Children with emotional and behavioral disorders in special education: Placement, progress, and family functioning

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Impact of Family Functioning on Classroom Problem Behavior of Children with Emotional and Behavioral Disorders in Special Education

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Abstract

This study examined the relation between family functioning and classroom problem behavior of children with emotional and behavioral disorders receiving special educational support. To this end, the Teachers' Report Form and the Family Questionnaire were completed for 84 children (*M* age of 9.8 years) two times with a time-lag of 11 months. Cross-lagged path analyses showed that internalizing and externalizing problem behavior in the classroom were stable over time, just as poor family functioning. Continuity of (1) poor communication, (2) discordant partner relationship, and (3) lack of social support were strongly associated with future total problem behavior in the classroom. Furthermore, parental responsiveness to a child's needs was associated with lower future total problem behavior. Opposed to what was expected, a direct association was found between externalizing behavior in the classroom and future poor family functioning. Implications of these findings for future research and practice are discussed.

Introduction

Children with emotional and behavioral disorders (EBD) often experience difficulties that limit adequate functioning in a regular school setting, such as problems with social adaptation, concentration, and motivation (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004, Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). As a result, they generally require special educational services or placement in a special educational setting tailored to their needs. The special educational support aims to improve classroom problem behavior and academic achievement through the use of pedagogical strategies and adapted learning instructions. However, due to the complexity and severity of the behavioral problems displayed by children with EBD, providing optimal support remains a challenge for educators and program makers. To be able to better attune the support to the educational needs of this population, a thorough understanding of factors that induce and maintain problem behavior is required. A possible approach to improving this understanding is to examine etiological factors related to the development of problem behavior.

Nowadays it is widely acknowledged that children's problem behavior is the result of the interplay between child and contextual factors. According to Bronfenbrenner's ecological model, development is not an isolated process, but occurs within and is affected by the environments in which children spend their time such as the nuclear family, the family network, and school (Bronfenbrenner, 1986; 2005). For younger children the principal environment in which development takes place is the family context. Unfavorable family factors can influence children's development in a negative manner and become risk factors for the manifestation and persistence of problem behavior. For example, adverse family circumstances have been repeatedly shown to affect the development of externalizing behavioral problems in children such as aggression and oppositional defiant behavior, as well as internalizing behavioral problems such as anxiety and depression (Fergusson, Lynskey, & Horwood, 1996; Loeber & Hay, 1997; Nelson, Stage, Dupoping-Hurley, Synhorst, & Epstein, 2007; Rae-Grant, Thomas, Offord, & Boyle, 1989). Also, evidence has been found for the contributing role of poor family functioning to the reinforcement of psychopathology (e.g., Prange, Greenbaum, Sliver, & Friedman, 1992). With regard to children with EBD receiving special educational support, research results indicate that they are significantly more likely to live in families in which there are several risk factors associated with the development of problem behavior such as unemployment, a low educational level, or divorced parents, than children with other disabilities or typically developing children (Wagner et al., 2005). The families of children with EBD are further characterized by high rates of parental mental health needs and parental stress, and by receiving little social support (Baker-Ericzén, Hurlburt, Brookman-Frazee, Jenkins, & Hough, 2010).

Another principle of the ecological model is that developmental processes occurring in various environments are mutually dependent, which suggests that problem behavior in one environment can transfer to another, for example from home to school and vice versa (Bronfenbrenner, 1986; Brown-Wright, Tyler, Graves, Thomas, Stevens-Watkins, & Mulder, 2011; DiLalla & Mullineaux, 2008; Sameroff, 2000). A way in which a child's behavior in an educational setting can be affected by poor family functioning is through coercive interactions. Negative interaction between children and caregivers can reinforce maladaptive behavioral responses. Such coercive interactions can then be generalized to a classroom setting with teachers and peers, in which the maladaptive behaviors may escalate to more severe disruptive behavioral problems, especially when there are classmates with behavioral problems (Kellam, Ling, Merisca, Brown, & Ialongo, 1998; Patterson, 2002).

When interpreting the findings presented above within the theoretical framework of the ecological model, we may hypothesize that the unfavorable family factors reported for families of children with EBD in special education will affect the extent to which problem behavior is displayed in the classroom. Identification of the relation between poor family functioning and classroom problem behavior within this population, in particular the contributing role of poor family functioning regarding the continuity of classroom problem behavior, is highly relevant for professionals who support and teach these children in special educational settings. If such a mechanism indeed is present, it would counteract the support provided to children with EBD by the special educators during the daytime at school, and diminish the effectiveness of the special educational interventions. Therefore, such knowledge may provide better understanding of the origins and complexity of classroom problem behavior and family factors that contribute to its continuity, and can be used to improve support programs aimed at reducing classroom problem behavior. Outcomes for children with EBD receiving special education are generally quite worrisome due to the excesses of problem behavior and difficulties with social adaptation (Landrum, Tankersly, & Kauffman, 2003), which stresses the need for optimal support.

