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Chapter 3

Mental Health and Associated Risk Factors of Dutch School-aged Foster Children Placed in Long-term Foster Care

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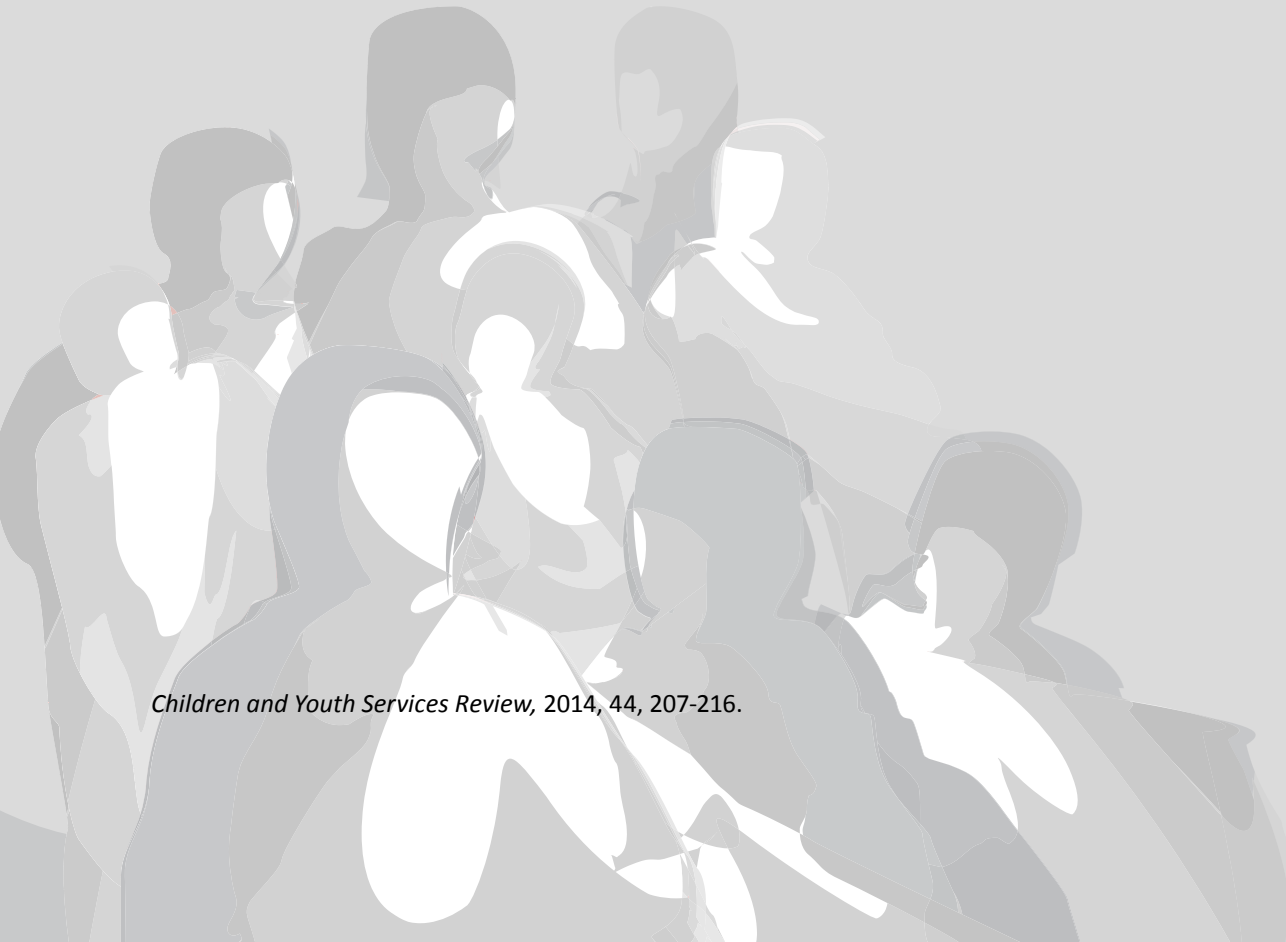

