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Introduction

Empathy can be defined as 'the ability to share and understand another's emotional state and context' (Eisenberg & Strayer, 1987), and this has been put forward as one of the most important instigators of human civilisation (Pinker, 2011). It is a bi-dimensional construct, with an affective and a cognitive component (Jolliffe & Farrington, 2006). *Affective empathy* refers to the capacity to experience the emotions of another (Bryant, 1982), while *cognitive empathy* is the capacity to comprehend the emotions of another (Hogan, 1969) and to respond in an adequate manner to the situation the other is experiencing (Davis, 1983; Smith, 2006).

Several studies have been conducted on empathy and its important role in social understanding and social interaction (Schwenck et al., 2014). Higher levels of empathy have been shown to be related to prosocial behaviour (Cohen & Strayer, 1987; Dadds et al., 2009; Eisenberg, Eggum, & Giunta, 2010; Jolliffe & Farrington, 2006), whereas deficits in empathy have been shown to be related to increased aggression, low fear conditioning (Popma & Raine, 2006), low impulse control, selfishness (for an overview, see Hosser & Beckurts, 2005), and callous-unemotional (CU) traits (Hare, 2013; Munoz, Qualter, & Padgett, 2011; Raine, 2013; Skeem, Polaschek, Patrick, & Lilienfeld, 2011). A vast body of research has demonstrated that lack of cognitive empathy is also related to (re)offending (see the meta-analysis by van Langen, Wissink, van Vugt, van der Stouwe, & Stams, 2014).

The development of empathy begins at birth, since precursors of affective empathy, such as affect mirroring and emotional contagion, are already present in newborn babies (Sagi & Hoffman, 1976). In addition, empathy may start to develop in children through the exposure to empathic and sensitive behaviour of their caregivers (Robinson & Little, 1994).

Therefore, especially the quality of the relationship between the child and its primary caregivers, in particular parents, is assumed to play a major role in the development of empathy (Laible, 2007).

According to attachment theory, infants need to develop a relationship with at least one primary caregiver for their successful social and emotional development,

and to learn how to regulate their feelings (Holmes, 1993). Secure attachment develops when children can rely on sensitive caregivers, who attend to their needs of proximity, emotional support, and protection (Atkinson et al., 2000; de Wolff & van IJzendoorn, 1997; van IJzendoorn & de Wolff, 1997). Attachment security has been shown to be related to more empathic behaviour of young aged children (Kestenbaum, Farber, & Sroufe, 1989; Panfile & Liable, 2012; van der Mark, van IJzendoorn, & Bakermans-Kranenburg, 2002), although empathy proved to be unrelated to prosocial behaviour in a study by van IJzendoorn, Bakermans-Kranenburg, Pannebakker, and Out (2010). Notably, a recent meta-analysis has shown that insecure attachment was positively related to psychopathy, which is a personality disorder characterised by lack of empathy (van der Zouwen, Hoeve, Hendriks, Asscher, & Stams, 2018).

A vast amount of research has been conducted on the parental antecedents of child attachment security, such as parenting style (e.g. Nair & Murray, 2005). The present study aims to integrate the available literature on the development of empathy in children and adolescents from the perspective of parenting, in particular, differences in parenting styles. It is supposed that parenting styles influence the development of empathy through the particular combination of support and control that parents provide (Baumrind, 1966, 1971). Baumrind described four different parenting styles, based on the two major parenting dimensions of support and control: *authoritative parenting* (high support and high control); *authoritarian parenting* (low support and high control), *permissive parenting* (high support and low control), and *uninvolved parenting* (low support and low control).

Authoritative parenting is characterised by warmth, reasonable demands, and high sensitivity and responsiveness to the child's needs. Authoritative parenting has been shown to be related to secure attachment of children (Doinita & Maria, 2015; Millings, Walsh, Hepper, & O'Brien, 2013). Although authoritative parents have high expectations of their children, they are also able to provide their children with the resources and support they need to succeed. Authoritative parents are open and responsible, and provide their children with love and warmth in addition to limits and fair discipline, resulting in a positive development of (cognitive) empathy and perspective taking towards behaviour of others (Farrant, Devine, Maybery, & Fletcher, 2011; Soenens, Duriez, Vansteenkiste, & Goossens, 2006).