However, for this specific population studies examining family factors related to continuity of classroom problem behavior are virtually unavailable. Several studies have been conducted that focused on continuity of problem behavior and factors that contribute to continuity with other populations and/or in other contexts (e.g. Burke, Pardini, & Loeber, 2008; Campbell, 1994; Fergusson et al., 1996; Haapasalo & Tremblay, 1994; Herring et al., 2006; Huh, Tristan, Wade, & Stice, 2006; Lyons-Ruth, Alpern, & Repacholi, 1993). Findings from these studies indicate that negative family factors are important predictors of problem behavior at follow-up. However, when it comes to determining the influence of family functioning on continuity of classroom problem behavior of children with EBD in special education, these earlier studies have a number of limitations. For example, research usually focuses on problem behavior in a family context

rather than a classroom context. Studies on the relation between family functioning and classroom problem behavior mainly concentrate on behavior in preschools or in regular classrooms, instead of in special educational settings. Regular and special educational contexts are not merely comparable, because special educational settings involve specialized learning environments and support programs aimed at behavior amelioration. Furthermore, due to recruitment in regular school settings, the samples used in earlier research mainly consisted of high-risk children from the general population with elevated levels of problem behavior. Findings from previous research are therefore not generalizable to clinical samples of children with EBD who are typically vulnerable to developing persistent problem behavior. Therefore, considering the pedagogical climate of special educational contexts and the characteristics of children with EBD and their families, the influence of family functioning on problem behavior displayed by children with EBD in the classroom might be different from the results found in earlier studies into this topic examining other educational contexts and other populations.

We found only one study focusing on the direct relation between family factors and classroom problem behavior displayed by children with EBD in special education. Miller et al. (2006) examined this relation for children diagnosed with ADHD and found a positive association between both constructs. However, they only analyzed aggressive behavior and the measured family factors were static family factors, namely number of parents and siblings in the home, and history of parental aggression. Such static variables are important for the early identification of children at risk for negative developmental outcomes, but generally cannot serve intervention purposes. Also, due to the cross-sectional design direction of effects could not be addressed in this study.

Therefore, the aim of our study was to extend knowledge about the relation between poor family functioning and continuity of classroom problem behavior to include children with EBD in a special educational setting. In order to provide a basis for intervention models, we determined directional associations between poor family functioning and continuity of classroom problem behavior by using a longitudinal design with cross-lagged path analyses as a modeling technique. Analyses were conducted for total problem behavior, and for externalizing and internalizing problem behavior separately.

To enhance the practical relevance of the study findings, only dynamic variables that can be influenced by interventions have been included in the study. On the basis of research identifying aspects of poor family functioning that have been found to be highly predictive of children's problem behavior, the following five aspects were selected: disturbed parent-child communication (Bronfenbrenner, 2005; Burke, Loeber, Lahey, & Rathouz, 2005), poor parental responsiveness (Lindahl, 1998; Stormshak, Bierman, McMahon, & Lengua, 2000), inadequate family organization (Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Haapasalo & Tremblay, 1994), a lack of social support (Vance, Bowen,

Fernandez, & Thompson, 2002), and a discordant relationship between parents (Gilman, Buka, Kawachi, & Fitzmaurice, 2003; Spence, O'Callaghan, Williams, Najman, & Bor, 2002).

We formulated the following two research questions: (1) Does family functioning affect classroom problem behavior among children with EBD in special education? (2) If this is found: which individual aspects of poor family functioning show the strongest associations with classroom problem behavior?

Method

Procedure

Data were collected in an urban part of the Netherlands, at special schools and at regular schools that provide support for children with EBD with special educational needs. Parents of 4- to 12-year old children who receive this support were requested to participate in the study by filling in questionnaires which they could return to Leiden University. Special schools connected to residential facilities were excluded from the sample. Parental consent was obtained for teachers to provide information about their children. The teachers were asked to fill out some questionnaires. Eventually, at Time 1 (T1) questionnaires had been filled out by parents and teachers for 209 children.

For the follow-up survey (T2: Time 2), 168 parents once again received a request to participate in the study and to permit teachers to fill out questionnaires about their children. Children who no longer attended schools, for reasons such as having moved or having graduated, and children who no longer lived at home because of placement in a residential facility or foster family were excluded. Eventually, 84 sets of questionnaires were completed by both parents and teachers. The surveys took place approximately half-way through the school year (mean interval between surveys 11 months), which resulted in two different teachers rating each child's behavioral functioning, so that teacher bias was reduced.

