reduce interpretation difficulties of the interaction effects.

#### Control Variable: Aggression

Overt aggression was assessed at T1 and T2 by self, teacher, and mother reports. For self-reports, the Berkeley Puppet Interview was used [55]. The overt aggression scale consists of seven items ( $\alpha = .65$ ); e.g., “I pick on other kids.” The teachers rated the child's overt aggression with nine items from the Strengths and Difficulties Questionnaire and the Teacher Report Form (TRF) on a 6-point-scale ( $\alpha = .88$ ); e.g., “...picks on other kids.” The mothers rated the child's aggression with nine items from the SDQ and the CBCL4-/18 for parents ( $\alpha = .81$ ).

#### Statistical Analyses

To analyze our research questions, general linear model (GLM) analyses were computed. Emotional symptoms served as the dependent variable, with peer victimization (continuous), empathy (low, medium, high), and sex of the child serving as independent variables. To analyze for the possible moderating effects of empathy and sex, interactions with peer victimization were also entered into the analyses. In addition, overt aggression (continuous) and SES (continuous) were used as control variables. In the longitudinal analyses, we added change scores for the most important study variables, because of our interest in their impact

on emotional symptoms. Change scores were computed using a regression approach [60], with high values indicating increases in the variable over time.

## Results

We will first present descriptive statistics for all measures at T1 and T2. Next, we will report cross-sectional results (T1 and T2), and, then, longitudinal results (changes in emotional symptoms from T1 to T2).

### Descriptive Results

Table 1 displays the mean scores of the study variables at T1 and T2.

For further data analyses, the data were aggregated across informants. Combining data from multiple informants increases reliability and validity, because informants evaluate the variables from different venues (e.g., school vs. home) and perspectives (self vs. others) [58, 59]. To combine the child, mother, and teacher reports, the average scores of each informant were first *z*-standardized. Data were then averaged across informants. This aggregation was justified, as in most cases the ratings were significantly correlated across informants: At T1, the mother and teacher ratings of emotional symptoms were significantly related,  $r(125) = .30$ ,  $p < .01$ , whereas at T2 no significant relationship was found. Regarding peer victimization, the mother ratings were significantly associated with the child and teacher ratings at T1 ( $r_s > .20$ ,  $p_s < .05$ ). At T2, all victimization ratings were significantly interrelated ( $r_s > .20$ ,  $p_s < .05$ ). At T1, mother ratings of empathy were significantly associated with child and teacher ratings ( $r_s > .20$ ). At T2, child and teacher ratings were slightly related,  $r(137) = .16$ ,  $p = .07$ . At T1, mother- and teacher-rated aggression were significantly interrelated,  $r(125) = .22$ ,  $p < .05$ . At T2, all ratings were significantly interrelated ( $r_s > .20$ ,  $p_s < .05$ ).<sup>1</sup>

Table 2 shows the correlations between the aggregated study variables. All the variables were moderately stable ( $r_s > .3$ ). Peer victimization and emotional symptoms were positively correlated (T1, T2, and T1 to T2). Empathy was negatively associated with peer victimization (T2 and T1 to T2), but not with emotional symptoms. Aggressive behavior was positively correlated with emotional symptoms and peer victimization, and negatively with empathy (T1, T2, and T1 to T2). In addition, children from higher SES families had fewer emotional symptoms at T1, less peer victimization at T1, and greater empathy at T1 and T2.

#### Cross-sectional Results (T1 and T2)

The GLM analysis of emotional symptoms at T1 yielded significant effects of peer victimization and a significant empathy x victimization interaction (Table 3),  $F(9, 166) = 3.85, p < .001, \eta^2 = .18$ . Peer victimization was positively associated with emotional symptoms,  $F(1, 166) = 8.39, p < .001, \eta^2 = .05$ . The associations were stronger for children with medium or high levels of empathy (low:  $B = .160, ns$ ; medium:  $B = .342, p = .05, \eta^2 = .03$ ; high:  $B = .672, p < .001, \eta^2 = .10$ ).