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Abstract

More than 20,000 children in the Netherlands live in foster families. The majority are in long-term foster family placements, which are intended to provide a stable rearing environment until the children reach adulthood. International studies have shown, however, that compared to children in the general population, foster children have more mental health problems and more negative developmental outcomes in their later life. Less is known about Dutch foster children, however. To fill this knowledge gap, the present study focused on the mental health of 239 foster children (aged 4–12) living in long-term placements in the Netherlands. Their behavior was assessed with the Strengths and Difficulties Questionnaire, which was completed by their foster parents. The results revealed a wide range of problem behavior (ranging from none to very serious problem behavior), and showed that a third of the children have total difficulty scores (TDS) in the clinical range. Higher TDS appear to have a positive univariate association with age of the foster child, age upon entering the current foster family, number of prior foster placements, non-kinship placement, and fostering experience of the foster parents. The more risk factors, the higher the TDS. These findings suggest the importance of the early detection of problems and potential risk factors in foster families, and the need to support a substantial number of foster children and foster families.

Introduction

In 2012, 20,949 children in the Netherlands were living in foster families (Foster Care Netherlands, 2013). The majority (64%) were in long-term foster family placements, which are intended to provide a stable rearing environment until the children reach adulthood (Strijker & Knorth 2009).[1] In the international literature, foster children are considered to be at increased risk of negative developmental outcomes in various areas, such as emotional and behavioral development, brain and neurobiological development, and social relationships with parents and peers (Bilaver, Jaudes, Koepke, & Goerge, 1999; Leve et al., 2012; Strijker, Zandberg, & van der Meulen, 2005).

Various studies confirm an elevated prevalence rate of mental health problems among foster children. A national survey carried out by the child welfare system in the United States among a representative sample of almost 4000 children (aged 2 to 14 years) and their caregivers, found that nearly two thirds (63.1%) of the children placed with non-relative foster caregivers, and more than one third (39.3%) of children placed in kinship foster care, scored in the clinical range on the Child Behavior Checklist (CBCL) (Burns et al., 2004). A survey carried out in Great Britain also found that foster children aged 5–17 years had significantly higher rates of psychiatric disorders than children living in private households (Ford, Vostanis, Meltzer, & Goodman, 2007). A study performed in Denmark found that 20% of the children in foster and residential care suffered from at least one psychiatric diagnosis, compared to 3% of the non-welfare children (Egelund & Lausten, 2009). Almost half of the children (48%) in care scored within the clinical range of the Strengths and Difficulties Questionnaire (SDQ), compared to 5% of the non-welfare children. Even higher scores were found in a study carried out in Scotland: 57% of the foster caregivers of children aged 5–16 years reported mental health problems within the clinical range of the SDQ (Minnis, Everett, Pelosi, Dunn, & Knapp, 2006). Two Australian surveys among school-aged foster children found that they had significantly higher scores on all the broadband scales and subscales of the CBCL compared to the community means (Sawyer, Carbone, Searle, & Robinson, 2007; Tarren-Sweeney & Hazell, 2006).

These elevated rates of mental health problems seem to persist in adulthood. Several international studies show that adults who were raised in foster families during their youth, tend to have more problems in various life domains – such as psychological and social functioning, education, employment, and delinquency – compared to adults who had an average childhood (Barth, 2005; Dumaret et al., 1997; Minty, 1999; Pecora et al., 2006; Reilly, 2003; Vinnerljung et al., 2006).

1 The policy on and legal definitions of children in foster care differ across countries. In the Netherlands, long-term foster family care is based on a court order or is chosen voluntarily by parents, comparable to permanency planning in such countries as the USA. Foster children in the Netherlands are usually not adopted; custody largely remains with the biological parents, unless the safety of the child is seriously threatened, in which case a special guardian of the Youth Care Agency is appointed.

A limited number of studies (Strijker, van Oijen, & Knot-Dickscheit, 2011; Strijker et al., 2005) have been conducted to assess the mental health of foster children in the Netherlands. These studies investigated the level of agreement between foster parents and foster children about problem behavior and how this is associated with the breakdown of a foster care placement (Strijker et al., 2011), and the relationship between behavior profiles of foster children, placement characteristics, placement outcome, and developmental outcome (Strijker et al., 2005). The aim of the present study was to gain more insight into the prevalence and backgrounds of the mental well-being of primary school-aged foster children. Factors associated with elevated emotional and behavioral problems and the social behavior of these children were also investigated.