Participants

Our sample consists of 84 children (85 % boys) with EBD, for whom both parents and teachers provided information at T1 and T2. To be eligible for special education in the Netherlands, children have to meet specific criteria designed by the Dutch government. If they do, they are entitled to special educational support within the cluster that serves their specific disability. Subsequently, parents decide in consultation with teachers whether this support will be provided in a special school or in a regular school. Of the children in the sample, 29 % received special educational services in a regular school, and 71 % in a special school. All children met the criteria of the cluster serving children with EBD, which are as follows: (a) a developmental, behavioral, and/or emotional disorder according to the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition, Text Revision

(DSM-IV; American Psychiatric Association (APA), 2000) accompanied by (b) serious impairments preventing attendance of regular education, deficiencies which (c) the continuum of regular educational care cannot handle without additional help (Ministerie van OCW [Ministry of Education], 2006). Examples of serious impairments are relational problems with classmates and/or teachers, being a danger to others and/or oneself, and severe motivational and attention problems. In addition, problems characteristic of the diagnosed disorders should not be limited to the school environment alone, but must also be present at home and/or during leisure activities. Disorders were formally diagnosed by a qualified clinician. Detailed information about clinical diagnoses, psychometric tests, and main characteristics were obtained by examining the children's assessment reports. These assessment reports had been drawn up by school psychologists and used by a selection board to determine eligibility for special educational support. Of the children in the sample, 15 % were diagnosed with attention deficit hyperactivity disorder (ADHD), 56 % with autism spectrum disorder (ASD), 6 % with oppositional defiant disorder (ODD) or conduct disorder (CD), 3 % with anxiety disorder, and 20 % with comorbid disorders.

Table 1 lists the main characteristics of the children in the sample. Socio-economic status (SES) is represented by the continuous variable Years of Education, which was assessed by calculating the highest number of years of education of the caregivers in the household – primary school included. The Wechsler Intelligence Scale-Revised (WISC-R; Van Haasen et al., 1986) was used to measure intelligence. Assessments were completed by a qualified clinician, as part of the admission procedure for special education.

Table 1
Main Characteristics of the Children in the Sample (N = 84)

	M	*SD*	Min	Max
Age	9.8	1.78	5.9	13.6
IQ	94.2	15.59	58	137
Years of Education Caregivers (SES)	12.5	3.19	8	17

Special educational support only covers care related to educational disabilities, and does not include additional treatment such as family support. For children with EBD this care is generally aimed at improving classroom behavior and provided by specialized teachers, teacher aides (paraprofessionals), learning support teachers, and regular school teachers trained and coached by professionals from special educational services. Support strategies include structuring of the learning environment, positive behavior reinforcement, contingency management, offering emotional support, and reinforcing social and communicative behavior. The way in which support strategies are used and the

particular focus of each individual program are set up and coordinated by school psychologists or behavioral scientists, and registered in IEPs (Individualized Education Programs).

Measures

The Dutch version of the Teachers' Report Form (TRF) (Verhulst, Van der Ende, & Koot, 1997) was used to obtain general problem behavior in the classroom as perceived by the child's teacher. The TRF provides a total scale score (Total Problems), two broad-band scale scores (Internalizing Problems and Externalizing Problems), and eight narrow-band subscale scores (Withdrawn, Somatic complaints, Anxious, Social problems, Thought problems, Attention problems, Delinquent behavior, and Aggressive behavior). The scale Internalizing problems comprises the first three of these subscales, and the scale Externalizing problems contains the last two subscales. Teachers rate problem behavior by answering 118 questions via a response set (0 = not true, 1 = sometimes true, 2 = very true or often true). For the Dutch version of the TRF satisfactory psychometric characteristics were reported (Cronbach's alpha > 0.87, test-retest reliability > .81) (Verhulst et al., 1997). The raw scores of the total scale and the broad-band scales measuring internalizing en externalizing behavior were used in the present study.

To gain insight into family functioning the Dutch Family Questionnaire was used (Scholte & Van der Ploeg, 2013), an instrument measuring children's quality of family life. The questionnaire contains five subscales, namely *Organization* (the strictness of rules that regulate the family interaction), *Communication* (the extent to which caregivers communicate in an open and harmonious way with their children), *Partner Relationship* (the quality of the relationship between caregivers), *Responsiveness* (the extent to which caregivers have an eye for the developmental needs of their children), and *Social Support* (the perceived amount of support from persons outside the family). Each subscale comprises nine items. These five subscales together constitute an overall scale measuring Total Family Functioning. Caregivers can mark each item on a five-point scale (1 = *strongly disagree,* 2 = *disagree*, 3 = *neutral*, 4 = *agree*, and 5 = *strongly agree*). The internal consistency of the subscales was measured with Cronbach's alpha and was found to be between 0.83 and 0.97. The raw scores on the subscales and the overall scale were used in the analyses.

Data Analysis

Descriptive statistics, independent sample *t*-tests, and Pearson correlations (*r*) were calculated using IBM SPSS Statistics 19. It was first examined with independent sample *t*-tests whether children in the study sample (*N* = 84) differed from children in the attrition group (*N* = 84) with respect to total family functioning, externalizing problem behavior, internalizing problem behavior, and total problem behavior (all measured at Time 1).