Authoritative parents tend to use inductive discipline to teach their children prosocial behaviour (moral internalisation) and empathy by modelling prosocial behaviour, expressing compassion for others, pointing out similarities among people from different backgrounds, and discussing moral beliefs and values (Dlugokinski & Firestone, 1974; Hoffman, 1970b, 1982, 1983, 1984; Hoffman & Saltzstein, 1967; Zahn-Waxler, Radke-Yarrow, & King, 1979). Hoffman (1970a) claimed that the most effective type of parenting discipline is "induction", in which parents emphasise the perspective of others, point to the distress of possible victims, and learn perspective taking and showing empathic responses towards others (Bar-Tal, Raviv, & Leiser, 1980; Holmgren, Eisenberg & Fabes, 1998; Krevans & Gibbs, 1996; Oliner & Oliner, 1988).

The *authoritarian parenting* style is characterised by exceedingly high expectations, demands, and control in contrast to low levels of warmth, guidance, and

responsiveness, which has shown to be negatively associated with secure attachment (Doinita & Maria, 2015; Millings et al., 2013). Parents with an authoritarian style have very high expectations of their children, but are unable to provide sufficient (positive) feedback and nurturance. Mistakes tend to be punished harshly. Yelling and corporal punishment are also commonly seen in the authoritarian style. Authoritarian parents take decisions for their children without explanation, resulting in uncertainty and dependence of their children (Nix et al., 1999), which negatively affects personal growth, and may finally result in anxiety, loneliness, unhappiness, and aggressive behaviour (Berk, 2006). Due to their lack of warmth and unresponsive behaviour, authoritarian parents do not foster perspective taking and empathy in their children (Cornell & Frick, 2007).

Permissive parenting is characterised by low demands and high responsiveness. Permissive parents tend to be loving, but do not provide adequate control. High permissive parenting has been shown to be associated with avoidant and anxious attachment (Doinita & Maria, 2015; Millings et al., 2013), which may hamper the development of empathy (Hazan & Shaver, 1987; van IJzendoorn, 1997). These parents do not expect mature behaviour from their children and often seem more like a friend than a parent. Therefore, they may lack the authority to socialise their children, for instance, by teaching empathic responding through the provision of inductive discipline (Hoffman, 2000). Because there are few rules, expectations, and demands, children raised by permissive parents tend to have low self-control (Baumrind, 1993, 1997; Lamborn, Mounts, Steinberg, & Dornbusch, 1991). Permissive parenting results in disobedience, defiant, and impulsive behaviour of the child (Berk, 2006) as well as lack of emotional self-regulation, which may further hamper the development of empathy (Schaffer, Clark, & Jeglic, 2009).

Finally, *uninvolved* or also *called neglectful parenting* is characterised by a lack of responsiveness to a child's needs. Uninvolved parents make few to no demands and are often indifferent, dismissive, or even completely uninvolved (Lamborn et al., 1991; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Neglect negatively affects emotional development and can result in anxious or avoidant attachment of the child (Doinita & Maria, 2015; Millings et al., 2013). Uninvolved parenting is characterised as the most dysfunctional parenting style and has shown most negative impacts on the development and behaviour of the child (Todorović & Matejević, 2014). Research has shown that neglectful parenting (Barnow, Lucht, & Freyberger, 2005), authoritarian or harsh and punitive parenting (Grogan-Kaylor, 2005), and permissive parenting (Beck & Shaw, 2005; Kimonis et al., 2006) are risk factors for the development of antisocial behaviour and may hamper the development of empathy in children (Grogan-Kaylor, 2005; Nelson, Padilla-Walker, Christensen, Evans, & Carrol, 2011).

This chapter describes the results of a meta-analysis on the association between parenting style and empathy in children. It will also be investigated whether the association between parenting and children's empathy is moderated by the measurement of empathy (affective, cognitive, or empathy in general), research design (cross-sectional or longitudinal), children's gender, ethnicity, age, parents' socio-economic status (SES), measurement instruments to investigate parenting style and empathy (questionnaire or observations), and the country where the research is conducted.