Theoretical background

The transactional model of Sameroff (2010) provides a theoretical framework for understanding how various factors influence the development of a child growing up within an intricate system of variables. According to this framework, the developmental course of a child is the result of a complex interplay between multiple protective and risk factors situated in the child itself and in the various systems surrounding the child. Following the socio-ecological model of Bronfenbrenner and Ceci (1994), a distinction is made between proximal factors that influence the child directly (e.g., parent–child interactions), and distal factors that affect the child less directly (e.g., family income and type of community). Characteristics of the child, the parents, or the child-rearing environment are regarded as risk factors if they correlate significantly with a negative developmental outcome of the child (Hermanns, 1998). Research on risk factors has emphasized that no single risk factor has a profound effect on the development of a child; rather, it is the accumulation of risks and stressors embedded in proximal and distal processes that is related to deregulations of child-rearing processes and a child's poor developmental outcomes (Brown, Cohen, Johnson, & Salzinger, 1998; Garbarino & Ganzel, 2000; Sameroff, 2009). The accumulation of risk factors increases the strain in the parent–child relationship, and eventually the risk of child abuse and neglect (Staal, Hermanns, Schrijvers, & van Stel, 2013).

Most children in long-term foster care are placed there because they have a problematic history. The aim of this type of foster care is to provide a secure and stable environment that will have a protective and re-establishing effect on the well-being and development of the child. However, the high rates of unintended placement disruptions and the associated poor developmental outcomes in adulthood (Chamberlain et al., 2008; Oosterman et al., 2007), indicate that this effect is not always achieved. It is assumed that various proximal as well as distal risk factors, including mental health problems and in particular externalizing behavioral problems, disturb the rearing processes and are associated with placement disruptions (Chamberlain et al., 2006; Newton, 2000; Strijker et al., 2008). Insight into

which mental health problems are present in foster children, and which risk factors in the child, its family, and the context are related to these mental health problems (Egelund & Lausten, 2009; Janssens & Deboutte, 2009; Minnis et al., 2006; Vanderfaeillie et al., 2012), is necessary in order to detect problems in foster families at an early stage, and to provide both the children and their families with the necessary support.

Risk factors

In addition to risk factors that are non-specific to foster care placements – such as male gender, low educational level, and low income – there are also specific risk factors that influence mental health problems among foster children. Research into these risk factors is still limited.

With regard to factors related to the child, age at first placement seems to be a risk factor, although research results are ambiguous. Foster children under the age of six appear to be especially vulnerable to poor behavioral and emotional outcomes (Fisher, Burraston, & Pears, 2005; Klee, Kronstadt, & Zlotnick, 1997; Landsverk, Davis, Ganger, Newton, & Johnson, 1996): Once placed in foster care, they have an increased risk of developing or strengthening existing behavioral and emotional problems. Further, a meta-analysis by Oosterman et al. (2007) indicates that being placed in foster care at an older age puts the child at risk. These authors also found that time in foster care correlated with the developmental risk of foster children: The longer children were in foster care, the more likely they were to experience placement disruption due to the negative effects of behavior problems (Oosterman et al., 2007; Strijker et al., 2008). A history of multiple placements also contributes negatively to both internalizing and externalizing behavior (Newton et al., 2000): Children who experience numerous changes in placement are at particularly high risk of both immediate and long-term negative outcomes, even if they did not show any behavioral problems in the previous foster family (Newton et al., 2000; Oosterman et al., 2007).

With regard to family and placement factors, a negative and inconsistent parenting style is associated with an increase in behavior problems (Vanderfaeillie et al., 2012). In turn, parenting style is associated with more distal factors, such as the educational level of the foster parents and the type of placement. More highly educated foster parents provide a higher quality of parenting, and compared to kinship parents, non-kinship parents tend to have a more negative attitude toward corporal punishment and to pay more attention to the specific needs of children in care (Vanderfaeillie et al., 2012). Some studies found that children placed in kinship foster care appear to be at greater risk of developing mental health problems compared to children placed in non-kinship foster care (Lynch, 2011; Oosterman et al., 2007; Strijker et al., 2005; Strijker et al., 2008); other researchers, however, suggest the opposite (Chamberlain et al., 2008; Shore, Sim, Le Prohn, & Keller,