Additionally, for the study sample, Pearson correlations were calculated to examine relations between the main characteristics (age, gender, IQ, and SES), and family functioning and classroom problem behavior in order to determine which of these variables should be included as covariates in the subsequent path analysis. A correlation coefficient of .10 represents a small effect, .30 a moderate effect, and .50 a large effect (Cohen, 1992). Results showed no significant relations (p > .05) between the main characteristics and the variables measuring classroom problem behavior and family functioning at T1 and T2. No covariates were therefore included in the analyses.

Results from previous research indicate a reciprocal relationship between poor family functioning and problem behavior (Burke, 2008; Patrick, 2005). We therefore examined associations between variables directionally, using cross-lagged path analysis as a modeling technique. Analyses were conducted in EQS 6.1 (Bentler, 1995). With a cross-lagged panel model approach, reciprocal relations between classroom problem behavior and family functioning at two points in time can be examined simultaneously. An advantage of this approach is that it offers the opportunity to study these relations even when it is not possible to manipulate variables in a randomized experiment (Hoyle, 2011). Separate models were generated for total problem behavior, externalizing problem behavior, and internalizing problem behavior.

Our analyses followed a three step approach (see Bennett, 2005; De Jonge et al., 2001). In the first step the relation between classroom problem behavior at T1 and T2, and the relation between family functioning at T1 and T2 was examined in a stability model. In this model possible relations between classroom problem behavior and family functioning are left aside. These relations were examined in the second step, by means of the cross-lagged model (see Figures 1a, 2a, and 3). Where necessary, post-hoc modifications were performed, resulting in a final model with the most parsimonious fit. In the third step we examined the impact of family functioning on classroom problem behavior and/or vice versa by comparing the stability model and the cross-lagged model for best fit. For the comparisons between models we used the chi-square difference test.

Whenever a relationship was found between family functioning at T1 and classroom problem behavior at T2, an additional cross-lagged model was generated using the five separate subscales of family functioning at T1 instead of the over-all scale (see Figure 1b). In this way the importance of family functioning in the prediction of problem behavior at T2 could be determined more precisely.

All analyses were performed using maximum likelihood estimation. The degree of model fit was assessed with the chi-square goodness of fit statistic. This statistic, however, is strongly dependent on sample size and therefore not always a reliable indication of model fit. In the case of smaller samples the chances of a significant chi-square – representing poor model fit – are higher (Bentler, 1995). Therefore, the comparative fit index (CFI) and the root-mean-square error of approximation (RMSEA) were also

determined in order to evaluate model fit. Browne and Cudeck (1993) characterized a model with an RMSEA of .05 or less as a good fit and .10 or more as a poor fit. The CFI should be over 0.90 and ideally over 0.95 (Bentler, 1990).

In Figures 1, 2, and 3 the variables measured are represented by rectangles. One-way arrows represent a unidirectional effect, and two-way arrows represent covariation between variables. All path coefficients are standardized β coefficients. Non-significant paths are not displayed.

Results

Preliminary Analysis

No significant differences were found between children in the study sample and children in the attrition group on any of the examined variables. The results are presented in Table 2.

Table 2

Results of Independent Samples t-tests between Children in the Study Sample and Children in the Attrition Group

	Study sample (n = 84)	Attrition group (n = 84)		
	M (SD)	*M (SD)*	*t*	*p*
Total Family Functioning T1	69.32 (33.45)	78.53 (23.89)	1.423	.157
Internalizing Behavior T1	12.67 (7.77)	12.65 (8.88)	-.013	.989
Externalizing Behavior T1	13.19 (13.21)	17.41 (12.89)	1.785	.076
Total Problem Behavior T1	48.01 (23.47)	54.92 (25.53)	1.579	.117

Correlations between (the subscales of) family functioning and classroom problem behavior are summarized in Tables 3 and 4. Parent ratings on the different family functioning subscales were modestly to highly correlated, just as teacher ratings on the subscales for problem behavior. Family functioning at T2 was modestly correlated with total problem behavior, externalizing behavior, and internalizing behavior at T2, and also with total problem behavior at T1. On a subscale level, responsiveness, communication, and organization were significantly correlated with total problem behavior at T1 with a moderate effect.

