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### Through the teacher's mind

*Understanding and improving teacher-child relationships in elementary school*

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# Chapter 3

*Do teachers have different mental representations of relationships with children in cases of hyperactivity versus conduct problems?*



## CHAPTER 3

### Do teachers have different mental representations of relationships with children in cases of hyperactivity versus conduct problems?

The present study examined how different externalizing child behaviors (i.e., hyperactivity, conduct problems) were uniquely related to teachers' mental representations of relationships with individual children. Participants were 61 teacher–child dyads from Dutch regular elementary schools. Using a two–wave design, teachers first reported about the child's behavior. Four months later, they were interviewed using the Teacher Relationship Interview (TRI) to assess relationship representations. The TRI was rated by coders on nine constructs that comprised three dimensions: content (e.g., sensitive practices of teachers), affect (e.g., positive and negative feelings), and process (e.g., coherence of narratives). Regression analyses revealed that teachers had higher levels of positive affect and sensitive practices when it comes to hyperactivity, whereas teachers experienced more anger when it comes to conduct problems. The results indicate that hyperactivity and conduct problems may uniquely contribute to teachers' mental representations of relationships with children.

### Introduction

Teacher–child relationships are considered important for both teachers and children. Ample research has shown that teacher–child relationships characterized by warmth and support (closeness) may help children to develop the necessary skills for behavioral and academic success in school (Jerome, Hamre, & Pianta, 2009; Roorda, Jak, Zee, Oort, & Koomen, 2017). Alternatively, teacher–child relationships involving high levels of negativity (conflict) may hinder children's behavioral and academic development in school (McCormick, O'Connor, Cappella, & McClowry, 2013). Furthermore, teacher–child relationships that are high in conflict and low in closeness are associated with higher levels of teacher stress and anger, and lower levels of teacher competence and job satisfaction (Hagenauer, Hascher, & Volet, 2015). Therefore, it is important to investigate which factors influence teacher–child relationship quality.

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One of the most important predictors of teacher–child relationship quality is children’s externalizing behavior (e.g., Jerome et al., 2009). Children who display externalizing behaviors, such as hyperactivity or conduct problems, are likely to have relationships with teachers that are generally marked by high levels of conflict and low levels of closeness (e.g., Silver, Measelle, Armstrong, & Essex, 2005). Although children’s hyperactivity and conduct problems are often substantially associated, they relate to different behaviors and social outcomes (Hinshaw, 1987). Still, most studies on teacher–child relationship quality have used a composite measure of externalizing behaviors (cf. Nurmi, 2012). Consequently, little is known about how different externalizing behaviors are uniquely associated with teacher–child relationship quality.

In addition, most researchers have used explicit measurements such as questionnaires to examine teacher perceptions of relationship quality with children showing externalizing behaviors (Roorda et al., 2017). Recently, investigators have underscored the importance of also including implicit measurements in research (Hahn, Judd, Hirsh, & Blair, 2014; Kumar, Karabenick, & Burgoon, 2015). Such implicit measurements may provide additional insight in underlying processes, such as feelings, beliefs, and attitudes of teachers about their relationship with children showing different externalizing behaviors. These underlying processes are often referred to as a teacher’s mental representation of their relationship with a child (Bowlby, 1982). Researchers have argued that understanding such mental representations of teachers is needed to be able to design appropriate interventions that improve teacher–child relationship quality (Spilt & Koomen, 2009), which is especially important for children with high risks of poor development (e.g., children with externalizing behaviors). Therefore, the present study examined how different externalizing child behaviors (i.e., hyperactivity and conduct problems) were related to teachers’ mental representations of relationships with individual children.

#### **Teachers’ mental representations of teacher–child relationships**

The majority of research on teacher–child relationships is based on an extended attachment perspective (Pianta, Hamre, & Stuhlman, 2003), derived from parent–child attachment research (Bowlby, 1982). Attachment theory states that children form mental representations about the self and significant others, including views, feelings, and attitudes that shape the development of new relationships (Bowlby, 1982). Mental representations are considered

subconscious processes, which influence how children interpret the behaviors of others and, in turn, how children direct their own behavior (Bretherton, 1990). Similarly, caregivers are considered to develop a parallel set of mental representations. This theory has also been applied to relationships between teachers and individual children, stating that both the teacher and the child form mental representations of their mutual relationship (Pianta et al., 2003). For teachers, these mental representations consist of their view of the child, beliefs and expectations about the interactions with this child, and beliefs about the self as a teacher (Pianta et al., 2003).

To date, most research has used explicit measurements, and especially questionnaires, to capture teachers' perceptions of the relationship with an individual child. Of these measures, the Student-Teacher Relationship Scale (STRS; Pianta, 2001) is the most common. The STRS has demonstrated sufficient internal consistency, metric invariance across gender and age, and adequate construct and criterion validity from preschool to upper elementary school (e.g., Koomen, Verschueren, van Schooten, Jak, & Pianta, 2012; Milatz, Glüer, Harwardt-Heinecke, Kappler, & Ahnert, 2014). The STRS is aimed at identifying relational strengths and difficulties in terms of conflict (i.e., negative interactions), closeness (i.e., warmth), and dependency (i.e., overly reliant child behavior). Thereby, it provides a global overview of several explicit aspects of a teacher's perception of teacher-child relationship quality (Koomen et al., 2012). However, questionnaires mainly capture the feelings and cognitions of which a teacher is already aware. Questionnaires may therefore be less suited to capture teachers' mental representations, as mental representations are believed to operate outside conscious awareness.

In parent-child research, interviews and qualitative coding of these interviews have been used to uncover mental representations of parents, thereby giving insight into parent-child relationship quality (e.g., Parent Attachment Interview; Bretherton, Biringen, Ridgeway, Maslin, & Sherman, 1989). Interviews are considered implicit when specific questions and related answers do not directly correspond with different psychological constructs (Furman & Wehner, 1994). For instance, rather than directly asking a caregiver about their sensitive parenting behavior, the interviewer asks for a series of experiences, for example in which the child is misbehaving and in which the child is upset and seeks help from the caregiver. Next, the caregiver's answers are coded by an independent coder using a qualitative description of the construct to assess, for instance, the degree of sensitive practices. Thus, interviews may uncover aspects that are not perceived directly by the caregiver, but rather by the coder of the entire interview, which makes them

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implicit measurement techniques (Furman & Wehner, 1994).

