



Parenting and the parent–child relationship in families of children with mild to borderline intellectual disabilities and externalizing behavior



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ABSTRACT

This cross-sectional study examined the association between parenting behavior, the parent–child relationship, and externalizing child behavior in families of children with mild to borderline intellectual disabilities (MBID). The families of a child with MBID and accompanying externalizing behavior problems ($n=113$) reported more positive discipline and physical punishment but less involvement, less positive parenting, less monitoring, a lower sense of parenting competence, less acceptance of the child, and less closeness to the child than the families of a child with MBID and no accompanying externalizing behavior problems ($n=71$). The parent–child relationship was most strongly associated with externalizing child behavior, over and above parenting behaviors. In addition, the parent–child relationship was found to be associated with parenting behavior, over and above the child's externalizing behavior. Our results highlight the importance of both the parent–child relationship and parenting behavior in connection with the occurrence of externalizing behavior problems on the part of children with MBID. Parenting behavior and the parent–child relationship may thus be promising targets for interventions with this group of children.

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1. Introduction

Many children in child welfare and the justice system have mild to borderline intellectual disabilities (MBID), i.e., an IQ between 55 and 85 with problems in their adaptive functioning (Kaal, 2010; Konijn, De Graaf, & Van den Berg, 2004; Kroll et al., 2002). Children with MBID are three to four times more likely to develop externalizing behavior problems than their peers with average intelligence (defined here as an IQ over 85) (Baker, Blacher, Crnic, & Edelbrock, 2002; Dekker, Koot, Van

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der Ende, & Verhulst, 2002). Children and adolescents with MBID have also been found to have an increased risk of displaying aggressive behavior and social skills deficits (Guralnick & Groom, 1987). In addition, the externalizing behavior problems of children with MBID have recently been shown to persist longer than the externalizing behavior problems of children with average intelligence (Emerson, Einfeld, & Stancliffe, 2011).

Externalizing behavior problems are not only problematic for the children and adolescents themselves but also for the social environment. The societal costs of such problems have been documented to be large (Orobio de Castro, 2004), and to include the costs of crime, extra educational services, and treatment services (Scott, Knapp, Henderson, & Maughan, 2001). The costs of externalizing behavior problems can be assumed to be larger for children with MBID, as their MBID is more often accompanied by other disorders that need attention. This comorbidity might entail impaired functioning in daily life and thus require more intensive care than children with conduct disorders with no MBID (Dekker & Koot, 2003; Emerson et al., 2011). Effective interventions to prevent or reduce the occurrence of externalizing behavior problems among children with MBID are thus needed but lacking to date.

In children with average intelligence, externalizing behavior problems have been shown to be associated with several aspects of parenting. Interventions aimed at improved parenting behavior have been shown to be the most effective treatment for externalizing behavior problems (McCart, Priester, Davies, & Azen, 2006). However, little is known about the associations between parenting behavior and the externalizing behavior problems of children with MBID. Given the recognized importance of parenting in the general population, knowledge of the associations between parenting behavior, the parent–child relationship, and externalizing behavior problems in children with MBID seems important. To be able to intervene, however, greater insight into the factors underlying the externalizing behavior problems of children with MBID is needed.

In the present study we therefore first examined the characteristics of parenting behavior and the parent–child relationship in families of children with MBID and either externalizing behavior problems or no such externalizing behavior problems; we then analyzed the specific associations between parenting behavior, the parent–child relationship, and externalizing child behavior in the families of children with MBID.

1.1. Parenting behavior and externalizing behavior problems in children with average intelligence

Parenting behavior is one of the main environmental factors associated with the occurrence of externalizing behavior problems among children with average intelligence (Dodge & Pettit, 2003). Ineffective parenting behaviors such as physical discipline, inconsistency, and lack of warmth, have been shown to be associated with the development of externalizing behavior problems in children with average intelligence (Dodge & Pettit, 2003; Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004; Patterson, 1982). Even though using physical punishment might be thought to lead to desirable behavior in the short term, it has been shown to be associated with increased deviant behavior, aggressiveness, and delinquency in the long term (Straus & Donnelly, 2001). The more coercive the control that parents exert, including physical punishment, the more deviant the behavior displayed by their children, and vice versa (Barnes & Farrell, 1992; Parent et al., 2011; Rothbaum & Weisz, 1994; Weiss, Dodge, Bates, & Pettit, 1992). Positive parenting and especially higher levels of involvement, warmth, and monitoring have been shown – in contrast – to be associated with lower levels of externalizing behavior problems among children with average intelligence (Amato & Rivera, 1999; Barnes & Farrell, 1992; Hoeve et al., 2009). Warmth has even been reported to provide a buffer against the negative effects of harsh punishment (McKee et al., 2007). Perhaps more importantly, the associations between parenting behavior and child behavior have been found to be bidirectional, which means that a vicious circle can emerge, in which inadequate parenting fosters externalizing behavior problems, which then foster further parenting problems and externalizing behavior problems (Bell, 1968; Laird, Pettit, Bates, & Dodge, 2003; Reitz, Deković, & Meijer, 2006; Sameroff & MacKenzie, 2003).

Parenting interventions can break a negative vicious circle between parenting behavior and externalizing child behavior. For instance, parent management training programs have been shown to effectively alter parenting behaviors, with direct, lasting, and positive effects on the behavior of children with average intelligence as a result (McCart et al., 2006). The association between parenting behavior and child behavior may be different in the families of children with MBID than in the families of children with average intelligence. Other factors may also come into play in the families of children with MBID including inadequate parenting behavior arising from children's disabilities and parents' lack of acceptance of their child's disabilities. Whether or not the atypical behavior of a child with MBID evokes inadequate parental responding may depend on the extent to which the parents accept or understand the child's behavior as possibly being a consequence of the child's disabilities.