Table 3

Means, Standard Deviations and Pearson Correlation Coefficients of the Variables (N = 84)

				T1				T2			
		M	*SD*	1	2	3	4	5	6	7	8
T1	Tot (1)	48.01	23.47	-							
	Int (2)	12.67	7.78	.56**	-						
	Ext (3)	13.19	13.21	.74**	.02	-					
	FF (4)	69.32	33.45	.21**	.08	.17	-				
T2	Tot (5)	45.11	24.73	.55**	.11	.52**	.12	-			
	Int (6)	12.81	7.41	.33**	.36**	.13	.14	.69**	-		
	Ext (7)	12.48	12.39	.57**	-.02	.76**	.13	.84**	.32**	-	
	FF (8)	81.22	21.84	.21	.09	.19	.46**	.29**	.33**	.25*	-

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

Note: Tot = Total problem behavior, Int = Internalizing behavior, Ext = Externalizing behavior, FF = Family functioning

Table 4

Means, Standard Deviations and Pearson Correlation Coefficients of the Subscales Measuring Family Functioning (N = 84)

				T1						T2
		M	*SD*	1	2	3	4	5	Tot	Tot
T1	Res (1)	11.98	4.21	-					.32*	.06
	Com (2)	20.60	7.31	.59**	-				.23*	.20
	Org (3)	13.76	5.05	.75**	.43**	-			.22*	.04
	Soc (4)	17.65	8.82	.39**	.47**	.36**	-		.02	.05
	Par (5)	15.39	6.36	.40**	.39**	.52**	.29**	-	.01	-.04

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

Note: Res = responsiveness, Com = communication, Org = organization, Soc = social support, Par = partner relationship, Tot = Total problem behavior

Model 1 - Family Functioning and Total Problem Behavior

The stability model for family functioning and total problem behavior revealed that family functioning at T1 and T2 are positively associated (β = .46, p < .05), just as total problem behavior at T1 and T2 (β = .57, p < .05). Thus showing that poor family functioning at T1 strongly predicts poor family functioning at T2, and that total problem behavior at T1 strongly predicts total problem behavior at T2. However, the model proved a poor fit to the data (χ^2 (4) = 11.498, p = .022, *CFI* = .845, *RMSEA* = .165). Cross-lagged path analyses (Figure 1a) resulted in a model that represented the data better and well (χ^2 (2) = 2.137, p = .343, *CFI* = .995, *RMSEA* = .032). This final model differed significantly from the stability model ($\Delta\ \chi^2$ (2) = 9.361, p = .009). All significant paths in the final model account for 37 % of the variance of the model predicting problem behavior at T2. The final model adds to the stability model that family functioning at T2 is positively associated with total problem behavior at T2 (β = .30, p < .05), indicating that poor family functioning at T2 predicts total problem behavior at T2. Because family functioning at T1 and T2 are also positively associated, this finding implies that continuity of poor family functioning promotes future total problem behavior. The cross-lagged model further showed that when the continuity in poor family functioning between T1 and T2 is taken into account, poor family functioning at T1 is inversely associated with total problem behavior at T2 (β = -.24, p < .05). This finding suggests that discontinuity in poor family functioning is a protective factor reducing future total problem behavior.

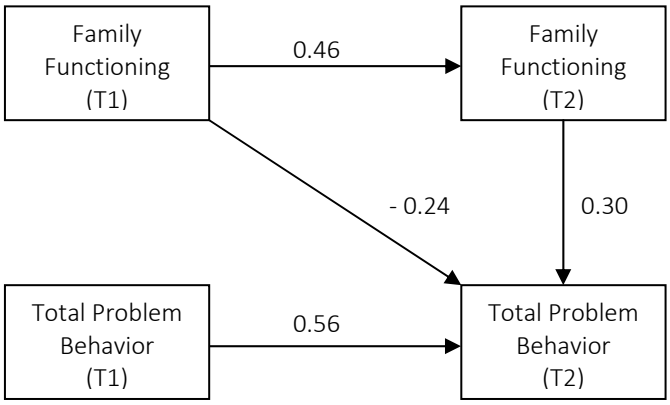

Fig. 1a Final model of Total Problem Behavior at T2 predicted by Family Functioning at both T1 and T2, and Total Problem Behavior at T1. All drawn paths are significant.

To explore the association between family functioning at T1 and problem behavior at T2 in greater detail, a cross-lagged model was analyzed which included the separate subscales of family functioning at T1 instead of the over-all scale (Figure 1b). This model fitted the data

well (χ^2 (6) = 5.260, p = .628, *CFI* = 1.000, *RMSEA* = .000). Poor communication (β = .34, p < .05), poor partner relationship (β = .43, p < .05), and lack of social support (β = .31, p < .05) at T1 are positively associated with poor family functioning at T2. This indicates that these three aspects of poor family functioning are risk factors promoting future poor family functioning. As family functioning at T2 is positively associated with total problem behavior at T2 (β = .28, p < .05), these risk factors also promote future problem behavior. Furthermore, responsiveness is inversely associated with total problem behavior at T2 (β = -.29, p < .05). This suggests that increased responsiveness over time is a protective factor reducing future problem behavior. No significant path was found for organization. The final model accounted for 38 % of the variance.