2002) and presume that there are possibly more important predictive factors, such as the number of previous out-of-home placements (Vanschoonlandt, Vanderfaeillie, Van Holen, De Maeyer, & Andries, 2012). Crosscountry differences in the organization, indication, and definition of kinship and non-kinship foster care may partly explain differences in findings. Finally, various studies found that a higher number of other children (foster children and biological children) in the foster family is associated with more behavioral problems in the foster child (Chamberlain et al., 2006; Strijker et al., 2011; Van Oijen, 2010).

Research aims

The main purpose of the present study was to: 1) Gain more insight into the mental health of Dutch children (4–12 years) who are in long-term foster care; 2) establish which individual risk factors (child and placement characteristics) are related to mental health; and 3) explore which combination of risk factors most adequately predicts mental health problems in these children.

Methods

Recruitment and procedure

The study received ethical approval from the Ethical Committee of the Research Institute of Child Development and Education of the University of Amsterdam. Formal cooperation agreements were made with the boards of the two Dutch regional foster care institutions that participated in the study. We used existing data on foster families that had been screened for participation in a randomized controlled trial of an intervention program for foster children with behavioral problems. For this broader study, all the foster parents affiliated with the two institutions were invited to participate, irrespective of the level of behavioral problems they experienced.

All eligible foster parents of children aged between 4 and 12 years placed in long-term foster care were invited by letter to participate. If the duration of the placement was not yet clear, the foster parents were asked: “Is it the intention that the foster child will remain in your family for a longer period?” (“No,” or “Yes, till the age of 18,” “Yes, for a couple of years,” “Yes, for one year,” or “Yes, for six months”). Those who indicated that their foster child would stay in the family for at least one year were eligible to participate, in the expectation that most of these children would stay much longer.

The participants were approached in small blocks over a period of 18 months. When applicable, both foster parents were asked to complete the questionnaire and return it in the provided prepaid envelope. They were informed that returning the completed questionnaire implied their participation in the study. They were also informed that they could withdraw their participation at any time. The foster parents who did not respond

received a reminder by mail. Although foster care supervisors were asked to encourage foster parents to respond, they were not told whether the foster parents had actually decided to participate.

A trained research coordinator was employed to carry out all the practical work. This coordinator selected all the foster families that were eligible to participate, and administered the questionnaires and managed all the information derived from them. Thereafter, she administered the data files. In total, the foster parents of 492 foster children received a questionnaire by mail; the foster parents of 329 foster children responded.

Non-response

Reasons for not responding were categorized as 1) too busy, 2) principled objections, or 3) other reasons (e.g., illiteracy of foster parents). Later in the study, the foster parents who had stated that they were "too busy" were sent a new questionnaire and re-invited to participate. If possible, the research coordinator approached the foster parents who had given "other reasons" for not responding, and encouraged them to participate. The total non-response rate was 33% (n = 163). There was no statistically significant difference in age and gender between the response and the non-response group (respectively; t = − .708, df = 400, p = .480, two-tailed and χ^2 (1, N = 402) = 1.307, p > .05).

Participants' characteristics

If more than one foster child had been placed in the same foster family, we randomly selected one of them for further analysis (total n = 239). The mean age of the children was 7.86 years (SD = 2.36, min 4.10–max 12.08); 48.1% were boys and 51.9% were girls. The mean age upon entering the foster family was 3.4 years (SD = 2.95, min 0.00–max 10.88) and the mean duration of the current placement was 4.47 years (SD = 2.88, min 0.20–max 11.34). The mean number of previous foster care placements was 1.15 (SD = 1.04, min 0–max 5).

The mean age of the foster parents was 49.63 years (SD = 9.30, min 30.85–max 75.59); their mean fostering experience was 6.58 years (SD = 6.37, min 0.05–max 40.87). Of the foster children, 13% had a single foster parent, 77.8% had a foster mother and foster father, and 7.9% had same-sex foster parents; 43.1% were in a kinship foster family and 56.9% were in a non-kinship foster family.