1.2. Parenting children with MBID

Parenting children with MBID involves several challenges due to the children's lower cognitive abilities (Baker et al., 2002). For example, when children need to be repeatedly instructed, the patience of the parents may be tested. However, surprisingly little is known about actual parenting of children with MBID, or the associations between parenting behavior and the occurrence of externalizing behavior problems among this population of children. The focus of most research concerned with the parenting of children with MBID has been primarily on the impact of having such a child on parental well being and levels of stress (e.g., Baker et al., 2002, 2003; Hill & Rose, 2009); child behavior is of little or no concern. Parenting a

child with MBID has indeed been shown to be more frequently associated with more high levels of parental stress than parenting a child of average intelligence (Baker et al., 2003). And when a child with MBID develops externalizing behavior problems as well, the parental level of stress will increase (Baker et al., 2002, 2003; Hill & Rose, 2009). In other words, having a child with MBID and externalizing behavior problems tends to be taxing for parents.

Mothers of young children with MBID, regardless of the presence or absence of child behavior problems, have been shown to display less positive parenting, less positive affect, more negative affect, and less involvement than mothers of young children without MBID (Beck, Daley, Hastings, & Stevenson, 2004; Fenning, Baker, Baker, & Crnic, 2007; Green & Baker, 2011). In another study with a group of young children who had cognitive delays, moreover, inconsistent and angry parenting was found to predict the persistence of conduct problems (Emerson et al., 2011). Taken together, these findings indicate that children with MBID are at a heightened risk for poor parenting.

1.3. *The parent–child relationship in families of children with average intelligence*

Research has shown that not only child behavior, but also parental perceptions of the parent–child relationship – including parental sense of competence, closeness to the child, and acceptance of the child – are significantly associated with not only parenting in children with average intelligence (Abidin, 1992; Bosmans, Braet, Van Leeuwen, & Beyers, 2006; Deković, Janssens, & Van As, 2003), but also with child externalizing behavior problems (Bosmans et al., 2006; Deković et al., 2003). Three aspects of the perceived parent–child relationship seem particularly important. Parents' sense of competence is the parents' confidence in his or her ability to perform parenting tasks (Bandura, 1977), and has been found to be indirectly linked to the occurrence of externalizing child behavior via parenting behaviors (Jones & Prinz, 2005). Closeness represents the strength of the affective parent–child bond. Both parental sense of competence and closeness with the child have been shown to be linked to the occurrence of positive parenting behaviors (Coleman & Karraker, 1997; Sanders & Woolley, 2004; Vieno, Nation, Pastore, & Santinello, 2009) and the occurrence of less externalizing behavior problems in children (Coleman & Karraker, 1997; Vieno et al., 2009). Finally, parental acceptance of the child has been found to be associated with fewer externalizing behavior problems on the part of children and less dysfunctional parenting in children of average intelligence (Rohner & Britner, 2002).

1.4. *The parent–child relationship in families of children with MBID*

The parent–child relationship can be stressed by the challenges of parenting a child with MBID. Parents of children with MBID more often perceive their parenting behavior as flawed, which suggests that the parental sense of competence among these parents may be lower than in other parents (Didden, 2005). In addition, families with a child with MBID might be more likely to be less close because of the increased likelihood of externalizing behavior problems on the part of children with MBID (Collot d'Escury, 2007). The parents of children with MBID face many parenting challenges, which makes acceptance of the child's disability particularly important in families of children with MBID (Baker, Blacher, Kopp, & Kraemer, 1997). Accepting that a child may have special needs and display deviant or inappropriate behaviors at times due to his or her disability may therefore be crucial for preventing inadequate responding on part of the parents to child behavior. It is nevertheless unknown whether a positive parent–child relationship (that thus entails acceptance, closeness, and self-efficacy) is associated with significantly fewer externalizing behavior problems and thus appears to provide a buffer for the less than optimal parenting that might sometimes occur in families of children with MBID and externalizing behavior problems.

1.5. *The present study*

In the present study, we compared the parenting behavior and quality of the parent–child relationship in the families of children with MBID and either externalizing behavior problems or no such problems. In addition, we analyzed the associations between parenting, the parent–child relationship, and externalizing behavior problems on the part of the child in the families of the children with MBID. Three hypotheses were tested during the course of doing this. First, we expected the parenting behavior and parent–child relationship in the families of children with MBID and accompanying externalizing behavior problems to differ from the parenting behavior and parent–child relationship in the families of children with MBID and no such externalizing behavior problems. Second, we expected both parenting behavior and the parent–child relationship to be uniquely associated with the externalizing behavior of children with MBID. Third, we expected parenting of children with MBID to be associated with the parent–child relationship over and above externalizing behavior in children with MBID. This hypothesis was based on the idea that parenting responses do not depend on the actual child behavior alone, but more so on parental interpretations of a child's behavior and acceptance of the child's behavior.

2. Method

2.1. *Participants*

The families of 184 children with MBID and an age of 9–16 years participated in this cross-sectional study. The participating children's mean age was 12.4 years ($SD = 2.07$). The mean intelligence score was 71 ($SD = 7.98$). Sixty-one

percent of the children was male. And 50% of the mothers and 40% of the fathers had finished second stage of primary education or lower secondary education at most. The sample of children with MBID further consisted of two groups: a problem behavior group ($n = 113$) and a comparison group ($n = 71$). The problem behavior group consisted of children who were receiving treatment for their MBID and externalizing behavior problems in day care treatment centers in the Netherlands. In the Netherlands, there are 21 special treatment centers for children with MBID and externalizing behavior problems. Twelve of these participated in this study and were geographically distributed across the Netherlands. All of the 21 treatment centers require the children they treat to have an IQ between 55 and 85 and severe adjustment problems in one or more social contexts with impairments of daily functioning, due to their intellectual disability and externalizing behavior problems.