Three main dimensions have generally been suggested to effectively reflect mental representational models (Button, Pianta, & Marvin, 2001). The first dimension is the content of mental representations, which refers to what someone is telling during the interview about their beliefs and practices in a relationship. The second dimension refers to the affective dimension, representing both positive and negative feelings someone might experience in their relationship. The third dimension is the processing of information, which refers to 'how' information is transferred to the interviewer (Button et al., 2011). For instance, someone can react defensively or can be reluctant to explain how he or she is feeling.

In teacher–child relationship research, the Teacher Relationship Interview (TRI) can be used to assess teachers' mental representations of their relationship with an individual child (Koomen, Verschueren, & Thijs, 2006; Spilt & Koomen, 2009; Stuhlman & Pianta, 2002). This interview offers information about teachers' feelings, beliefs, and expectations regarding their relationship with a specific child. The TRI is based on methods used in parent–child research (Button et al., 2001; Pianta, 1999) and can also be framed in terms of the dimensions content, affect, and process (Spilt & Koomen, 2009). Independent coders rate the interview on nine separate constructs, which together represent the three dimensions. The content dimension includes processes such as a sensitive and proactive management style, providing a secure base, perspective taking in the internal states of the child, and intentionality (Spilt & Koomen, 2009). The affective dimension includes the degree to which teachers narrate their relationship with the child in terms of positivity, anger, and helplessness. The last dimension, processing of information, gives insight in the extent to which teachers are willing to discuss negative emotions and the degree of coherence of their narratives (Spilt & Koomen, 2009; see Table 1 for a description of the TRI constructs).

To validate the TRI as an appropriate measurement of teachers' mental representations of relationships, two studies have evaluated the concordance of the TRI with other measurements of teacher–child relationship quality. First, Stuhlman and Pianta (2002) related a first version of the TRI to observed teacher–child interactions. Second, Spilt and Koomen (2009) investigated how a slightly adapted version of the TRI was related to the different subscales of the STRS. Both studies found moderate agreement between the TRI constructs and observed interactions or subscales or STRS subscales, indicating that the TRI assesses related aspects of teacher–child relationship quality. More specifically, Spilt and Koomen (2009) found that teachers' expressions

of anger during the interview were positively associated with the conflict subscale of the STRS. In addition, Stuhlman and Pianta (2002) found that expressed negative emotion during the interview was most strongly related to observed negative behavior toward the child. Overall, these findings show that the TRI is useful to gain more insight in teachers' mental representations of relationships with children, especially with regard to affective processes.

To date, there is one study that investigated teachers' mental representations of their relationships with typically developing children versus children showing (non-differentiated) externalizing behavior (Spilt & Koomen, 2009). Using the TRI, Spilt and Koomen (2009) found that teachers expressed more anger and helplessness concerning children who displayed externalizing behavior, which is in accordance with questionnaire research that found associations between behavior problems of children and relational negativity (e.g., Birch & Ladd, 1997; Jerome et al., 2009). Spilt and Koomen (2009) did not find differences in teachers' expressions of positive affect between relationships with children with and without externalizing behavior. In addition, no differences were found with regard to sensitive practices of teachers in their narratives concerning the two groups of children. In sum, Spilt and Koomen (2009) found that negative affect of teachers seems characteristic for relationships with children with higher levels of externalizing behaviors.

## **Different externalizing behaviors of children**

Externalizing, or undercontrolled behavior includes different behavioral symptoms such as hyperactivity, impulsivity, inattention, oppositional behaviors, aggression, and disregarding others' rights (Hinshaw, 1992). Based on these characteristics, generally two larger categories have previously been identified: Hyperactivity/inattention and conduct problems (Hinshaw, 1987, 1992). Hyperactivity/inattention refers to the inability to focus attention for a sufficient period of time and to impulsive behavior (Barkley, DuPaul, & McMurray, 1990). In contrast, conduct problems are characterized by behaviors such as picking on others, starting fights, telling lies, rule breaking, violent behavior, or disregarding the teacher (Hughes & Cavell, 1999). Hyperactivity and conduct problems can appear together, resulting in comorbid problems of children. The developmental precursor model suggest that symptoms of hyperactivity can lead to the development of conduct problems, for instance due to stress in the family or in school

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(Johnston & Jassy, 2007). Despite their overlap (e.g., Offord, Alder, & Boyle, 1986), these categories are considered to tap into different aspects of externalizing behavior (e.g., Martel, Gremillion, Roberts, von Eye, & Nigg, 2010). Furthermore, both aspects of externalizing behavior relate highly to children's emotional symptoms (e.g., correlations between .27 and .58; Huey & Weisz, 1997). Therefore, when analyzing differences between hyperactivity and conduct problems, it is important to take children's emotional symptoms into account.

Different types of externalizing behavior have been linked to different school outcomes. For instance, children who display high levels of hyperactive behavior often experience multiple difficulties in school (DuPaul & Stoner, 2003). Generally, they are likely to have more problems staying on task, to talk a lot with their peers when it is not allowed, and to experience difficulties staying in their chair (DuPaul & Stoner, 2003). These off-task behaviors may be very disruptive for teachers. Therefore, it is not surprising that children with hyperactive behavior are at risk for developing social problems (Andrade & Tannock, 2014; DuPaul & Weyandt, 2006), including poor teacher-child relationships.

Children with conduct problems may show a somewhat different pattern of school adjustment. Research has indicated that conduct problems in school are mainly associated with peer rejection or peer coercion (Snyder, Prichard, Schrepferman, Patrick, & Schoolmiller, 2004). It has also been found that interactions between teachers and children with conduct problems are often characterized by anger and punishment, in particular when children openly resist authority of the teacher (Brophy & McCaslin, 1992). Consequently, children's conduct problems may be a risk factor for poor teacher-child relationships.

The behavioral patterns of hyperactivity or conduct problems in children may influence teachers' mental representations of relationship quality differently. However, previous studies only investigated associations of hyperactivity and conduct problems with school adjustment in isolation of each other. They did not include these different types of externalizing behavior into one study to identify whether they had similar or different associations with teacher-child relationship quality.

## **Teachers' appraisals of hyperactivity and conduct problems**

Teachers' mental representations about relationships and their ways of judging different child behaviors may increase teachers' unpleasant experiences and emotions (Chang & Davis, 2009). Teachers may hold different types of judgments or appraisals about children's actions in the classroom. According to Chang and Davis (2009), two specific types of appraisals of specific classroom incidents, including teachers' judgments of control and their perceived ability to cope with problems, may explain why teachers may consider their relationship to be different for children with different types of behavior. Concerning the first type of appraisal (i.e., teachers' judgments of control), these authors assume that teachers are likely to feel frustration or anger in relation to an individual child when they feel this child could have controlled its behavior (i.e., the control potential of the child is high). This frustration or anger, in turn, might determine teachers' subsequent actions toward the child. For instance, teachers may respond less sensitive to a child at a specific moment when they are feeling frustrated. However, when teachers perceive the child as being unable to control his or her behavior (i.e., there is a low control potential of the child), teachers' responses may be more differentiated, ranging from annoyance to sympathy, or responses may in general be more positive (Chang & Davis, 2009). For instance, teachers may respond more sympathetically to a child at a specific moment when they feel the child's disruptive behavior is not intentional.