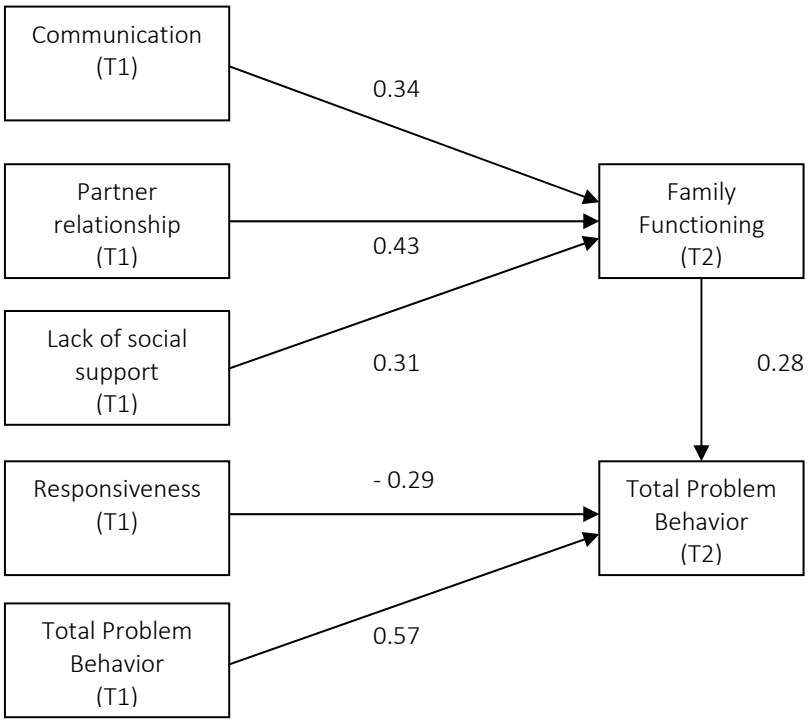

Fig. 1b Final model of total problem behavior at T2 predicted by family functioning at T2, and responsiveness and total problem behavior at T1. All drawn paths are significant.

Model 2 - Family Functioning and Internalizing Problem Behavior

Apart from the association between family functioning at T1 and T2 that was reported in Model 1 (β = .46, p < .05), the stability model with internalizing problem behavior also showed a positive association between T1 and T2 (β = .42, p < .05). The model proved a poor fit to the data (χ^2 (4) = 6.525, p = .163, *CFI* = .920, *RMSEA* = .093).

Cross-lagged path analyses (Figure 2) resulted in a model that represented the data well (χ^2 (2) = .514, p = .773, *CFI* = 1.000, *RMSEA* = .000). All significant paths in the model account for 23 % of the variance of the model predicting internalizing problem behavior at T2. This final model differed significantly from the stability model (Δ χ^2 (2) = 6.011, p = .049). No significant cross-lagged paths were found. However, poor family functioning at T2 is positively associated with internalizing problem behavior at T2 (β = .23, p < .05). Taking into account the association between poor family functioning at T1 and T2, the model suggests that continuity of poor family functioning contributes to future internalizing problem behavior. Because no significant path was found between family functioning at T1 and internalizing problem behavior at T2, an analysis of a cross-lagged model which included the separate subscales of family functioning at T1 was not performed.

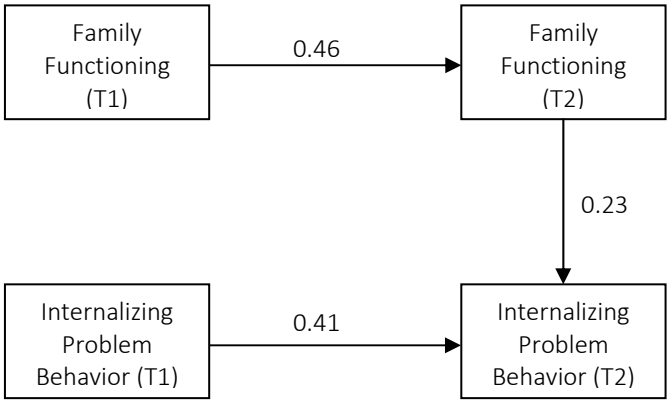

Fig. 2 Final model of internalizing problem behavior at T2 predicted by family functioning at T2 and internalizing problem behavior at T1. All drawn paths are significant.

Model 3 - Family Functioning and Externalizing Problem Behavior

Apart from the found association between family functioning at T1 and T2 that was reported in Model 1 (β = .46, p < .05), the stability model with externalizing problem behavior also showed a strong positive association between T1 and T2 (β = .76, p < .05). The model proved a poor fit to the data (χ^2 (4) = 8.976, p = .067, *CFI* = .936, *RMSEA* = .134). Cross-lagged path analyses (Figure 3) resulted in a model with acceptable fit (χ^2 (3) = 4.446, p = .217, *CFI* = .981, *RMSEA* = .084). The final model differed significantly from the stability model (Δ χ^2 (1) = 4.530, p = .033).