The children in the problem behavior group were selected for inclusion in the present study when they scored above the 90th percentile on one or both of the two subscales Aggression and Rule-Breaking from the Dutch Child Behavior Check List (CBCL, see Measures). Either the children's parent(s) or the day care staff completed the selection checklist. The problem behavior group was also part of the pre-intervention assessment of a randomized controlled trial aimed at assessing the effectiveness of a parent-child intervention to reduce externalizing problem behavior in children with MBID (Schuiringa, Van Nieuwenhuijzen, Orobio de Castro, Lochman, & Matthys, 2014).

The comparison group consisted of children selected from five schools for special education. Each school is located near one of the participating treatment centers in the middle region of the Netherlands. The inclusion criterion for these schools is an IQ between 55 and 85. Children attending these schools may have mild behavior problems but children with severe externalizing behavior problems do not attend these special education schools. The children in the comparison group were selected for inclusion in the present study when they scored below the 90th percentile on both the Aggression and Rule-Breaking scales from the Teacher's Report Form (TRF, see "Measures" section).

We are aware that our definition of intellectual disabilities differs from that most often used for mild intellectual disabilities in the international literature (IQ 50/55–70). We adopted the broader definition of mild intellectual disabilities as used in the Netherlands (IQ 55–85). In the Dutch situation, individuals with borderline intelligence (71–85) with severe limitations in adaptive functioning are also included in the healthcare and special education system for individuals with mild intellectual disabilities. Children with mild intellectual disabilities or borderline intelligence with severe limitations in adaptive functioning are present in both of the settings from which we selected participants for the problem behavior group and comparison group. Moreover, the children with MID (IQ 55–70) did not differ significantly from the children with BID (IQ 71–85) on parenting, the parent-child relationship, and externalizing behavior, in the present study.

For both groups, further selection criteria for inclusion in our study included living at home with their parents or caretakers and fluency in the Dutch language for both the parents/caretakers and children. Individuals with active psychosis, visual impairment, or severe hearing problems were excluded from the study. In addition, children with autism spectrum disorders were excluded from the study because externalizing behavior problems was not their primary clinical issue and the parent-child relationship was expected to be different in families of children with autism spectrum disorders (Davis & Carter, 2008; Dumas, Wolf, Fisman, & Gulligan, 1991).

When possible, both parents participated in the study and jointly completed one set of questionnaires. When this was not possible the main caretaker was asked to complete the questionnaires. Of the participating children, 94% was of Dutch origin, 2.7% Antillean, 1.1% Surinamese, and 2.1% of some other origin. Of the participating parents/caretakers, 80% of the mothers was of Dutch origin, of the fathers 73% was of Dutch origin. The other main parental origins were Antillean (father 4.4%, mother 4.3%), Moroccan (father 5.5%, mother 3.8%), Turkish (father 6.0%, mother 2.7%), and Surinamese (father 3.8%, mother 2.7%). This distribution of ethnic background is representative of the Dutch population as a whole (Statistics Netherlands, 2012).

2.2. Procedure

The Dutch Medical Ethical Committee of the participating university approved the present study (CCMO nr 08/249). Written informed consent was obtained from each family. As already mentioned, children were initially selected on the basis of their scores on the CBCL or TRF, which the parents, care staff, or teachers completed as part of the selection procedure. Next, consent was obtained from the parents of the children initially selected for inclusion in the study by having the treatment institutions or schools send out a consent form accompanied by detailed information on the study. Institutions and schools sending information guaranteed parents' and children's privacy and anonymity, until parents granted permission to participate in the study. Assessment of the parents of the children in the problem behavior group was done during a home visit. Assessment of the parents of the children in the comparison group was conducted via telephone. For both groups the research assistant could thus provide explanation and assistance when necessary. Research assistants were given a guideline with synonyms for particular words and explanations of difficult words. This was done to ensure clear and consistent explanations of questionnaire items when a participant did not understand them. The research assistant posed the questions and recorded the answers on the questionnaire form. Appointments for assessment of the children were made with the teachers in both the problem behavior group and the comparison group at the respective schools. Each child individually completed two IQ subtests (see "Measures" section) in a quiet room at the child's school, with a research assistant present from the university. The teachers also completed a questionnaire with regard to the children's behavior. The questionnaire was returned by mail with good response rates: 80% for the teachers from the problem behavior group and

100% for the teachers from the comparison group. For parents, 100% of the questionnaires about child behavior, parenting behavior, and the parent–child relationship was completed, in both the problem behavior group and comparison group.

2.3. Measures

2.3.1. Externalizing behavior problems

Parents, care staff, and teachers completed either the Dutch version of the Externalizing Behavior subscale of the Child Behavior Checklist (CBCL, Achenbach & Rescorla, 2001; for the Dutch version see Verhulst, Van den Ende, & Koot, 1996) or the Externalizing Behavior subscale of the Teacher Report Form (TRF, Achenbach & Rescorla, 2001; for the Dutch version see Verhulst, Van der Ende, & Koot, 1997). Both versions assess the child's externalizing behavior problems during the preceding two months using a three-point scale (0 = *not true*, 1 = *somewhat or sometimes true*, 2 = *very true or often true*). The Dutch versions of the CBCL and TRF have been shown to have good reliability and validity for both children with average intelligence (Verhulst et al., 1996, 1997) and children with MBID (Dekker et al., 2002). In the present study, a Cronbach's alpha of .92 was obtained for the CBCL Externalizing Behavior subscale and .96 for the TRF Externalizing Behavior subscale. In our further analyses, the raw sum scores for the Externalizing Behavior subscales of the CBCL and TRF were used. For descriptive purposes only, T-scores for the Externalizing Behavior subscale of the CBCL and TRF were calculated using Dutch norms.