The GLM analysis of emotional symptoms at T2 showed significant effects of aggression and a marginally significant victimization x sex interaction (Table 3),  $F(9, 155) = 2.91, p < .01, \eta^2 = .15$ . Aggression was positively related to emotional symptoms,  $F(1, 155) = 6.59, p < .05, \eta^2 = .04$ . Peer victimization was positively associated with emotional symptoms for boys ( $B = .32, p < .05, \eta^2 = .03$ ), but not girls.

#### Longitudinal Results

For the longitudinal analyses, we entered as independent variables peer victimization, empathy, and overt aggression at T1, as well as changes in peer victimization, empathy, overt aggression, SES, and sex. Emotional symptoms at T1 were entered as a control variable.

Changes in emotional symptoms from T1 to T2 and emotional symptoms at T2 were used as the dependent variables in the two analyses. The first analysis yielded a significant effect for changes in overt aggression and a significant sex x change-in-victimization interaction (Table 4),  $F(14, 11) = 3.18, p < .001, \eta^2 = .25$ . Increases in overt aggression from T1 to T2 predicted increases in emotional symptoms,  $F(1, 151) = 8.39, B = .224, p < .01, \eta^2 = .06$ . Moreover, increases in peer victimization from T1 to T2 predicted increases in boys' emotional symptoms over time ( $B = .171, p = .05, \eta^2 = .03$ ). This association was not significant for girls ( $B = -.071, ns$ ).

## **Discussion**

Our longitudinal study of 6-year-old children shows that peer victimization impairs their emotional well-being. Empathic children may suffer even more from such negative experiences, as high empathy seems to exacerbate the impact of victimization on concurrent emotional symptoms. The study makes an important contribution to the literature on clinical-developmental theories, because the literature has paid scant attention to the impact of empathy on a child's peer relations and in the development of emotional symptoms [61]. By using a multi-informant longitudinal approach and a puppet interview to elicit children's peer victimization experiences, we also methodologically endorse much of the previous research.

Theoretically, the revised social information-processing model provides a reasonable conceptual framework for understanding the conjoint effect of empathy and negative peer experiences (i.e., victimization) on children's emotional symptoms. The model suggests that a child's social experiences and related social cognitions and emotions deeply affect adjustment [62]. Previous research has provided evidence for the moderating effect of social cognitions

on the relationships between victimization and emotional problems [63], and the role of biased social cognition in emotional symptoms [64] and victimization [65].

Children who have been victimized may also become overly concerned with other children. This overidentification with the other's needs may prevent children from identifying their own emotions and needs. Rather, it may elicit emotional problems in victimized children. Our study provides first empirical evidence for this assumption. First, concurrent emotional symptoms at T1 were positively predicted by victimization. This finding confirms research on the cross-sectional relationship between victimization and children's emotional symptoms [1]. Although not all studies have reported strong relationships between victimization and emotional problems in kindergarten children [66], our study documents that negative peer experiences are associated with emotional problems in young children. Second, we found that empathy moderated the cross-sectional relationship at T1 between victimization and emotional symptoms. Victimized children with high or moderate empathy had more emotional problems than victimized children with low empathy, whereas this effect was nonexistent in nonvictimized children. This result is consistent with the finding that in children with severe emotional symptoms, high levels of prosocial behavior predicted increases in emotional symptoms over time [40]. Children who are involved in victimization as victim *and* show high sensitivity towards a needy other may be particularly vulnerable for emotional symptoms. Contrary to what is normally the case the display of empathy may not be adaptive [67, 37], but rather lead to negative consequences for the child involved in victimization.

Further, there was a negative relationship between victimization and empathy at T2, and changes in peer victimization were negatively related to empathy at T2. These findings

suggest that negative peer experiences increasingly impede socio-emotional development. It is possible that elementary-school children with a history of victimization start to believe that others are insensitive to their needs, and this makes them less sensitive to the needs of others over time. This finding indirectly contradicts recent research showing that victimization was positively associated with global knowledge of emotional situations [22], because understanding of other's emotions is a necessary precondition of empathy. As victimized children have fewer friends, they may have fewer opportunities to understand and empathize with other children involved in situations entailing moral conflicts.