In contrast with the previous models, no significant paths were found between family functioning at T1 or T2 and externalizing problem behavior at T1 or T2. However, when the continuity of externalizing behavior between T1 and T2 is taken into account, it

was found that externalizing problem behavior at T1 is positively associated with poor family functioning at T2 (β = .22, p < .05). This suggests that externalizing problem behavior in the classroom contributes to future poor family functioning. Together with the significant paths found in the stability model, this path accounted for 57 % of the variance of the model predicting family functioning at T2. Because no significant paths were found between family functioning and externalizing problem behavior, an analysis of a cross-lagged model which included the separate subscales of family functioning at T1 was not performed.

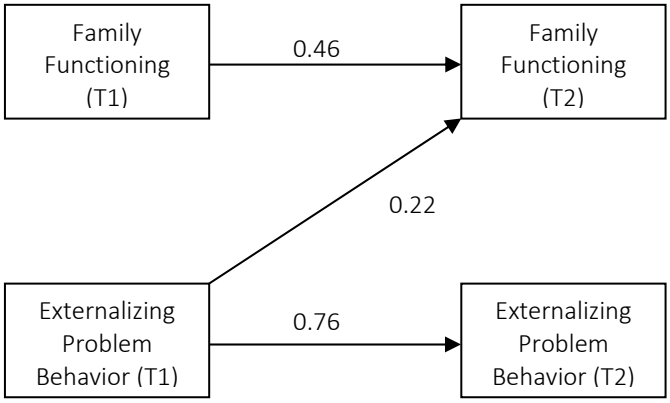

Fig. 3 Final model of family functioning at T2 predicted by externalizing problem behavior at T1. All drawn paths are significant.

Discussion

The objective of our study was to examine the impact of poor family functioning on classroom problem behavior in children with EBD receiving special educational support. Because of the longitudinal design we were able to address direction of effects. This study will certainly add to the existing body of knowledge, for the relation between family functioning and future classroom problem behavior has never been examined for this specific population so far. A better understanding of this relation is of particular importance for professionals in special education supporting and teaching children with EBD, because such knowledge can be used to improve support programs aimed at reducing classroom problem behavior.

Our results have shown that classroom problem behavior at Time 1 can predict classroom problem behavior at Time 2. This relation was found for total problem behavior as well as for internalizing and externalizing problem behavior, with the strongest relation for externalizing problem behavior. These relations indicate that problem behaviors,

particularly externalizing behavior, to a certain degree are stable over time. Similar results were found in earlier longitudinal studies examining developmental courses of psychopathology, including externalizing and internalizing behavior (Englund & Siebenbruner, 2012; Hofstra, Van der Ende, & Verhulst, 2000; Mäntymaa et al., 2011). Although we did not measure the effectiveness of the special educational support provided for the children in our sample, our findings suggest that problem behavior is also relatively stable in a context aimed at improvement of such behavior. Furthermore, we found that family functioning between Time 1 and Time 2 was stable. This is consistent with findings reported in a follow-up study by Huh et al. (2006), in which measures of parental control and parental support were included to represent family functioning.

Subsequently, directional associations between poor family functioning and classroom problem behavior were examined for total problem behavior, internalizing behavior and externalizing behavior separately. For total problem behavior we found that continuity of (1) poor communication, (2) a discordant partner relationship, and (3) lack of social support were the aspects of poor family functioning that were most strongly associated with future manifestations of problem behavior. Furthermore, our model suggested that increased responsiveness to a child's needs can serve as a protective factor that may reduce future problem behavior. This finding is consistent with earlier literature reporting the positive effect of parental warmth and responsiveness in impeding the development of problem behavior (Bradley & Corwin, 2007; Wade et al., 2011). For internalizing behavior we also found that continuity of poor family functioning was associated with future problem behavior of this type. However, no significant cross-lagged paths emerged from the model.

The results for externalizing problem behavior were different than those for total problem behavior and internalizing problem behavior in the sense that we found a direct association between externalizing behavior and future poor family functioning instead of vice versa. A possible reason for this contrasting result could be the pervasive nature of externalizing behavior. As noted above, externalizing problem behavior is more stable than internalizing problem behavior, which indicates that it is more difficult to influence this type of problem behavior through environmental factors or interference. Support for our results can be found in earlier research, even though classroom problem behavior and family functioning were not examined specifically; the studies in question were aimed at exploring reciprocal relations between externalizing or disruptive problem behaviors and parenting behaviors such as communication, involvement, and discipline (Burke, Pardini, & Loeber, 2008; Huh et al., 2006; Stice & Barrera, 1995). Results from these earlier studies showed that changes in externalizing problem behavior have a greater influence on parenting behaviors than changes in parenting behaviors have on externalizing behavior, thereby illustrating the disruptive and pervasive character of externalizing behavior.