The second type of appraisal is based on teachers' coping potential, which refers to their ability to eliminate a perceived threat (Lazarus, 2001). For example, teachers with a high coping potential in the face of challenging child behavior probably have lower and more controllable emotional responses. Consequently, more adequate reactions of teachers to challenging behavior may occur. However, teachers with a low coping potential may have an increased emotional intensity, such as anxiety, frustration, or anger, which may lead to less professional responses of teachers in reaction to challenging behavior (Chang & Davis, 2009). Teachers' appraisals may thus influence their feelings about children, which in turn may influence their perceptions of relationships with children showing specific types of externalizing behavior.

Based on these ideas, it can be expected that teachers feel or act differently toward children who display hyperactivity versus conduct problems. For instance, teachers may have feelings of sympathy toward children with hyperactivity but not toward children with conduct problems. One possible reason for these different feelings is that hyperactivity is often

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perceived as an indication of Attention Deficit Hyperactivity Disorder (ADHD), which has several genetic components (Brassett–Harknett & Butler, 2007). Indeed, the large majority of teachers reported ADHD and hyperactivity to be caused by biological factors instead of environmental factors (Glass & Wegar, 2000). This implies that hyperactive behaviors do not happen on purpose but lie outside the control of the child (Stinnett, Crawford, Gillespie, Cruce, & Langford, 2001). In other words, children often do not intend to display hyperactive behavior (i.e., their control potential is low). This low control potential of hyperactive behavior may result in teachers feeling sympathy toward the child.

With regard to perceived conduct problems, the cause of such behavior is not always evident, and teachers can think of this child as annoying, disrespectful, or lacking parental guidance (Chang & Davis, 2009). Teachers may feel that these children could have controlled their behavior if they wanted to, or that they had specific intentions with their behavior, which could lead to more negative emotional experiences of teachers. As a result, teachers may feel frustrated or angry, which may negatively influence teachers' sensitive practices.

Furthermore, based on Patterson's theorizing (1982, 2002), coercive family dynamics may emerge in the case of conduct problems. Specifically, Patterson argued that caregivers may reinforce children's difficult behavior, which in turn elicits negativity in interactions. This coercive pattern of interactions may also be visible in the school context. For instance, a teacher may reinforce certain child behaviors, such as resistance or disobedience, and this may in turn evoke anger and hostility from the teacher. Based on this coercion theory, we expected that teachers feel more anger and frustration in the case of conduct problems and that they act with less sensitive practices in reaction to resistance or disobedience.

Previous studies have repeatedly shown that externalizing child behavior in general is associated with poor teacher–child relationship quality, both cross-sectionally (e.g., Nurmi, 2012) and longitudinally (e.g., Hamre & Pianta, 2001). Furthermore, externalizing behavior can both be a predictor and outcome of poor teacher–child relationship quality (e.g., Silver et al., 2005). To our knowledge, however, there are only two studies that examined associations between a specific type of externalizing behavior and teacher–child relationship quality. A study from Thijs, Koomen, and van der Leij (2008) revealed that kindergarten teachers reported higher levels of conflict, lower levels of closeness, and more dependency in their relationships with children with higher levels of hyperactivity, compared to their relationships

with typically developing children. Furthermore, these authors noted that teachers experienced increased hindrance and disruptiveness in their teaching with hyperactive children. In a study focusing on conduct problems, Hughes, Cavell, and Willson (2001) indicated that conduct problems of elementary school children were associated with high levels of peer rated teacher–child conflict. Although these two studies focused on a specific type of externalizing behavior, they investigated these behaviors in isolation from one another. Because of the substantial overlap between hyperactivity and conduct problems (Offord et al., 1986), it is necessary to control for the other type of externalizing behavior to assess possible differential and unique effects of each type of externalizing behavior.

## **Present study**

The present study examined the extent to which children's hyperactive behavior and conduct problems were related to teachers' mental representations of relationships. Of note, we did not compare groups of children with either hyperactivity or conduct problems, but focused on examining unique associations of children's hyperactive behavior and conduct problems with teacher's mental representations in a non-clinical sample of upper elementary graders. Because of the substantial overlap between hyperactive behavior and conduct problems, we controlled for the other type of externalizing behavior. Additionally, we decided to control for the associations of children's emotional symptoms with teachers' mental representations of relationships as well, because these emotional symptoms are usually related to both hyperactivity and conduct problems. Furthermore, as teacher–child relationships are often differently associated with gender (e.g., Birch & Ladd, 1997) and ethnicity (e.g., Saft & Pianta, 2001); we also included these background characteristics as covariates. Based on the theories of Chang and Davis (2009) and Patterson (1982; 2002), and the findings of Spilt and Koomen (2009), we expected that teachers would express higher levels of positive feelings and show higher levels of sensitive practices in the case of hyperactive behavior, if controlling for comorbid conduct problems. In contrast, we expected that teachers would express higher levels of negative feelings and show lower levels of sensitive practices in the case of conduct problems, controlling for comorbid hyperactive behavior.

## Method

The present study was part of a larger research project that examined teachers' dealings with diversity in the classroom (Zee, De Jong, & Koomen, 2016). For this project, a total of 350 schools across the Netherlands were recruited by e-mail or telephone. When school principals granted permission to conduct research within their school, information letters and informed consent forms were sent to all upper elementary teachers within the schools. The final sample consisted of 61 teachers in 24 regular elementary schools in both urban and rural areas across the Netherlands. Of this sample of teachers, 16 were male (26.2%) and 45 female (73.8%). On average, they had 16.9 years of experience in teaching ( $SD = 12.0$ , ranging from 1.5 to 44 years). The teachers had a mean age of 41.3 years ( $SD = 12.6$ , ranging from 23 to 63 years).

The non-clinical student sample consisted of 61 children, of which 36 were boys (59%) and 25 were girls (41%). They had a mean age of 10.2 years ( $SD = 1.2$ , ranging from 8 to 13 years old). At the time of data collection, 5 children were in grade 3 (3.3%), 23 in grade 4 (37.7%), 13 in grade 5 (21.3%), and 20 in grade 6 (32.8%), respectively. Most children had mothers with a Dutch background (85.2%), whereas 14.8% had mothers with an ethnic minority background.