In regard to longitudinal relationships, peer victimization at T1 did not predict later emotional symptoms, but increases in peer victimization significantly predicted increases in emotional symptoms in boys. Peer victimization at T2 was also related to boys' emotional symptoms. These findings are in line with those of Snyder et al. [52], who documented that increases in boys' victimization were related to increases in teacher-reported depressive behavior [63]. Thus, victimization may exacerbate sadness and worry, which may cause a vicious cycle of victimization and emotional symptoms. This sex-specific effect of the relationship between victimization and emotional symptoms may be due to the relevant sex differences consistently found in the study variables [38]. Although our analyses showed no sex differences in emotional symptoms or victimization, victimization may become associated with adjustment problems at different times for girls and boys [52]. Children enter elementary school in Switzerland by age 7, and boys may be possibly particularly vulnerable at this time of transition and related changes in the peer group. This argument is, however, rather speculative. Some studies have also documented this effect for girls [31, 68], so further

longitudinal research on the sex-specific relationship between victimization and emotional symptoms is warranted.

Our study confirmed that peer victimization is strongly associated with aggression [32]. Research has shown that aggressive victims have impaired emotional regulation [69]. In our study, victimization and aggressive behavior were associated with emotional symptoms. Aggressive victims may be particularly vulnerable in terms of emotional maladjustment. Perren and colleagues [55] have suggested that the relationship between aggressive behavior and emotional symptoms may depend on negative peer relations. Our study gives some insight into this suggestion. At Time 1, the significant association between overt aggression and emotional symptoms disappeared when we controlled for the other variables, including peer victimization. However, the longitudinal analyses suggest that an increase in overt aggression is an overlapping risk factor for emotional symptoms. Further, the analyses at Time 2 showed that overt aggression predicted emotional symptoms, even after controlling for all other variables. In middle childhood, overt aggression is becoming less normative and less socially accepted. Therefore, increases in or the stabilization of overt aggression may be a sign of the development of overt psychopathology, including emotional symptoms.

In terms of socioeconomic background, we found a negative relationship between emotional symptoms and peer victimization at Time 2, whereas we documented a positive relationship between SES and empathy at both assessment points. This finding supports the importance of structural constraints on young children's psychopathology and on socio-emotional factors such as empathy [70].

Although this study makes an important contribution to the literature, it is not without limitations. First, we did not assess socialization influences on victimization, empathy, and emotional symptoms. Previous research has shown, for example, that maltreatment in the

family or exposure to violence and abuse exacerbates a child's emotional and peer problems [71, 72] and decreases empathy [8]. Second, our analyses indicated only low to moderate reliability in some of our test measures, particularly the mother ratings of emotional symptoms at T1. However, other studies have reported similar psychometric properties of the emotional symptom scale [73]. This might, in part, be due to the rather broad assessment of the syndrome (anxiety, depressive symptoms). Third, our sample was restricted to 6- and 7-year-olds. As peer victimization experiences can be expressed differently at different ages, they may also be related in different ways to emotional symptoms and empathy over the course of development [33].

## **Summary**

This study investigated the relationships between children's peer victimization, empathy, and emotional symptoms in a longitudinal sample of Swiss children. Using a multi-informant approach, the findings revealed that peer victimization was a predictor of emotional symptoms at Time 1; this association was stronger for children with average or high levels of empathy. Increases in peer victimization predicted increases in boys' emotional symptoms, and increases in victimization were related to decreases in empathy. In summary, this study offers the first evidence for the combined role of peer experiences and empathy in the development of emotional symptoms in kindergarten children. Emotions such as empathy, and social interaction experiences such as victimization, are important domains of social development and contribute significantly to a child's level of adjustment. The findings have therefore important implications for practical interventions. Particularly, the findings suggest the need for developmentally differentiated prevention strategies; these should consider not only social relationship problems, but also the socio-emotional development related to these

problems. Such an approach may help us develop specific intervention strategies for different subgroups of victimized kindergarten children.

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**Notes** <sup>1</sup>Data aggregation significantly improved reliabilities: Cronbach's  $\alpha$  for the emotional symptom scale was .73 at T1 and .66 at T2; for victimization,  $\alpha$  was .77 at T1 and .84 at T2; for aggression, .82 at T1 and .86 at T2, and for empathy, .78 at T1 and .83 at T2.