2.3.2. Parenting characteristics

The Dutch translation of the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996) was used to assess self-reported parenting behavior. We incorporated the following five scales from the APQ: Parental Involvement, Positive Parenting scale, Monitoring, Harsh Punishment, and Positive Discipline. For purposes of the present study, the items from Other Discipline Practices were combined to form the Positive Discipline scale. Because the APQ does not include a subscale on rules, we also assessed parenting behavior using the Rules subscale from the Dutch version of the Ghent Parental Behavior Scale (GPBS; Van Leeuwen & Vermulst, 2004). We further augmented the APQ Harsh Punishment scale with items from the GPBS Physical Punishment subscale; pooled together these items formed the Physical Punishment scale, which we then used in addition to the other scales from the APQ.

Parents rated the frequency of a particular parenting behavior along a five-point Likert scale ranging 0 = *never*, 1 = *almost never*, 2 = *sometimes*, 3 = *often*, 4 = *always*. The Parental Involvement scale has 10 items (e.g., 'You volunteer to help with special activities that your child is involved in'). The Positive Parenting scale consists of 5 items (e.g., 'You tell your child that you like it when he/she helps out around the house'). The (poor) Monitoring scale consists of 9 items (e.g., 'You get so busy that you forget where your child is and what he/she is doing'). The Positive Discipline scale consists of 6 items (e.g., 'You give your child extra chores as punishment'). And the Rules scale with 7 items (e.g., 'I teach my child to obey rules'). The combined Physical Punishment scale consists of 6 items (e.g., 'You slap your child when he/she has done something wrong'). For part of the data analyses, the Parental Involvement, Positive Parenting scale, Monitoring, Physical Punishment, Rules, and Positive Discipline scales were aggregated to create a Total Positive Parenting measure. The Physical Punishment scale will be used in these analyses as a scale to represent negative parenting behavior.

Adequate reliability and validity for the APQ has been shown in numerous studies (e.g., Shelton et al., 1996). In the current study, the internal consistencies for the relevant scales varied from moderate to high; Parental Involvement had a Cronbach's alpha of .69, Positive Parenting scale $\alpha = .71$, Monitoring $\alpha = .67$, and Positive Discipline $\alpha = .52$. The Dutch version of the GPBS has been shown to have acceptable to good reliability and validity for the general population (Van Leeuwen & Vermulst, 2004). In the present study, the Rules scale showed a Cronbach's alpha of .85. The pooled Total Positive Parenting scale showed high reliability with a Cronbach's alpha of .82. The combined Physical Punishment scale with items from both the APQ and GPBS was sufficiently reliable as indicated by a Cronbach's alpha of .75. The Physical Punishment scale was nevertheless strongly skewed, and therefore dichotomized for further analyses: Parents who reported never using physical punishment were assigned a score of 0, parents who reported almost never using physical punishment or using it more often were assigned a score of 1.

2.3.3. The parent–child relationship

The parents also completed the Dutch version of the Parenting Stress Index (PSI; Abidin, 1983, [Nijmeegse Ouderlijke Stress Index] (NOSI); De Brock, Vermulst, Gerris, & Abidin, 1992). This measure assesses the degree of acceptance of the child, parental sense of competence, and closeness to the child. The information from the following three scales was analyzed for the present study: the Acceptance scale which has 7 items (e.g., 'It irritates me that my child doesn't learn as quickly as other children'), the Sense of Competence scale which has 7 items (e.g., 'I often feel that I cannot handle things'), and the Attachment (i.e., Closeness) scale which has 5 items (e.g., 'I expected to have closer feelings for my child'). The scores on the three PSI subscales were aggregated to create a total 'Parent–Child Relationship' score for the use in part of the data analyses. For all of the items, the parents responded along a four-point scale ranging from 1 (= *strongly disagree*) to 4 (= *strongly agree*). For purposes of the present study, the scoring of the PSI items was reversed and could thus range from 1 (= *strongly disagree*) to 4 (= *strongly agree*). The reliability and validity of the Dutch version of the PSI have been shown to be sufficient (De Brock et al., 1992). The internal consistencies were sufficient to high in the current study (Acceptance $\alpha = .78$, Sense of Competence $\alpha = .83$, Attachment $\alpha = .69$, and Parent–Child Relationship $\alpha = .89$).

2.3.4. Intelligence

An estimate of the participants' intelligence was obtained using the Vocabulary and Block Design subtests from the Dutch version of the Wechsler Intelligence Scale (WISC-III, Kort et al., 2005; Silverstein, 1970a). These two subtests taken together are known to correlate most strongly ($r = .86$) with the complete WISC-III (Silverstein, 1970b). They thus provide an accurate estimate of children's overall intelligence. The WISC-III subscales have also been successfully used to estimate intelligence in children with MBID (e.g. Van Nieuwenhuijzen & Vriens, 2012).

2.4. Data analyses

To determine how the children in the problem behavior group differed from the children in the comparison group with regard to externalizing behavior, parenting behavior, and the parent–child relationship, univariate analyses of covariance (ANCOVA) were conducted, with Group as the independent variable (problem behavior group, comparison group). Externalizing Behavior problems on the CBCL and TRF, the Parenting Behavior subscales, and the Parent–Child Relationship (acceptance, self-competence, and closeness) were the dependent variables, and gender and SES as the covariates.