## Procedure

Ethical approval was granted from the Ethics Review Board of the Faculty of Social and Behavioral Sciences of the University of Amsterdam (project no. 2013-CDE-3188). Teachers distributed informed consent forms to parents of all children in their classroom. In the larger project on dealing with diversity (Zee et al., 2016), data were collected in two waves. A sample of eight children was randomly selected from each teacher's classroom, in which, on average, 25 students were enrolled. During the first wave, when teachers had known the children for at least 4 months (January–March), teachers reported on the behavioral adjustment of the selected children using the Strengths and Difficulties Questionnaire (SDQ), and on their own background characteristics. Additionally, children were asked to fill out questionnaires about their background characteristics during a planned school visit. During the second wave, at the end of the schoolyear (May–July), researchers visited the participating schools to administer the Teacher Relationship Interview (TRI). The duration of the interview ranged from 30 to 45 minutes. For

this interview, we selected one child for each teacher based on the child's level of externalizing behaviors. For half of the teachers, a child with a mean score higher than 2.5 on the hyperactivity subscale and/or conduct problems subscale was selected (i.e., the subscales ranged from 1 to 5, a cut-off criteria of 2.5 or higher was used to construct a normally distributed sample of problematic behavior). When multiple children had a high score on the subscales, the child with the highest scores on the two subscales was selected. For the other half of the teachers, a child was selected with a mean score lower than 2.5 on hyperactivity and conduct problems. This procedure was followed to collect a sample of children with a normally distributed level of and sufficient variation in externalizing behavior.

## **Instruments**

Teachers reported about children's behavioral adjustment and several months later teachers were interviewed about their relationship with a child. Teachers reported about children's behavior through the Dutch version of the Strength and Difficulties Questionnaire (SDQ; Goodman & Scott, 1999; Van Widenfelt, Goedhart, Treffers, & Goodman, 2003). The SDQ measures a variety of problematic child behaviors in the classroom. Five subscales can be derived from a total of 25 items: Prosocial Behavior, Emotional Symptoms, Conduct Problems, Hyperactivity/Inattention, and Peer Problems. In the present study, we only used the subscales Emotional Symptoms, measuring internalizing behavior of children (e.g., "Many worries or often seems worried"), Conduct Problems (e.g., "Often has temper tantrums or hot tempers"), and Hyperactivity (e.g., "Restless, overactive, cannot sit still for long"). All subscales consisted of 5 items which were answered on a 5-point Likert scale, ranging from 1 (definitely does not apply) to 5 (definitely applies). Previous research has indicated good psychometric properties of the Dutch version of the SDQ (Van Widenfelt et al., 2003). Cronbach's alphas of the SDQ subscales in the present study were .77 for Emotional Symptoms, .85 for Conduct Problems, and .89 for Hyperactivity, respectively.

A Dutch version of the Teacher Relationship Interview (TRI; Koomen & Lont, 2004; Pianta, 2003; Spilt & Koomen, 2009) was used to assess teachers' mental representations of their relationship with an individual child. The TRI is a semi-structured interview, in the Dutch version consisting of 12 questions and related follow-up questions that provide insight into teachers' experiences, beliefs, and emotions about their relationship with an individual child. First, teachers were asked to choose three words that described their

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relationships with the child. For each of the three words, teachers were asked to further describe that word through explaining an experience they had with the child. The 11 remaining questions were about teachers' negative and positive experiences with a child and one question was about the relationship of the teacher with the family of the child. All questions were aimed at discussing recently occurred experiences of teachers' interactions with the selected child. For almost all questions, follow-up questions concerned teachers' feelings about these specific experiences and teachers' perceptions of the feelings or emotions of the child. An example of one of the questions is: "Tell me about a time when [name of the child] was upset and came to you". Follow-up questions are: "Could you describe exactly what you did at that moment?", "Why did you choose this particular approach?", "How did you feel in this situation?", and "How do you think [name of the child] felt at that moment?"

The interview was recorded on audio and independent raters coded the audio-tapes. Ratings were provided by at least two trained, independent coders on nine scales representing different relationship constructs. With respect to the content dimension, four constructs were rated (see Table 1): Sensitivity of Discipline, Secure Base, Perspective Taking, and Intentionality. Regarding the dimension of affect, three constructs were rated: Helplessness, Positive Affect and Anger. For the processing dimension, two constructs were rated: Neutralizing of Negative Affect, and Coherence.

With the exception of Coherence, which was rated on a 5-point scale, each construct was coded on a 7-point rating scale. The scores 1 and 2 represented the lower end on the scale (i.e., there is no or little evidence for the construct), the scores 3 to 5 were in the mid-range of the scale (i.e., the teachers provides mixed evidence of the construct), and scores 6 and 7 were on the high end of the scale (i.e., there is sufficient evidence for the construct, the teacher provides clear and detailed examples). For each score of each of the constructs, the coding manual provided a detailed example of what the teachers should have narrated to receive a particular score (Koomen & Lont, 2004; Pianta, 1999; Pianta, 2003).

Coders were trained extensively until they reached sufficient interrater agreement. Coders attended three meetings in which they discussed the codes of interviews they had practiced at home. First, they practiced with the TRI themselves to get familiar with the interview questions and the coding manual. At home, they practiced with a total of nine interviews and received feedback about each coding from the trainer. None of the coders were familiar with the child or the teacher and they did not administer the

interviews themselves. Coders were also unaware of whether children had high or low levels of externalizing behavior.

Intraclass correlations (ICCs), based on the average measures of the coders, were calculated for each of the constructs to assess the degree of consistency between coders. Cicchetti et al. (2006) concluded that an ICC between .40 and .59 is fair, between .60 and .74 good, and above .75 excellent. Excellent consistency was found for all constructs (ICCs ranging from .78 to .92), except for Coherence (ICC of .60), which had still good consistency (Cicchetti et al., 2006; see Table 1). Average scores of two independent coders were used for all interviews. When there were large differences ( $\geq 3$  scale points) between the two coders for one of the constructs, a third coder independently rated the interview again to extract the most appropriate score for that specific construct. Of all scores, 2.7% were coded again. The score of the third coder was then used for that construct.

## **Data analysis**

We conducted multiple regression analyses<sup>1</sup> in SPSS Version 22 to predict all constructs of the TRI based on children's Hyperactivity or Conduct Problems. For each TRI construct, a multiple regression was performed. For each model, the following covariates were added first: Gender (0 = boy, 1 = girl), Ethnicity (0 = ethnic majority, 1 = ethnic minority) and Emotional Symptoms. After that, we added Conduct Problems and Hyperactivity<sup>2</sup>. Gender was not included in the final models because it was not a significant predictor of any of the TRI constructs ( $p > 0.05$ ).