Method

Study selection

A comprehensive search of the literature published until 2017 was conducted to identify research on the relation between parenting style and empathy in children and adolescents up to age 23. The included studies were found in three consecutive steps. The first step was to identify studies through keyword searches in electronic databases, including Google-Scholar, ERIC, PubMed, PiCarta, ScienceDirect, Proquest, Whiley, Narcis, and Web of Knowledge. Keywords included *parenting* and *empathy*, and several keywords related to parenting (e.g. maternal responsiveness, harsh discipline) and empathy (e.g. victim-based orientation, emotional understanding). In the second step, studies were searched by using the snowball method. This entailed inspection of the reference sections of relevant (already retrieved) articles, narrative reviews, and book chapters. In the third step, all authors of the included studies were emailed to ask whether they were working on or knew other relevant studies that were not yet found and retrieved. Finally, 14 studies examining the association between parenting style and their children's empathy were included (see Table 4.1 for an overview of included studies).

Study coding procedures

Potential moderators of the association between children's empathy and parenting were grouped into publication characteristics, sample characteristics, study characteristics, and assessment characteristics. Publication year and impact factor of the journal in which the study was published were coded as publication characteristics. As for the sample characteristics, the gender of the children in a sample (males, females, or both), the children's ethnicity (in terms of the percentage Caucasian/White children in a sample), age of the children (early childhood, middle childhood, or adolescence), and the socio-economic status of families in the sample (low, medium, or high SES) were coded. Further, as an assessment characteristic, the type of instrument that was used to assess parenting style and empathy (questionnaires or observations), and the country where the research was conducted was coded as a study characteristic. Finally, the parenting style – with the categories authoritative, authoritarian, permissive, and neglectful parenting – and the dimension of empathy – with the categories cognitive empathy, affective empathy, and empathy without further specification – were coded.

Measures of empathy in the selected studies

None of the selected studies in this meta-analysis used the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006) as an empathy measure. A total of seven studies were conducted before the development of the BES in 2006. Some studies used observational measures, such as facial expressions, to investigate empathy, especially in younger children (Kiang et al., 2004; van der Mark et al., 2002; Zhou et al., 2002). Some studies (Farrant et al., 2011; McGrath & Zook, 2011;

Table 4.1 Included studies

Study	*N*	*Peer review*	*IF*	*Design*	*Country research conducted*	*Type empathy*	*Gender*	*Ethnicity*	*age*
Schaffer et al. (2009)	244	yes	1.240	CS	NA	affective	both	.20	adolescence
Farrant et al. (2011)	72	yes	1.149	CS	NA	cognitive	both	.10	Early childhood
Kiang, Moreno, and Robinson (2004)	175	yes	4.141	LT	NA	affective	both	.92	Early childhood
Soenens et al. (2006)	284	yes	2.560	CS	Europe	empathy	both d	–	adolescence
Shen, Carlo, and Knight (2013)	106	yes	1.413	CS	Europe	cognitive	both	.21	Adolescence
Cornell and Frick (2007)	87	yes	3.310	CS	NA	cognitive	both	.95	Early childhood
De Kemp, Overbeek, De Wied, Engels en Scholte (2007)	403	yes	0.690	LT	Europe	affective	both	.96	adolescence
Zhou, Eisenberg, Losoya, Fabes, Reiser, Guthrie, Murphy, Comberland and Shepard (2002)	169	yes	4.061	CS	NA	empathy	both	.78	childhood
McGrath and Zook (2011)	33	yes	1.802	CS	NA	empathy	girls	.27	childhood
Strayer and Roberts (2004)	60	yes	1.800	CS	NA	empathy	both	0.0	childhood
Miller, Johnston, and Pasalich (2014)	56	yes	1.759	CS	NA	empathy	both	.45	childhood
Antonopoulou, Alexpoulos, and Maridaki-Kassotaki (2012)	190	yes	0.0	CS	Europe	empathy	both	–	childhood
Padilla-Walker and Katherine Christensen (2011)	500	yes	2.480	LT	NA	empathy	both	.07	childhood
van der Mark et al. (2002)	125	yes	1.800	CS	Europe	empathy	girls	.95	Early childhood

Note. # Studies = number of independent studies; # ES = number of effect sizes: Intercept/Mean r = mean association between parenting and empathy; 95% CI = 95% confidence interval.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Schaffer et al., 2009; Strayer & Roberts, 2004) used questionnaires distinguishing between cognitive and affective empathy, which is in line with the two-dimensional structure of the BES.