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**Table 1** Mean scores and standard deviations of the study variables at T1 and T2

	T1		T2	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mother-rated emotional symptoms <sup>a</sup>	2.13	0.76	2.17	0.84
Teacher-rated emotional symptoms <sup>a</sup>	2.28	1.00	2.45	0.96
Mother-rated peer victimization <sup>a</sup>	2.42	1.19	2.32	1.12
Teacher-rated peer victimization <sup>a</sup>	1.95	1.07	2.08	1.21
Child-rated peer victimization <sup>b</sup>	2.93	1.13	2.98	1.23
Mother-rated empathy <sup>a</sup>	4.90	0.79	4.88	0.85
Teacher-rated empathy <sup>a</sup>	4.54	1.09	4.42	0.98
Child-rated empathy <sup>c</sup>	0.86	0.56	1.23	0.54
Mother-rated aggression <sup>a</sup>	2.31	0.77	2.16	0.67
Teacher-rated aggression <sup>a</sup>	2.28	1.08	2.16	1.23
Child-rated aggression <sup>b</sup>	2.46	0.65	2.35	0.54

<sup>a</sup>Possible range: 1-6.<sup>b</sup>Possible range: 1-7.<sup>c</sup>Possible range: 0-2.

**Table 2** Correlations between aggregated study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Emotional symptoms at T1	--												
2 Emotional symptoms at T2	-.31***	--											
3 Emotional symptoms (Change)	.00	.95***	--										
4 Peer victimization at T1	.30***	.16*	.07	--									
5 Peer victimization at T2	.29***	.28***	.21*	.47***	--								
6 Peer Victimization (Change)	.16*	.24**	.20*	.00	.88***	--							
7 Empathy at T1	-.08	.08	.11	-.07	-.07	-.03	--						
8 Empathy at T2	-.02	-.04	-.04	-.13	-.20*	-.17*	.35***	--					
9 Empathy (Change)	.01	-.07	-.08	-.09	-.19*	-.17*	.00	.94***	--				
10 Aggression at T1	.21**	.10	.03	.33***	.39***	.26**	-.36***	-.23**	-.10	--			
11 Aggression at T2	.15†	.31***	.27**	.34***	.58***	.48***	-.20*	-.48***	-.44***	.48***	--		
12 Aggression (Change)	.03	.30***	.30***	.20*	.45***	.40***	-.03	-.42***	-.45***	.00	.88***	--	
13 SES	-.16*	-.01	.04	-.25**	-.12	-.05	.16*	.17*	.10	-.15†	-.03	.04	--

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

**Table 3** Results of the GLM analysis predicting concurrent emotional symptoms at T1 and T2

Independent variables	T1		T2	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
Peer victimization	8.39	.004	1.31	.273
Empathy	1.46	.236	0.98	.377
Empathy x victimization	3.29	.040	0.18	.835
Sex	.89	.346	1.01	.316
Sex x victimization	2.79	.097	3.78	.054
Aggression	2.01	.159	6.59	.011
SES	.18	.675	0.02	.883
<i>df</i> total	167		155	
<i>R</i> <sup>2</sup>	0.18		0.15	

*Note.* At T1 the independent variables (victimization, empathy, and aggression) were entered as predictors of emotional symptoms at T1, whereas at T2 they were used to predict emotional symptoms at T2. SES was assessed at T1 only.

**Table 4** Results of the GLM analysis predicting changes in emotional symptoms from T1 to T2

Independent variables	<i>F</i>	<i>p</i>
Emotional symptoms at T1	9.94	.002
Peer victimization at T1	0.02	.878
Peer victimization (change)	0.50	.480
Empathy at T1	1.22	.300
Empathy (change)	0.99	.322
Empathy x victimization at T1	0.82	.443
Sex	1.74	.189
Sex x victimization at T1	0.10	.749
Sex x victimization (change)	4.03	.047
Aggression at T1	0.19	.668
Aggression (change)	8.39	.004
SES	0.03	.858
<i>df</i> total	152	
<i>R</i> <sup>2</sup>	.25	