For all included variables, there was 0 to 4.9% missing data. Little's MCAR test showed that the data were missing completely at random,  $\chi^2(12) = 9.82$ ,  $p = .632$ . To uphold sufficient power for the analyses, we chose to impute missing data using the Expectation Maximization algorithm. For all models, residuals, leverage values, and Cook's Distance were examined. No multivariate outliers were found (Tabachnick & Fidell, 2007). No significant violations of assumptions for linearity, homoscedasticity, and normality were found. All variables had a non-significant skewness and kurtosis, indicating

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1 As intra-class correlation at the school level was very low (ICC = 0.03), it was not necessary to conduct multilevel analyses.

2 Interaction terms of Conduct Problems x Hyperactivity were also added in the regression models, however, these caused multicollinearity problems. Therefore, we decided to exclude the interaction terms from the models.

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Table 1. Different constructs of the Teacher Relationship Interview

Construct	ICC	Description
<i>Content</i>		
Sensitivity of Discipline	.79	Sensitive and proactive management style.
Secure Base	.81	Understanding the connection between emotional support and the child's social, emotional, and cognitive development.
Perspective Taking	.85	Awareness of children's internal states.
Intentionality	.82	Promoting children's growth in social, emotional, or academic domains.
<i>Affect</i>		
Positive Affect	.92	Positive feelings such as joy, pride, happiness, love about interacting with the child.
Anger	.90	Feelings of anger, disapproval or hostility about interacting with the child.
<i>Process</i>		
Neutralizing of Negative Affect	.78	Avoiding discussing negative emotions during the interview
Coherence	.60	Presenting experiences in a reasonable and understandable way.

normality (skewness < 2.0, kurtosis < 1.9). There was no indication of multicollinearity in the regression models (Slinker & Glantz, 1985), because variance–inflation factors (VIFs) ranged from 1.00 to 2.47 in all regression models.

### Results

Before presenting the regression models for each construct of the TRI, the descriptive statistics are discussed. Table 2 presents the means, standard deviations, and zero–order correlations of all study variables. Constructs from the content dimension of the Teacher Relationship Interview (e.g., Sensitivity of Discipline, Secure Base, Perspective Taking, and Intentionality) had large intercorrelations, were positively related to Positive Affect, and negatively related with Helplessness. Secure Base and Intentionality were also negatively associated with Anger. Furthermore, Perspective Taking was negatively associated with Neutralizing of Negative Affect, and both Perspective Taking and Secure Base were positively related to Coherence. Correlations between constructs of the affect dimension were also in the expected directions. Constructs of the affect dimension (e.g., Helplessness, Anger, and Positive Affect) were not significantly correlated with constructs of the processing dimension (e.g., Neutralizing of Negative Affect and Coherence). With regard to the processing dimension, Neutralizing of Negative Affect had a negative association with Coherence of teachers' narratives.

Furthermore, a positive association was found between Neutralizing of Negative Affect and Ethnicity, indicating that teachers tended to neutralize negative affect more in relationships with ethnic minority children. Also, Ethnicity was negatively related with Intentionality and Positive Affect of teachers. Emotional Symptoms of children were negatively related to Positive Affect and positively related to Anger. In addition, Emotional Symptoms were associated with more Hyperactivity and Conduct Problems of children. Children's Conduct Problems were also positively related with teachers' Anger and with more Hyperactivity. Last, Hyperactivity was positively related to all constructs of the content dimension and to Anger of teachers. No significant associations were found between children's Gender and all other variables.

Using regression analyses, it was investigated how children's hyperactivity and conduct problems were related to teachers' mental representations. Separate regression analyses were performed for the constructs of the content dimension of these mental representations, including Sensitivity of Discipline, Secure Base, Perspective Taking, and Intentionality (Table 3). A first regression analysis was performed to identify how Hyperactivity and Conduct Problems were related to teachers' Sensitivity of Discipline. The model was not significant and explained (only) 15.3% of the variance,  $F(4,56) = 2.52$ . Only Hyperactivity was positively associated with Sensitivity of Discipline ( $\beta(SE) = .47(0.12)$ ,  $p = .009$ ).

The model predicting Secure Base was also non-significant,  $F(4,56) = 1.75$ . In this model, Hyperactivity was positively related to Secure Base of teachers ( $\beta(SE) = .38(.14)$ ,  $p = .039$ ), indicating teachers provided more security when it comes to Hyperactivity. The model with all variables included had an explained variance of 11.1%.

The model of Perspective Taking was significant and it explained 18.9% of the variance for Perspective taking,  $F(4,56) = 3.27$ . Hyperactivity was positively related to teachers' ability to take perspective of the feelings of the child ( $\beta(SE) = .52(.14)$ ,  $p = .003$ ).

Finally, the model of Intentionality was significant, and it explained 17.9% of the variance for Intentionality,  $F(4,56) = 3.06$  (Table 3). It appeared that teachers were less focused on seeking opportunities to promote children's growth when it comes to ethnic minority students ( $\beta(SE) = -.29(.36)$ ,  $p = .028$ ). Furthermore, Hyperactivity was positively related to Intentionality of teachers ( $\beta(SE) = .46(.14)$ ,  $p = .009$ ).

Separate regression analyses were performed for the constructs of the affect dimension as well, including Helplessness, Anger, and Positive Affect (see Table 4). First, the model of Helplessness was not significant,  $F(4,$

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56) = 1.12, and none of the predictors were significant.

The model predicting Positive Affect was significant and it explained 26.2% of the variance,  $F(4,56) = 4.97$ . Teachers reported less positive affect in relationships with ethnic minority children ( $\beta(SE) = -.32 (.38)$ ,  $p = .011$ ) and children with increased Emotional Symptoms ( $\beta(SE) = -.35(.19)$ ,  $p = .016$ ). In addition, Hyperactivity was positively related to Positive Affect ( $\beta(SE) = .39(.14)$ ,  $p = .024$ ).

The model predicting Anger of teachers was also significant and it explained 38.1% of the variance,  $F(4,56) = 8.63$ . Teachers expressed higher levels of Anger in cases of Conduct Problems ( $\beta(SE) = .74 (.20)$ ,  $p < .001$ ).