Statistical analyses

To correct for dependency in effect size caused by the extraction of multiple effect sizes from individual primary studies, a three-level random effects model was used for estimating an overall association between parenting style and empathy in youth and conducting moderator analyses. In this three-level approach to meta-analysis, three different sources of variance are modelled (van den Noortgate, López-López, Marín-Martínez, & Sánchez-Meca, 2015). The sampling variance of each effect size estimating a population effect size is modelled at the first level. At the second level, variance in effect sizes within studies is modelled (i.e. within-study variance), and at the third level, variance in effect sizes retrieved from different studies (i.e. between-study variance) is modelled. We applied the procedure and R script described by Assink and Wibbelink (2016).

Parameters were estimated using a Restricted Maximum Likelihood method. The first step was to calculate an overall estimate of the effect size. Next, whether the variance at level 2 (within studies) and the variance at level 3 (between studies) significantly deviated from zero was investigated by performing two one-sided log-likelihood ratio tests. This was done by testing whether constraining either the level 2 or level 3 variance deteriorated the model fit compared to the unconstrained model in which both variance components were estimated. In case of significant level 2 or 3 variance, univariate moderator analyses were performed to investigate which moderators significantly influenced the association between parenting style and empathy. Prior to performing analyses, a check for outliers in all Fischer *z* scores was performed by determining whether standardised values exceed (−)3.29, but no outliers were identified.

To test for publication bias, a trim and fill analysis was performed to investigate whether the distribution of effect sizes was asymmetrical and, if that was the case, what effect sizes should be imputed to the right or the left side of the funnel to restore the symmetry in the effect size distribution (Duval & Tweedie, 2000a, 2000b). With this procedure whether the estimated overall effect may be an underestimation or an overestimation of the true effect can be checked. If effect sizes are missing on the left side of the funnel, there is indication of publication bias in the effect sizes that are analysed.

Results

Descriptive statistics

We included 14 studies (see Table 4.1) with a total sample size of $N = 2504$ participants, and with sample sizes ranging from $N = 33$ (McGrath & Zook, 2011) to $N = 500$ (Padilla-Walker & Christensen, 2010). The mean age of participants was 10.00 years ($SD = 4.33$; range = 20.70). All included studies were published between 2002 and 2013.

Overall effect size

The overall association between parenting style and empathy was $r = .171$ ($p < .001$), indicating a small (Cohen, 1988), but positive and significant effect. The variance at level 2 (i.e. the within-study variance) was significant, χ^2 (1) = 131.98 ($p < 0.001$), indicating heterogeneity in effect sizes that were extracted from the same studies. The level 3 between study variance was not significant, χ^2 (1) = .85 ($p = .36$). Of the total variance, 15% was distributed at level 1, 77% was distributed at level 2, and 8% was distributed at level 3. Because within-study heterogeneity was identified, moderator analyses were performed to investigate which moderators significantly influenced the strength of the association between parenting style and empathy.

Moderator analyses

The results of the moderator analyses are depicted in Table 4.2. We found significant results for type of parenting style, $F(2,62) = 10.87$ ($p < 0.001$), and empathy type, $F(2,62 = 9.40$ ($p < .001$). Only authoritative parenting was positively associated with empathy ($r = .232$; $p < .001$). There were positive effects for cognitive empathy ($r = .348$; $p < .001$) and affective empathy ($r = .240$; $p < .01$), but not for empathy in general ($r = .086$; n.s.). Also, assessment type proved to be a significant moderator, $F(2,62) = 4.09$ ($p = 0.22$), with positive effects for parent self-report questionnaires only ($r = .217$; $p < .05$) and non-significant effects for parent observations ($r = .026$; n.s.) and mixed assessments ($r = .112$; n.s.). Assessment type of empathy did not moderate the relation between parenting and empathy. Further, socio-economic status of the family significantly moderated the association between parenting and empathy: $F(2,22) = 3.88$ ($p < .05$), with positive effects for high SES ($r = .188$; $p < .001$) and middle SES ($r = .161$; $p < .01$), but not for low SES ($r = .033$; n.s.). Last, we found a moderating effect of the publication year of included studies, $F(1,63) = 6.24$ ($p < .05$), with stronger associations for more recently published studies ($b = .013$; $p < .05$).