In conclusion, our results indicate stability over time of total, internalizing, and externalizing classroom problem behaviors as well as continuity of poor family functioning. Also, the findings confirm the notion of mutually dependent environments as described in Bronfenbrenner's ecological model (1986; 2005), as they indicate that poor family functioning can enhance future total problem behavior and internalizing problem behavior in the classroom, and that externalizing behavior problems at school can lead to poorer future family functioning.

Limitations and Future Directions

Our results have to be interpreted in the context of the study's limitations. First, the main focus was on the impact of family functioning on classroom problem behavior; therefore, there may have been other factors not included in the model that also influenced this behavior. For instance, other studies have indicated that the presence of learning problems in children with EBD is predictive of poor behavioral functioning in a school setting (Miller et al., 2006; Vance, Bowen, Fernandez, & Thompson, 2002). Also, the quality of the classroom climate has been found to be related to disruptive behavior in the classroom. Variables indicative of a good classroom climate are effective classroom management practices, teacher involvement, teacher support, and student engagement (Thomas, Bierman, Thompson, & Powers, 2008). Thomas et al. (2008) examined the impact of classroom climate on disruptive behavior in first grade. Their findings show that poor classroom quality increases the risk of aggressive-disruptive behavior at school when this behavior was exhibited at home prior to school entry. Results from other studies lead us to suspect that a variable of particular importance in this respect is the teacher-child relationship. Especially for children with externalizing and internalizing problem behaviors, teacher-child relationships characterized by closeness and relatively few conflicts reduce classroom problem behavior, and increase the likelihood of successful school adjustment (Baker, Grant, & Morlock, 2008; Buyse, Verschueren, Doumen, Van Damme, & Maes, 2008). In view of these results we recommend that future studies expand the predictive model used in our study by examining the influence of learning problems and the quality of classroom climate – with specific attention to teacher-child relationships – on problem behavior displayed by children with EBD in a special-education context.

Second, coercion theory (Patterson, 2002) and findings from previous research (Barth, Dunlap, Dane, Lochman, & Wells, 2004; Kellam et al., 1998) suggest that an increase of maladaptive behavior in the classroom is related to the presence of other children with problem behavior, in particular aggressive-disruptive behavior. Because of the relatively higher number of children with EBD in special schools, it is conceivable that the contribution of poor family functioning to the continuity of classroom problem behavior that we found for the children in our sample and vice versa could differ between special schools and regular schools. Unfortunately, we were unable to examine this

hypothesis in our study due to the small sample size which made differentiation between special educational settings not feasible. When studying the impact of family functioning on the continuity of classroom problem behavior, future research should therefore take into account the frequency and presence of other classmates with problem behavior in the classroom in different special educational settings.

Third, an advantage of our study was the longitudinal design which offers the opportunity to examine direction of effects. However, in order to make statements about the influence of family functioning on the developmental course of classroom problem behavior, a longitudinal study over a longer period than the span of one year we had in our study is necessary.

Practical Implications

Our research findings illustrate the importance of a two-component support strategy, involving the school as well as the family, to improve interventions and support provided to children with EBD in special education. In this respect more attention should be given to the development and persistence of externalizing problem behavior in the classroom, because of the finding that externalizing behavior adds to the continuity of poor family functioning. An important aspect that schools and educators should focus on when they provide support and design intervention models is the influence of the classroom context, specifically the possibility of coercive interaction patterns between children displaying disruptive behavior.

Combining home intervention with special educational support seems beneficial for several reasons. First, a number of researchers have reported improved efficacy of interventions aimed at reducing disruptive emotional and behavioral problems when the family was included (e.g., Baker-Ericzén et al., 2010; Haine-Schlagel, Brookman-Frazee, Fettes, Baker-Ericzén, & Garland, 2012). Second, our results suggest an undermining effect of poor family functioning on the efficacy of special educational support because of its influence on the continuity of total and internalizing problem behavior in the classroom. To improve family functioning and reduce negative effects on classroom problem behavior, home intervention should specifically focus on responsiveness, because we found this aspect of family functioning to be of particular influence on future total problem behavior.

Although families of children with EBD were found to have higher rates of poor family functioning (Baker-Ericzén et al., 2010; Wagner et al., 2005), this does not imply that all families with children with such disorders are in need of home intervention. However, for all children with EBD parental involvement in their education is important. Findings from previous studies show that when parents are involved in their child's education, children show improved behavior in school, socially as well as academically (Bulotsky-Shearer, Wen, Faria, Hahs-Vaughn, & Korfmacher, 2012; Fantuzzo, McWayne, Perry, & Childs, 2004). To reduce classroom problem behavior, schools should therefore invest in

the quality of the parent-teacher relationship and stimulate a higher involvement of parents in the educational process, especially considering the finding that families of children with EBD are significantly less involved in their children's education than families of children with other disabilities (Wagner et al., 2005).