Again, separate regression analyses were performed for the constructs of the Processing dimension (see Table 5). The models of Neutralizing of Negative Affect,  $F(4,56) = 1.64$ , and Coherence,  $F(4,56) = 1.07$ , were not significant. Additionally, none of the predictors significantly affected the dependent variables (Table 5).

Table 2. Correlations between constructs of the TRI, the included covariates, and externalizing behavior of children.

Content	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Sens. of Discipline	–													
2. Secure Base	.56**	–												
3. Perspective Taking	.54**	.76**	–											
4. Intentionality	.70**	.61**	.54**	–										
Affect														
5. Helplessness	–.40**	–.34**	–.34**	–.56**	–									
6. Positive Affect	.31*	.53**	.46**	.35**	–.38**	–								
7. Anger	–.23	–.30*	–.10	–.26*	.55**	–.47**	–							
Process														
8. Neutr. Neg. Affect	–.20	–.24	–.34**	–.25	.06	–.06	–.15	–						
9. Coherence	.21	.34**	.45**	.17	.08	.10	.09	–.51*	–					
Covariates and Children's Behavior														
10. Gender	.01	–.07	–.19	–.14	–.02	–.07	.01	–.18	–.18	–				
11. Ethnicity	–.15	–.17	–.13	–.26*	.12	–.30*	–.01	.28*	–.05	–.17	–			
12. Emo. Symptoms	.03	.09	.03	–.01	.17	–.34**	.37**	–.13	.04	.19	.07	–		
13. Conduct	.16	.12	.19	.13	.17	–.13	.58**	–.18	.22	.05	–.19	.56**	–	
Problems														
14. Hyperactivity	.33*	.26*	.38**	.28*	.04	.04	.29*	–.04	.22	.01	.01	.46**	.69**	–
M(SD)	4.75 (0.85)	4.10 (0.97)	4.21 (0.99)	4.53 (1.00)	2.9 (1.21)	4.27 (1.11)	2.36 (1.29)	3.04 (0.54)	3.52 (0.54)	0.41 (0.50)	0.15 (0.36)	1.88 (0.83)	2.05 (1.07)	2.68 (1.25)
Range	2.00– 7.00	2.00– 6.00	2.00– 6.50	1.00– 6.00	1.00– 6.00	1.50– 5.50	1.00– 5.50	1.50– 5.50	2.00– 5.00	0.00– 1.00	0.00– 1.00	1.00– 3.80	1.00– 4.80	1.00– 5.00

Note. Sens. of Discipline = Sensitivity of Discipline, Neutr. Neg. Affect = Neutralizing of Negative Affect, Emo. Symptoms = Emotional Symptoms. \* $p < .05$ , \*\* $p < .01$ .

## Discussion

The purpose of the present study was to examine the unique contributions of teacher reported hyperactivity and conduct problems on teachers' mental representations of their relationships with individual children. Guided by theoretical ideas of Chang and Davis (2009), we hypothesized that teachers would experience more positive affect when it comes to hyperactivity (given the effects of conduct problems), and more negative affect in relationships with children showing more conduct problems (controlling for the effect of hyperactivity). We also expected that teachers would be more inclined to use sensitive practices toward children with higher levels of hyperactive behavior and less sensitive practices in cases of conduct problems. To establish support for these hypotheses, we used an implicit measurement technique based on attachment theory to capture teachers' beliefs, practices and feelings in their relationships with a particular child.

Overall, findings from the present study suggest that teachers have different relationship experiences when it comes to different externalizing behaviors. Based on these results, we have two main conclusions. First, teachers feel more positive about their relationships when it comes to perceived hyperactive behavior, and more negative when it comes to perceived conduct problems. Second, teachers show more sensitive practices (i.e., manage behavior more sensitively, function more as a secure base, are better able to take perspective, and experience more intentionality) in their interactions with hyperactivity. These results are important and relevant given that teachers' mental representations happen outside teachers' subconscious awareness (Bretherton, 1990, Pianta, 1999). As teachers may focus unintentionally on behaviors that are similar to the beliefs they already have about a child, mental representations about relationships can function as self-fulfilling prophecies (Pianta, 1999). Uncovering these unconscious feelings, beliefs, and attitudes through reflection may be a first step in improving negativity in the teacher-child relationship.

Table 3. Regression models predicting teacher's narratives of the content dimension.

	$\beta$ (SE)	$R^2$	$\Delta R^2$	$p$
<i>Sensitivity of Discipline</i>				
Overall model		.15	.11	.051
Ethnicity	-.17 (.31)			.188
Emotional Symptoms	-.09 (.16)			.563
Conduct Problems	-.15 (.15)			.431
Hyperactivity	.47 (.12)			.009**
<i>Secure Base</i>				
Overall model		.11	.07	.153
Ethnicity	-.21 (.36)			.120
Emotional Symptoms	.04 (.18)			.823
Conduct Problems	-.20 (.18)			.327
Hyperactivity	.38 (.14)			.039*
<i>Perspective Taking</i>				
Overall model		.19	.14	.018*
Ethnicity	-.15 (.35)			.245
Emotional Symptoms	-.13 (.18)			.376
Conduct Problems	-.13 (.18)			.511
Hyperactivity	.52 (.14)			.003**
<i>Intentionality</i>				
Overall model		.18	.11	.024*
Ethnicity	-.29 (.36)			.028*
Emotional Symptoms	-.09 (.18)			.564
Conduct Problems	-.20 (.18)			.298
Hyperactivity	.46 (.14)			.009**

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

Table 4. Regression models predicting teacher's narratives of the affect dimension.

	$\beta$ (SE)	$R^2$	$\Delta R^2$	$p$
<i>Helplessness</i>				
Overall model		.07	.02	.355
Ethnicity	.17 (.46)			.231
Emotional Symptoms	.09 (.23)			.584
Conduct Problems	.29 (.23)			.158
Hyperactivity	-.20 (.18)			.277
<i>Positive Affect</i>				
Overall model		.26	.07	.002**
Ethnicity	-.32 (.38)			.011*
Emotional Symptoms	-.35 (.19)			.016*
Conduct Problems	-.26 (.19)			.159
Hyperactivity	.38 (.14)			.024*
<i>Anger</i>				
Overall model		.38	.03	.000**
Ethnicity	.12 (.40)			.276
Emotional Symptoms	.06 (.20)			.639
Conduct Problems	.74 (.20)			.000**
Hyperactivity	-.25 (.15)			.100

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

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Table 5. Regression models predicting teacher's narratives of the process dimension.