Assessment of bias

The funnel plot (depicted in Figure 4.1) indicates that bias may be present in our results. The results of the trim and fill analysis revealed that 12 effect sizes had to be imputed on the right side of the funnel to restore the symmetry in the effect size distribution. This implies that our estimated overall association between parenting and empathy of $r = .171$ may be an underestimation of the true overall association.

Discussion

The present meta-analysis showed that authoritative parenting was positively and modestly associated with higher levels of both cognitive and affective empathy in children, which was consistent with our expectations. However, no significant associations were found between empathy and authoritarian, permissive, or

Table 4.2 Results of Bivariate Moderator Analyses.

Moderator variable	*# Studies*	*# ES*	*Intercept (95% CI) / Mean* r *(95% CI)*	*β (95% CI)*	F*(df1,df2)*[a]	p[b]	*Level 2 variance*	*Level 3 variance*
Parenting style	14	65			$F(2,62) = 10.872$	< .001***	.015***	.012**
Authoritative (RC)			.232 (.151; .313)***					
Permissive			.111 (−.037; .259)	−.121 (−.274; .033)				
Authoritarian			–0.038 (−.159; .083)	−.270 (−.386; −.154)***				
Type empathy	14	65			$F(2,62) = 9.402$	< .001**	.015**	.019**
Cognitive empathy (RC)			.348 (.226; 0.470)***					
Affective empathy			.240 (.065; .414)**	−.108 (−.291; .075)				
Empathy			.086 (−.016; −187)	−.262 (−.383; −.141)***				
Age-range	14	65			$F(2,62) = 1.058$	.353	.026	.002
Early childhood (RC)			.103 (−.009; .215)					
Middle childhood			.177 (.083; .271)***	.074 (−.072; .220)				
Adolescence			.204 (.120; .288)***	.101 (−.039; .241)				
Social Economic Status (SES)	7	25			$F(2,22) = 3.879$	.036*	.006	.000
Low (RC)			.033 (−.066; .131)					
Middle			.161 (.070; .251)**	.128 (.006; .262)**				
High			.188 (.126; .250)***	.155 (.039; .272)*				
Sex of the child	14	65			$F(2,62) = .839$	.437	.027	.002
girl (RC)			.096 (−.058; .251)					
boy			.084 (−.149; .317)	−.012 (−.282; .258)				
mixed gender			.186 (.125; .247)***	.090 (−.075; .254)				
Research country	13	63			$F(1,61) = .010$	.922	.027	.004
Europe (RC)			.171 (.064; .277)**					
Northern-Amerika			.164 (.088; .024)***	−.006 (−.137; .124)				
Ethnicity	12	58			$F(1,56) = 2.617$	.111	.023	.002
Caucasian			.242 (.122; .363)***	−.137 (−.306; .033)				
Impact factor	14	65			$F(1,63) = .973$	.328	.026	.002
Impact factor			.214 (.111; .317)***	−.021 (−.063; 021)				

Year of publication	14	65			$F(1,63) = 6.239$	.015*	.025	.000
Year of publication			–25.387 (–45.836; –4.938)*	.013 (.003; .023) *				
Assessment type parenting	14	65			$F(2,62) = 4.086$	.022*	.025	.000
Parent questionnaire (RC)			.217 (.163; .272)***					
Parent observation			.026 (−.129; .181)	−.192 (−.356; −027)*				
Parent mixed			.112 (.025; .199)	−.106 (−.208; −.003)*				
Assessment type empathy	14	65			$F(2,62) = 2.243$	.115	.026	.000
Questionnaire (RC)			.209 (.152; .266)***					
Observation			.099 (.009; .190)*	−.110 (−.217; −.003)*				
Composite			.137 (−.010; .284)	−.072 (−.230; −.086)				