Hierarchical linear multiple regression (HLMR) analyses were next performed to investigate the unique contributions of parenting behavior and the parent–child relationship to the variation in externalizing child behavior. In the regression analyses the total group of children with and without externalizing behavior were included together, in order to maximize the amount of variance. Only the aggregated Total Positive Parenting scale, Physical Punishment scale (representing negative parenting), and pooled Parent–Child Relationship scores were used in order to limit the number of statistical tests and thereby prevent capitalization of chance. To investigate the unique contribution of Total Positive Parenting to externalizing behavior reported by the *parents*, the CBCL Externalizing Behavior subscale was used as the dependent variable. Gender was entered in step 1, followed by the Parent–Child Relationship in step 2, and Total Positive Parenting in step 3 of the regression model.

To investigate the unique contribution of physical punishment to externalizing child behavior according to the *parents*, once again the CBCL Externalizing Behavior subscale was used as the dependent variable. Gender was entered in step 1, followed by again the Parent–Child Relationship in step 2, and Physical Punishment in step 3 of the regression model.

In order to investigate the unique contributions of parenting behavior and the parent–child relationship on externalizing child behavior when judged by the *teachers*, the same analyses were conducted as for the parental judgment of externalizing behavior, but now, with the TRF Externalizing Behavior scale used as the dependent variable. IQ and SES were entered in addition to Gender in step 1 because all of these variables were found to relate to TRF Externalizing Behavior in an initial set of bivariate correlation analyses (see Table 2).

To examine whether variance in parenting behavior depended on both child behavior and the parent–child relationship, we again conducted a series of HLMR analyses. However, Total Positive Parenting was now included as the dependent variable while Externalizing Behavior and Parent–Child Relationship were entered in alternative orders into the regression model. Age and SES were entered as covariates in step 1.

Given that Physical Punishment was a dichotomized scale, logistic regression analyses were used to test for group differences after the inclusion of covariates and to identify the unique contribution of Externalizing Behavior and the Parent–Child Relationship to the use of Physical Punishment.

3. Results

3.1. Preliminary analyses

The demographic characteristics of the problem behavior and comparison groups are summarized in Table 1. There were no significant differences between groups with regard to age or IQ. However, the groups differed with regard to SES and gender, with 83 boys and 30 girls in the problem behavior group, but only 31 boys and 40 girls in the comparison group ($\chi^2 = 17.12, p < .001$). In addition, the families in the problem behavior group had a significantly lower SES than the families in the comparison group. SES and gender were therefore included as covariates in the ANCOVA's conducted to compare the groups with MBID and either accompanying externalizing behavior problems or no such accompanying problems.

As expected on the basis of the selection procedure for the participants, the children in the problem behavior group had significantly more externalizing behavior problems according to both parent and teacher reports (see Table 1).

3.2. Group differences

As can be seen from Table 1, parenting behavior in the problem behavior group differed from parenting behavior in the comparison group. The parents in the problem behavior group reported the use of more Positive Discipline but also Physical Punishment and less Involvement, less Positive Parenting, and less Monitoring, than the parents in the comparison group. The groups did not differ significantly with regard to using Rules. The groups also differed with regard to the parent–child relationship. The parents in the problem behavior group reported a lower Sense of Competence, less Acceptance of the child, and less Closeness to the child than the parents in the comparison group (see Table 1).

Table 1
Means and standard deviations by group.

	Problem group M (SD)	Comparison group M (SD)	F	p	d
Age	12.46 (1.90)	12.31 (2.31)	0.25	.62	0.07
IQ	71.30 (8.03)	70.67 (7.63)	0.30	.59	0.08
SES (0–10)	4.24 (1.98)	5.35 (2.00)	13.69	<.001	0.56
CBCL T-score	68.21 (6.92)	52.97 (8.68)	135.54 ^b	<.001	1.86
TRF T-score	68.02 (9.96)	50.07 (7.56)	103.98 ^b	<.001	1.86
Involvement ^a	21.39 (5.42)	25.47 (4.36)	19.27	<.001	0.81
Positive Parenting scale ^a	14.15 (3.65)	15.56 (2.83)	4.06	.045	0.42
Monitoring ^a	29.88 (4.94)	31.99 (3.50)	9.54	<.001	0.47
Positive Discipline ^a	10.87 (3.69)	9.07 (3.88)	8.85	<.001	0.25
Physical Punishment ^{a,c}	0.43 (0.50)	0.21 (0.41)		.02	
Rules ^a	23.86 (4.20)	24.93 (4.23)	1.20	.27	0.48
Acceptance ^a	18.19 (4.40)	23.86 (4.23)	78.03	<.001	1.31
Sense of Competence ^a	19.88 (5.08)	24.35 (3.77)	39.85	<.001	0.97
Closeness ^a	15.89 (3.11)	18.70 (1.78)	40.88	<.001	1.05

Note: CBCL, Child Behavior Checklist, Externalizing Behavior; TRF, Teacher Report Form, Externalizing Behavior.

^a Controlled for SES and gender in analyses.

^b Raw scores were used to test for differences between groups.

^c Dichotomized variable, logistic regression was used.

3.3. Relations between parenting behavior, parent–child relationship, and externalizing behavior

To examine the relations between parenting behavior, the parent–child relationship, and externalizing child behavior, bivariate correlations were first computed. As can be seen from Table 2, parenting behavior was related to both the parent–child relationship and externalizing behavior problems according to both parents and teachers. As expected, Total Positive Parenting was associated with a positive Parent–Child Relationship and with fewer Externalizing Behavior problems. More positive parenting was thus associated with a better parent–child relationship and less externalizing behavior problems. Physical Punishment (negative parenting) was negatively associated with the Parent–Child Relationship and positively to Externalizing Behavior problems. A better Parent–Child Relationship was associated with less Externalizing Behavior problems according to parents and teachers. On the basis of these correlations, we next selected the variables for inclusion in regression analyses.