	$\beta$ (SE)	$R^2$	$\Delta R^2$	$p$
<i>Neutralizing Negative Affect</i>				
Overall model		.11	.01	.164
Ethnicity	.26 (.37)			.058
Emotional Symptoms	-.11 (.19)			.482
Conduct Problems	-.15 (.18)			.468
Hyperactivity	.11 (.14)			.533
<i>Coherence</i>				
Overall model		.07	.01	.379
Ethnicity	.01 (.21)			.933
Emotional Symptoms	-.14 (.10)			.379
Conduct Problems	.20 (.10)			.319
Hyperactivity	.14 (.08)			.444

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

### Children's hyperactive behavior and teachers' mental representations

Based on Chang and Davis' (2009) ideas, we assumed that teachers would display more feelings of sympathy in interactions with children when they feel children's control potential is low. Although we did not test these ideas directly, we did find that teachers were inclined to express more positive feelings, including feelings of happiness, joy, closeness, and pride, in cases of higher levels of hyperactivity, if controlling for comorbid conduct problems. Furthermore, teachers acted more sensitively in such cases. These empirical findings seem in accordance with theoretical ideas of Chang and Davis (2009), who stated that teachers' positive appraisals may influence the feelings they have about a child, which in turn may have an effect on how teachers approach these children. These results seem plausible in light of research showing that teachers' behavior is based on their beliefs and feelings (Alderman & Nix, 1997). Thus, feelings or attitudes of teachers may be associated with their actions toward a specific child. When teachers have predominantly negative feelings, this may negatively influence their responses or actions toward a child. Consequently, it seems important to focus interventions on the level of mental representational models rather than directly on teachers' behavior (Pianta, 1999). Creating more flexible and differentiated mental representations could help teachers develop the skills that enable them to respond sensitively to children's behavior.

Based on the small, nonsignificant bivariate correlation between hyperactivity and positive affect ( $r = .04$ ), we did not expect that hyperactivity would be a moderate predictor for teachers' positive feelings ( $\beta = .38$ ,  $p = .024$ ). As hyperactivity correlated significantly with emotional symptoms ( $r = .46$ ) and conduct problems ( $r = .69$ ) and not with positive affect, it is possible that conduct problems functioned as a suppressor variable for the other predictors of positive affect. This means that the independent variables (e.g., hyperactive behavior and conduct problems) are more strongly correlated with each other than with the dependent variable (e.g., positive affect). As a consequence, the independent variables filter their shared (irrelevant) information, which results in gathering the unique information of each of the predictors separately (Maassen & Bakker, 2001). It thus seems important to include all aspects of the child's behavior in one model for positive affect to fully understand the unique contribution of hyperactivity on teachers' affect. Pandey and Elliott (2010) also argued that it is better to interpret correlated predictors in combination in one model instead of in isolation from one another. The results showed that, above other behavioral difficulties that children may experience, hyperactivity plays the most important role in teachers' positive affect. More specifically, it suggests that teachers respond differently to hyperactivity in the context of (comorbid) conduct problems.

With regard to the specific aspects of the content dimension, we found that teachers did provide more security when they perceived hyperactive behavior, indicating that the teacher was able to foster trust and warmth and believed that these aspects were important for the cognitive and emotional development of child. Previous research has also shown that the teacher can function as a secondary attachment figure by providing support to young children in times of stress (Koomen & Hoeksma, 2003). The present study indicates that the teacher may also function as an attachment figure for older children with various socio-emotional behaviors. These results are promising considering the findings of Olivier and Archambault (2017), who concluded that for children with high levels of hyperactivity, support in the teacher-child relationship may function as a protective factor against further behavioral disengagement.

Also related to the content dimension, teachers were more aware of the internal state of children with higher levels of hyperactive behavior, which indicates that they are better able to understand the perspective of the child in the case of hyperactivity. In addition, teachers were more inclined to seek opportunities to promote growth in children with higher levels of hyperactive behavior. A possible explanation for these findings is that teachers may have

acquired sufficient knowledge about hyperactivity or symptoms of Attention Deficit Hyperactive Disorder (ADHD). Many studies confirm that teachers have adequate knowledge regarding symptoms and causes of hyperactivity and ADHD (e.g., Bekle, 2004). Given that the prevalence of the disorder ADHD is relatively high (Sayal, Prasad, Daley, Ford, & Coghill, 2017), we can assume that most teachers have gained experience with a child with hyperactivity in their classroom. Therefore, teachers' knowledge about hyperactive behavior could be sufficient to understand the internal state of hyperactive children. In addition to a basic understanding of hyperactive behavior, teachers are probably also well informed about the motives of children showing higher levels of hyperactivity. When they understand that these children are not able or find it difficult to control their behavior in the classroom, this may influence their sensitive management style in a positive way (cf., Chang & Davis, 2009). That is also what we found in our study, teachers were better able to manage children's behavior in a sensitive manner.

### **Children's conduct problems and teachers' mental representations**

In line with our expectations, we found that teachers felt more negativity when they perceived conduct problems, if controlling for comorbid hyperactivity. They talked more frequently about negative aspects of the relationship and showed more feelings of anger and frustration in cases of conduct problems. It is possible that disobedient and aggressive behaviors of the child undermine the authority of the teacher in the classroom (Brophy & McCaslin, 1992). As a result, teachers feel more threatened or frustrated because conduct problems may hamper their professional functioning in the classroom. Furthermore, it is possible that teachers' coping potential is lower in interactions with children with higher levels of conduct problems (Chang & Davis, 2009), leading to feelings of negativity and anger.

Also with regard to the process dimension, we did not find an association with regard to teachers' helplessness in dealing with higher levels of conduct problems, nor in relation to hyperactivity. Based on the theoretical ideas of Chang and Davis (2009), we expected that teachers would feel more ineffective or powerless in relation to children showing conduct problems because these behaviors might be judged as intentional (i.e., the teacher may think that the child has a higher level of control potential). However, children's externalizing behaviors were not associated with teachers' feelings of helplessness. Two explanations for these findings could be offered. First,

the researchers selected children based on the level of externalizing behaviors and not on the degree to which they experienced relational difficulties. Therefore, it is possible that teacher–child relationship quality was not that poor and teachers did not feel that much ineffective in the relationship with the child. Second, the levels of externalizing behaviors were not that high for most of the children, since we used a non–clinical regular elementary sample instead of a clinical sample. This may have led to lower levels of helplessness in the current sample. Nonetheless, the pattern of coefficients seemed to indicate higher levels of helplessness in relationships with children showing more conduct problems versus lower levels of helplessness in relationships with children with more hyperactive behavior. More research is needed to draw more firm conclusions about teachers' feelings of helplessness.