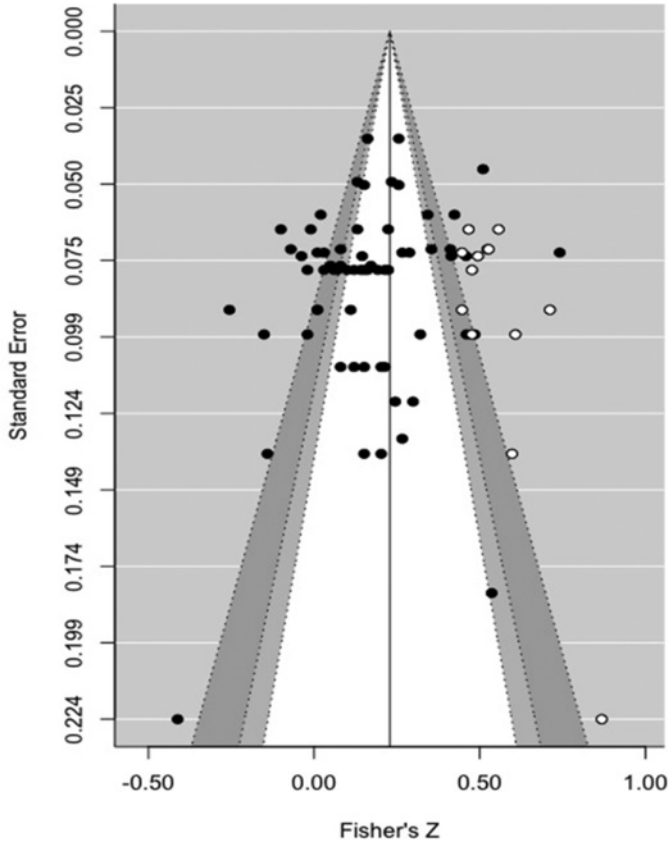

Figure 4.1 Funnel plot

neglectful parenting. The present study also tested available moderators, including children's gender, ethnicity, mean age, parents' social-economic status (SES), the type of instruments that were used to assess parenting style and empathy, and the country where the study was carried out. Results indicated that there was no moderating effect of gender, ethnicity, and age, which indicates to some degree a possible generalizability in areas across different groups of children. However, the association between parenting and child empathy was only found in samples of middle and high family SES, which suggests that the association was not present in families with a low SES. Finally, assessment type and year of publication proved to be significant moderators, with positive effects for only parent self-report questionnaires, and larger effects for more recent published studies.

Results of the present meta-analysis indicated authoritative parenting to be a positive influence on the development of empathy in children, whereas authoritarian and permissive parenting had no effect. No studies were found examining

the relation between neglectful parenting and empathy. Authoritative parenting is characterised by both, reasonable parental control and high support and responsiveness (Nelson et al., 2011; Strayer & Roberts, 2004). According to Hoffman's (1970a) socialisation theory, parents who used predominantly inductive discipline (parental support and control), as opposed to power assertion, have children who are relatively prosocial and more empathic (Davis & Carlo, 2018; Hoffman, 1970a; Krevans & Gibbs, 1996). Emotions of empathy, empathy-based guilt, and the consideration of how behaviour can affect others can motivate prosocial behaviour in subsequent social situations (Krevans & Gibbs, 1996). Authoritarian parenting is defined by lack of support (warmth and responsiveness) and high parental control, whereas permissive parenting is defined by high levels of support and low parental control (Nelson et al., 2011). Given that no associations were found between authoritarian or permissive parenting and empathy in children, it is plausible to suggest that only high levels of both parental support and parental control make children more empathic. Alternatively, only low levels of both parental support and parental control may result in low levels of empathy in children. However, no studies have yet been conducted to allow this hypothesis to be tested.

Although we found no association between authoritarian parenting and lower empathy, it is possible that the more extreme cases of authoritarian parenting, designated as child abuse, may have a negative effect on the development of empathy in children. Notably, a study by Main and George (1985) showed that children who were physically abused reacted to others' distress by threatening or attacking them, suggesting empathy deficits (Main & George, 1985). A study by Straker and Jacobson (1981) found a direct link between child abuse and lower levels of empathy in children. However, Lazaro and Lopez (2010) did not find a relation between child maltreatment and low empathy. Finally, two reviews found empirical evidence for deficits in theory of mind and social understanding, which are empathy-related concepts, in children with a history of maltreatment (Benarous, Guilé, Consoli, & Cohen, 2015; Luke & Banerjee, 2013).