HLMR analyses were used to test whether a significant amount of the variance in externalizing behavior of the children as perceived by their parents or teachers could be explained by the Parent–Child Relationship over and above parenting behavior and vice versa (i.e., externalizing child behavior explained by parenting behavior independent of the parent–child relationship). HLMR analyses were also undertaken to determine if significant amounts of variance in parenting behavior could be explained by the parent–child relationship over and above externalizing child behavior and vice versa.

With regard to the possibly unique contributions of parenting behaviors and the parent–child relationship to externalizing behavior problems as perceived by the parents, a significant amount of variance in the CBCL Externalizing Behavior scores was accounted for the Parent–Child Relationship even after Gender and the parenting behaviors (Total Positive Parenting and Physical Punishment) were taken into consideration (i.e., entered into the regression model). However, Total Positive Parenting and Physical Punishment did *not* uniquely contribute to CBCL Externalizing Behavior scores once the Parent–Child Relationship was taken into consideration (i.e., entered into the regression model) (see Table 3).

When we next examined the possibly unique contributions of parenting behavior and the parent–child relationship to externalizing child behavior as perceived by the teachers, only the Parent–Child Relationship uniquely explained variance in the TRF Externalizing Behavior scores after control for Gender, SES, IQ, and parenting behaviors (Total Positive Parenting and

Table 2
Bivariate correlations between study variables.

	1	2	3	4	5	6	7	8	9
1. Total Positive Parenting	–								
2. Physical Punishment	–.10	–							
3. Parent–Child Relationship	.40**	–.36**	–						
4. Gender	.08	–.10	–.01	–					
5. Age	–.35**	–.02	–.15*	–.16*	–				
6. SES	.15	–.15*	.22**	–.03	.05	–			
7. IQ	.09	–.02	.04	–.03	–.11	.09	–		
8. CBCL	–.28**	.20**	–.68**	–.18*	.10	–.13	–.03	–	
9. TRF	–.23**	.17**	–.40**	–.32**	–.01	–.18*	–.18*	.49**	–

Note: CBCL = Child Behavior Checklist, Externalizing Behavior, TRF = Teacher Report Form, Externalizing Behavior.

* $p < .05$.

** $p < .01$.

Table 3

Results of hierarchical multiple regression analyses with Parenting Behavior and the Parent–Child Relationship as predictors of CBCL Externalizing Behavior.

Dependent	Step	Predictor	ΔR^2	β	<i>p</i>
CBCL Ext. Behavior	1	Gender	.03	-.17	.03
	2	Total Positive Parenting	.14	-.23	.002
	3	Physical Punishment		.26	<.001
		Parent–Child Relationship	.34	-.68	<.001
CBCL Ext. Behavior	1	Gender	.03	-.17	.03
	2	Parent–Child Relationship	.47	-.69	<.001
	3	Total Positive Parenting	.00	.01	.91
CBCL Ext. Behavior	1	Gender	.03	-.18	.01
	2	Parent–Child Relationship	.47	-.68	<.001
	3	Physical Punishment	.00	-.01	.90

Note: CBCL = Child Behavior Checklist.

Physical Punishment). Neither Total Positive Parenting nor Physical Punishment explained variance in the TRF Externalizing Behavior scores once the Parent–Child Relationship was taken into consideration (see Table 4). The parent–child relationship is thus associated with externalizing behavior problems from the perspectives of both parents and teachers even after controlling for specific parenting behaviors. The opposite, moreover, was not found to be the case: Once the parent–child relationship was taken into consideration, significant effects of positive parenting and physical punishment on externalizing child behavior were not found.

When we next examined the unique contributions of externalizing child behavior and the parent–child relationship to parenting behaviors, the parent–child relationship was found to be critical. After controlling for age, SES, and Externalizing Behavior according to both the parents and teachers, a significant amount of the variance in the Total Positive Parenting scores was explained by the Parent–Child Relationship. However, CBCL Externalizing Behavior and TRF Externalizing Behavior were *not* uniquely associated with Total Positive Parenting after control for the Parent–Child Relationship and the variables of age and SES (see Table 5).

Finally, when logistic regression analyses were conducted to examine the unique contribution of the parent–child relationship and externalizing behavior on using physical punishment, the Parent–Child Relationship significantly related to Physical Punishment ($OR = 0.93$, $p = .001$). Parents who experienced a less positive parent–child relationship used more physical punishment. However, neither TRF Externalizing Behavior ($OR = 1.01$, $p = .67$) nor CBCL Externalizing Behavior ($OR = 1.00$, $p = .99$) were uniquely associated with physical punishment. Once again, parenting practices were explained by the quality of the parent–child relationship over and above the externalizing child behavior.

4. Discussion

The first aim of the study was to examine differences in parenting behaviors and the parent–child relationship between families with children with MBID and externalizing behavior problems, and families with children with MBID and no such externalizing behavior problems. Both parenting behavior and the parent–child relationship were found to differ for the

Table 4

Results of hierarchical multiple regression analyses with parenting behavior and the parent–child relationship as predictors of TRF Externalizing Behavior.