With regard to the content dimension, we did not find that teachers responded less sensitively towards perceived conduct problems. Although all coefficients of the content dimension were negative ( $\beta$ s ranging from  $-.13$  to  $-.20$ ; see Table 3), indicating that teachers might be less sensitive towards children with higher levels of conduct problems, these coefficients were not significant and cannot be interpreted as if they were significant. A possible explanation for the non-significant results could be sought in the emotion regulation strategies of teachers. Sutton (2004) has revealed that teachers may act more neutral in response to adverse child behavior because of adequate emotion regulation strategies such as pausing, deeply breathing for a few seconds, and controlling the facial features. By using such strategies, teachers may be better able to control their negative feelings in interactions with students in cases of conduct problems. However, if teachers are able to regulate their emotions in this way, we also would expect an increased level of neutralizing of negative affect when it comes to conduct problems. In contrast, the beta coefficient for conduct problems was negative (although not significant), which may indicate that teachers were less inclined to avoid discussing negative emotions during the interview. Because we were not able to find higher levels of neutralizing negative affect in the case of conduct problems, we think it is more plausible to assume that a power–problem may have influenced our results with regard to sensitive practices. We may simply not have had enough power to detect significant effects of conduct problems on constructs of the content dimension. Therefore, it is recommended to replicate this study with a larger sample of teachers to test the effects of the content and process dimensions for teachers in relationships with children with higher levels of conduct problems.

## Children's ethnicity and emotional symptoms

The results seem to suggest that teachers had lower levels of positive affect in interaction with ethnic minority children and when teachers perceived emotional symptoms in children. With regard to children's ethnicity, our results contradict previous findings. A Dutch study of Thijs, Westhof, and Koomen (2012) found, for instance, similar levels of teacher-child closeness for ethnic minority and ethnic majority children. Yet, there are important differences between the study of Thijs et al. (2012) and the present study. First, Thijs et al. (2012) used an explicit method of measuring teacher-child closeness, whereas we tried to uncover subconscious feelings of warmth about the relationship with a child. It is possible that teachers want the relationship with an ethnic minority child to be as close as with ethnic majority children, although teachers may subconsciously feel less positive about this child. We additionally found that teachers acted less intentionally in contact with ethnic minority children, which means that teachers were less inclined to promote social, emotional, or academic growth. Multiple previous studies have shown that children for whom positive relationships with their teacher are especially important are less likely to be selected as interaction partners (Muller, Katz, & Dance, 1999). Muller et al. (1999) found that the teachers' perception of a child's similarity with the teacher, their social skills, and the child's expressed desire for the relationship were all aspects that a teacher would take into account in interaction with a child. Since most of the teachers in the Netherlands have a Dutch background (Thijs et al., 2012), minority children may be especially at risk for being excluded by their teacher as an interaction partner because of a lack of similarity (Monroe & Obidah, 2004), resulting in lower levels of intentionality.

Previous studies have disclosed that teachers perceive their relationships with inhibited children (i.e., children with emotional or internalizing symptoms) as less close compared to their relationships with non-inhibited children (e.g., Zee & Koomen, 2017). The present study suggests that teachers feel less positive when it comes to increased emotional symptoms. Several authors have argued that children who tend to be quiet and avoid personal interaction present a challenge for teachers to develop a positive relationship because children shy away from contact and teachers may unintentionally neglect them in a large classroom (e.g., Chang & Davis, 2009). This may result in teachers feeling less emotionally connected with children showing emotional symptoms.

## **Limitations and future research**

Strengths of our study are that we collected the data at two separate occasions (with four months in between waves), and that we had a relatively large sample of teacher–child dyads considering the time-consuming design of this study. Despite these strengths, some limitations should also be noted. First, although child problem behaviors and teachers' relationship representations were assessed at different times during the school year, the design of this study remains correlational. Therefore, no conclusions about causation can be drawn. Longitudinal research may provide more insights in the order of effects.

Second, the probability of detecting significant effects was rather small because of the relatively small number of teachers ( $N = 61$ ) in the present study. Indeed, post-hoc power analysis revealed that the power to test statistically significant effects was .63, which is relatively low. It is therefore recommended to replicate these findings in a sample with more teachers as it enables researchers to test more complex associations (by including more variables) and may increase the statistical power.

Third, a larger sample size also makes it possible to perform a confirmatory factor analysis to reduce the number of outcomes. By reducing the number of outcomes, a clearer overview of the three dimensions of content, affect, and process may appear. In this study, the number of inferences was relatively large, which could lead to increases of Type I errors. By reducing the number of outcomes, the number of inferences would be smaller, which limits the potential of spurious findings.

Fourth, the high correlation between hyperactivity and externalizing behavior could have resulted in multicollinearity issues, such as inflation of variances. However, based on relatively small variance–inflation–factors and stable models, we assumed that multicollinearity did not play a large role in our regression analyses.

## **Conclusions and implications**

The results of the present study indicate that teachers have different implicit feelings and beliefs underlying their actions in relationships with children with different types of externalizing behavior. It seems that teachers have positive feelings and act sensitively in cases of hyperactive behavior of children. This is notable, because recently it was found that teacher–child closeness or warmth can act as a protective factor against behavioral

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disengagement, especially for children with high levels of hyperactivity (Olivier & Archambault, 2017). Although this result seems promising for children with increased levels of hyperactivity, our results revealed a somewhat more negative picture for relationships between teachers and children with higher levels of conduct problems (or comorbid conduct problems).

School psychologists and teachers need to be more aware of how behavioral problems and characteristics of children contribute to teachers' feelings and perceptions and evaluate how these problems influence their daily practices. It is possible that teachers need more training in dealing with externalizing behaviors, and the positive or negative emotions that follow certain behaviors. For instance, teachers should be stimulated to start reflecting on how negative feelings about children's behaviors and characteristics emerge, ethnicity and conduct problems in particular, and how these emotions influence their daily practices. A school psychologist can possibly help teachers using a relationship-focused reflection program (Spilt, Koomen, Thijs, & Van der Leij, 2012), which seems suitable to target teachers' beliefs and feelings about their relationships with a specific child. Teachers can be made aware of predominantly negative feelings for children with conduct problems (or comorbid hyperactivity and conduct problems) and start thinking about how to alter these feelings regarding the specific child. The relationship focused-reflection program, currently known as LLInC (Leerkracht Leerling Interactie Coaching in Dutch, or: Teacher-Student Interaction Coaching) has been shown to increase kindergarten teachers' sensitivity in interactions with a child (Spilt et al., 2012). Future research could further examine the effects of relationship-focused reflection for teachers working with older children, especially in relation to children with higher levels of conduct problems.