Moderator analyses revealed that a positive and significant association between parenting and child empathy was found in samples of middle and high SES, but not in samples of low SES, for which we found no significant association at all. This result is in line with the theory of Bronfenbrenner and Ceci (1994), who assumed that the development of specific competences in children, such as empathy, needs a stimulating environment, which is in general more often found in middle and high SES families. Another significant moderator was the assessment type of parenting style. Only when parenting styles were measured by questionnaires was a significant relation between parenting and empathy found, in contrast to observations and composite measures, for which no significant associations were found. A plausible explanation is inflation of the association through shared method variance, because in most research, parenting style and empathy were both assessed by using questionnaires. Further, somewhat larger effect sizes were found in more recent studies, which might be explained by improved assessment of empathy in recent years, and in particular the distinction between affective and cognitive empathy, given that older studies did not distinguish between affective

and cognitive empathy, and thus failed to show a significant association between parenting style and empathy.

The BES (Jolliffe & Farrington, 2006) does distinguish between affective and cognitive empathy, but to date no studies exist examining the association between parenting and affective and cognitive empathy by means of the BES. However, the BES has been used as an outcome variable in studies examining child-rearing practices of professional caregivers in residential youth care. Notably, authoritative caregiving of professionals, which was reflected in a therapeutic group climate, proved to be associated with both, affective and cognitive empathy of adolescents in a study by Heynen, van der Helm, Cima, Stams, and Korebrits (2017), while van der Helm, Stams, van der Stel, van Langen, and van der Laan (2012) found a relation between authoritative caregiving of professionals and cognitive empathy, but not affective empathy.

Limitations

There are a number of limitations to this study. First, the literature search for this meta-analysis did not identify studies on neglectful parenting and empathy, perhaps because neglectful or uninvolved parenting is not viewed as a child-rearing practice by most researchers. Support and control constitute the basic dimensions of parenting, whereas neglectful "parenting" may be considered undefined as a parenting style given the absence of support and control (Nelson et al., 2011). However, it may be argued that scoring low on the defining dimensions of parenting in fact reflects neglectful parenting. Our assessment of bias showed that bias may have been present in the effect sizes we analysed. Although there was no indication of publication bias, a funnel plot showed that other forms of bias, such as selection bias, cannot be ruled out, as studies with relatively strong associations between parenting style and empathy may be underrepresented in the present meta-analysis.

A further limitation is that all studies were cross-sectional, which might inflate the association between parenting and empathy to the extent that parenting style is assessed as a state that might be affected by the child's empathy. Also, fathers were underrepresented in the studies that were included in this meta-analysis. We should therefore be cautious in generalising the findings of this meta-analysis to fathers. Notably, a narrative review by Bögels and Phares (2008) indicates that fathers show different (more child-challenging) parenting styles than mothers, while data concerning fathers' involvement in child-rearing is often missing, and such missing data must be regarded as "systematic".

Conclusions

Regarding greater empathy of children, authoritative parenting can be defined as the most successful parenting style. Authoritative parents show reasonable demands and high parental support and give their children the resources and support they need to succeed. It seems that only the combination of high support and high control fosters the healthy development of empathy in children, and

that authoritative parenting, therefore, uniquely fosters empathy. A lack of either parental control or parental support had no relation to child empathy. We suggest future researchers should investigate whether a combination of a lack of parental support and parental control (i.e. uninvolved parenting) specifically puts children at risk for empathy deficits. No conclusions can be drawn in this regard, as no studies on uninvolved parenting and child empathy have been performed yet. Based on the results of this meta-analytic findings, future research should also focus on the positive association between parental support and (cognitive and affective) empathy. Intervention programs should target both parental support and parental control to foster empathy development in children, and prevent antisocial behaviour in children and adolescents (Jolliffe & Farrington, 2004, 2007; van Langen et al., 2014), raising the likelihood of a positive development.

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