Dependent	Step	Predictor	ΔR^2	β	<i>p</i>
TRF Ext. Behavior	1	Gender	.15	-.29	<.001
		IQ		.16	.05
		SES		-.21	.01
	2	Total Positive Parenting	.05	-.15	.05
		Physical Punishment		.13	.11
	3	Parent–Child Relationship	.11	-.40	<.001
TRF Ext. Behavior	1	Gender	.15	-.29	<.001
		IQ		.15	.05
		SES		-.21	.01
	2	Parent–Child Relationship	.15	-.40	<.001
	3	Total Positive Parenting	.00	-.02	.85
TRF Ext. Behavior	1	Gender	.15	-.29	<.001
		IQ		.14	.06
		SES		-.21	.01
	2	Parent–Child Relationship	.15	-.40	<.001
	3	Physical Punishment	.00	-.02	.76

Note: TRF = Teacher Report Form.

Table 5
Results of hierarchical multiple regression analyses with externalizing behavior and the parent–child relationship as predictors of Total Positive Parenting.

Dependent	Step	Predictors	ΔR^2	β	<i>p</i>
Total Positive Parenting	1	Age	.13	–.35	<.001
		SES		.13	.10
	2	TRF Externalizing Behavior	.07	–.10	.26
Total Positive Parenting		CBCL Externalizing Behavior		–.19	.03
	3	Parent–Child Relationship	.07	.37	<.001
Total Positive Parenting	1	Age	.16	–.37	<.001
		SES		.16	.02
	2	Parent–Child Relationship	.10	.33	<.001
Total Positive Parenting		CBCL Externalizing Behavior		–.03	.78
	3		.00		
Total Positive Parenting	1	Age	.13	–.34	<.001
		SES		.14	.08
	2	Parent–Child Relationship	.13	.37	<.001
Total Positive Parenting		TRF Externalizing Behavior		–.06	.44
	3		.00		

Note: CBCL, Child Behavior Checklist; TRF, Teacher Report Form.

families of children with MBID and externalizing behavior problems versus the families of children with MBID and no such problems. When the parenting behaviors and the parent–child relationship were compared between these groups, the parents of children with MBID and externalizing behavior problems reported less involvement, less positive parenting, less monitoring, more physical punishment, and more positive discipline than the parents of children with MBID and no externalizing behavior problems. These findings are in line with the findings of numerous studies of children with average intelligence, for whom – on the one hand – more positive parenting relates to lower levels of externalizing behavior problems (Amato & Rivera, 1999; Barnes & Farrell, 1992; Hoeve et al., 2009) and – on the other hand – physical punishment relates to more deviant behavior on the part of the child (e.g., Straus & Donnelly, 2001).

In addition, we found the parents of children with MBID and accompanying externalizing behavior problems to report a lower parental sense of competence, less acceptance of the child, and less closeness with the child than the parents of children with MBID but otherwise no externalizing behavior problems. These findings are in line with the findings of other research showing a lower sense of parenting competence and closeness in the families of children with externalizing behavior problems but average intelligence (Bosmans et al., 2006; Deković et al., 2003). Rohner and Britner (2002) similarly show acceptance of the child to be negatively related to externalizing behavior problems among children with average intelligence. Note, however, that we did not demonstrate causal relations between these factors. Both effects of externalizing behavior on parenting behavior and the parent–child relationship and vice versa seem likely, as such reciprocal effects are theoretically plausible and have been shown in longitudinal research for the children with average intelligence.

Partly in contrast to our expectation, however, more positive discipline was associated with higher levels of externalizing behavior problems. Both the items used in our questionnaire and the elicitation of positive discipline by externalizing child behavior may explain this discrepancy. The positive discipline scale of the APQ contains items on the use of disciplinary techniques (e.g., sending the child to his or her room, providing extra chores as punishment, allowing the child less than usual). However, the adequacy and consistency of the use of these disciplinary techniques is not assessed as part of the APQ. This means that parents who adequately use these disciplinary techniques (i.e., sparsely, consistently, and as part of a generally positive parenting approach) and parents who inadequately use these disciplinary techniques (i.e., frequently, unpredictably, and in the absence of a generally positive parenting approach) may *both* score high on the APQ positive discipline scale. It is also obviously possible that children who show more externalizing behavior problems simply elicit more discipline – including positive discipline (Floyd & Philippe, 1993). Longitudinal data is needed to confirm this explanation, and provide insight into the order of events related to occurrence of externalizing problem behavior and parenting behaviors and responses.

The second aim of the study was to further examine the relation between parenting behavior, the parent–child relationship, and externalizing behavior in children with MBID. In order to limit the number of statistical tests, we only used the aggregated Total Positive Parenting scale (a combination of involvement, positive parenting, monitoring, rules, and positive discipline), the physical punishment scale (representing negative parenting), and the aggregated parent–child relationship scale (a combination of sense of competence, acceptance, and closeness) to examine the second hypothesis of the present study. When the relations between parenting behavior, the parent–child relationship, and externalizing behavior in children with MBID were examined in more detail in a series of regression analyses, the parent–child relationship was found to be critical. Even though both positive parenting and physical punishment explained significant amounts of variance in externalizing child behavior scores for example, the parent–child relationship explained an additional amount. This pattern of findings was the same for both the parental and teacher assessments of the children's externalizing behavior problems, moreover. The importance of the parent–child relationship has been emphasized in studies of children with average intelligence (Bosmans et al., 2006; Deković et al., 2003). The parent–child relationship may be even more important for children with MBID as the parent–child relationship is likely to be taxed by the challenges of having a child with MBID (Baker et al., 1997; Didden, 2005).

Given the associations between parenting behavior and externalizing child behavior among children with MBID identified in our study, greater insight into the factors contributing to the use of these parenting behaviors and the occurrence of externalizing behavior is called for. While less optimal parenting is associated with externalizing behavior problems with MBID, variance in parenting behavior is primarily explained by the parent–child relationship. This means that in families with children showing similar externalizing behavior problems, differences in parenting behavior can be explained – at least in part – by the quality of the parent–child relationship. These findings support our expectation that parental responses to externalizing child behavior depend on not only the severity of the behavior, but also the degree to which the parent accepts the child, connects to the child and feels competent to cope with the child’s behavior and disability. These findings correspond to the findings of other research showing significant associations between self-efficacy and closeness with the child, and the parenting of children with average intelligence (Abidin, 1992; Bosmans et al., 2006; Deković et al., 2003). Taken together, the results of these studies and our own study emphasize the importance of the parent–child relationship (Deković et al., 2003). As already mentioned, the parent–child relationship may be particularly important in the families of children with MBID because acceptance of a child’s disabilities, but also feeling competent to parent a child with a disability can be hard. The parent of a child with MBID, for example, may perceive their parenting to be more flawed than that of other parents when their child with MBID shows more difficulties in his or her development.

4.1. *Strengths and limitations*

This is the first study that we know of to examine the associations between parenting behavior, the parent–child relationship, and externalizing child behavior among the important target group of children with MBID. We had a large number of families participate in our study and collected information on the children’s behavior from a variety of sources (i.e., from both parents and teachers). Despite these strengths, our study has a number of possible limitations and the results must therefore be interpreted with care.

First, the study was cross-sectional, which means that the directionality of the observed effects cannot be determined. From a theoretical point of view, it is possible that one or more of the observed associations between parenting behavior, the parent–child relationship, and externalizing child behavior may be bidirectional (Bell, 1968; Laird et al., 2003; Reitz et al., 2006; Sameroff & MacKenzie, 2003). Only longitudinal data will provide greater insight into the temporal ordering of events and probable direction of causality for the relation between parenting behavior, the parent–child relationship, and externalizing behavior problems in children with MBID. Experimental or intervention studies may then be undertaken to document that changes in parenting behavior can effectively decrease externalizing behavior problems among such children (Deković, Stoltz, Schuiringa, Manders, & Asscher, 2012).

A second possible limitation is that our measure of “parenting” was a self-report measure and thus based on subjective perceptions as opposed to objective measurement. In contrast, the possible bias that self-report can entail was avoided for the measurement of externalizing child behavior by also having the children’s teachers report on the children’s behavior. Given that the parents themselves reported the parenting behavior in our study, but teachers also reported externalizing behavior problems, the significant associations between the two measures cannot be explained by shared method variance. Nonetheless, replication of the present findings using more reliable documentation of parenting behavior (e.g., observation) is warranted in the future.

A third limitation is that slightly different procedures were followed for assessment of parents in the problem behavior group versus the comparison group. The data for the parents in the problem behavior group was collected face-to-face during a home visit. The data for parents in the comparison group was collected via telephone. In both cases, however, a research assistant reported the responses of the parent(s) and could provide previously agreed-upon explanations for most of the questions that could arise. In prior research, the responses to the face-to-face versus telephone administration of a questionnaire have been shown to have high internal consistency regardless of the method of administration, but also correlate highly across the different modes of administration (Weinberger, Oddone, Samsa, & Landsman, 1996). It can thus be assumed that the face-to-face and telephone versions of a measurement instrument are equivalent (Wells, Burnam, Leake, & Robins, 1988). A fourth possible limitation concerns a lack of unique contribution for externalizing child behavior in parenting behavior and the parent–child relationship in the regression analyses, which might be due to shared variance of the parent–child relationship and externalizing child behavior variables. Teacher reports with regard to externalizing child behavior were included to partly avoid this limitation.

Finally, it should be noted that the parent–child relationship subscales were recoded. The original items were stated negatively (e.g., ‘It irritates me that my child doesn’t learn as quickly as other children’) while the concepts of interest in this study were formulated positively (e.g., acceptance). We are aware that the absence of something negative (e.g., rejection) does not necessarily indicate the presence of the opposite (e.g., acceptance). In order to facilitate interpretation of the parent–child relationship scales used in our study, however, we nevertheless opted for recoding and thus a positive formulation of the scale names.

4.2. *Implications for research and practice*

The family characteristics examined in our study are obviously not the only factors of relevance for externalizing behavior problems in children with MBID. In future research, an expanded combination of child, parental, and environmental factors

should be considered. Drawing upon the present results, the mediation of the relation between parenting behavior and externalizing child behavior by the parent–child relationship should be examined. Such mediation analyses require longitudinal and/or experimental data, however.

The present finding that parenting behavior and the parent–child relationship clearly relate to the externalizing behavior of children with MBID suggest that an intervention aimed at the improvement of parenting skills and the parent–child relationship for children with such problems may be effective. The present findings indicate the importance of attending to the parent–child relationship in such a parenting intervention. Increased positive parenting and decreased physical punishment will presumably still be useful, as both of these can contribute to a more positive parent–child relationship. The provision of information on a child's disability and the behavioral difficulties that can be expected to arise in connection with such a disability may also help parents accept their child's disability and any accompanying behavior problems – including externalizing behavior problems. Intervention trials are needed to empirically test whether intervening on parenting behavior and the parent–child relationship can actually reduce externalizing behavior problems of children with MBID (Deković et al., 2012; Schuiringa et al., 2014).

4.3. Conclusion

The results of the present study extend our knowledge of parenting behavior and the parent–child relationship in relation to externalizing behavior of children with MBID. The parenting behavior and the parent–child relationship in families of children with MBID and accompanying externalizing behavior problems differed significantly from the parenting behavior and parent–child relationship in the families of children with MBID and no such accompanying problems. The present results also highlight the importance of the parent–child relationship in the families of children with MBID – both for externalizing child behavior and parenting behavior. Promising directions for parenting interventions to prevent or reduce externalizing child behavior problems among children with MBID are indicated.

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