As regards the legal status of the placements, in 43.1% of the cases a Youth Care Agency guardian had full custody of the child, in 12.6% one of the foster parents had full custody, and in 47.7% a Youth Care Agency family supervisor had partial custody of the child; 9.2% of the placements were voluntary (the biological parents had custody of the child). In 36.8% of the foster families, other foster children were present; and in 41.4% of the families, other

biological children were present. In total, the mean number of other children in the family was 1.49 (*SD* = 1.48, min 0–max 7).

In regard to the educational level of the most highly educated of each pair of foster parents, 6.7% had completed elementary school, 26.8% had completed lower education (academic, vocational, or technical), 23.0% had completed middle school or high school, and 41.4% had completed higher education (college or university, professional, vocational, or technical).

Measures

We used the Strengths and Difficulties Questionnaire (SDQ) to screen for mental health problems. The SDQ is a brief screening questionnaire for behavioral and emotional problems in children and adolescents (Goodman, 1997; Goodman & Goodman, 2009; Stone, Otten, Engels, Vermulst, & Janssens, 2010). The SDQ Parent Form consists of 25 symptom items describing positive and negative attributes of children and adolescents that can be allocated to five subscales of five items each: emotional symptoms, conduct problems, hyperactivity/inattention, peer problems, and pro-social behavior. Items are scored on a 3-point scale (0 = "not true," 1 = "somewhat true," 2 = "certainly true"). Subscale scores were computed by summing scores on relevant items (after recoding reversed items; range 0–10). Higher scores on the four problem subscales reflect more difficulties; higher scores on pro-social behavior subscale reflect strengths. A total difficulties score (TDS) was calculated by summing the scores on the emotional symptoms, conduct problems, hyperactivity/inattention, and peer problem subscales (range 0–40).

The SDQ also contains an impact supplement asking the parents about the severity of the perceived problems and enquiring about duration, distress, social impairment, and burden for the family. A 3-point scale is used for each item (0 = "not at all/only a little," 1 = "quite a lot," 2 = "a great deal"). An impact score was calculated by aggregating the scores for distress and social impairment.

The Dutch Parent Form of the SDQ and the Dutch Child Behavior Checklist are equally valid for screening children for psychosocial problems (Crone, Vogels, Hoekstra, Treffers, & Reijneveld, 2008; Janssens & Deboutte, 2009). The psychometric properties and validity of the SDQ have been shown to be good in a number of countries, including the Netherlands (Muris, Meesters, & van den Berg, 2003; Van Widenfelt, Goedhart, Treffers, & Goodman, 2003).

Summarizing the results of various studies on the psychometric properties of the SDQ, the alphas of the five subscales (emotional symptoms, conduct problems, hyperactivity/inattention, pro-social behavior, and peer problems) range from .50 to .70, and the alphas for the TDS from .70 to .80 (Achenbach et al., 2008). The Cronbach's alphas in the present study ranged from .69 (peer problems) to .88 (TDS).

A review by Stone et al. (2010) shows that the internal consistency, test–retest reliability, and inter-rater agreement are satisfactory for the parent and the teacher version of the SDQ. The results of reliability and validity tests at the subscale level have been found to be weaker com- pared to the results for the total scales. Therefore, Stone and colleagues recommend caution when using and interpreting the subscales of the SDQ separately. Table 1 shows the norm cut-off scores used in the Netherlands; age and gender referenced norms are not available. Because of the high non-response rate of the parents in the standardization study, these norms are suboptimal (Goedhart, Treffers, & van Widenfelt, 2003).

Table 1 *Cut-off scores SDQ*

	Normal range	Borderline range	Clinical range
Total difficulties scale	0-10	11-13	14-40
Emotional symptoms	0-3	4	5-10
Conduct problems	0-2	3	4-10
Hyperactivity-inattention	0-5	6	7-10
Peer problems	0-2	3	4-10
Pro-social behavior	8-10	7	0-6
Impact scale	0	1	>2

Note. Norm scores (Goedhart, 2003)

In addition to the SDQ, the questionnaire also included descriptive socio-demographic variables and potential risk factors (child characteristics, and family and placement characteristics). The following descriptive socio-demographic variables were measured: foster family composition (single, heterosexual couple, same-sex couple), educational level of foster parents, legal status of placement (permanent with Youth Care Agency guardian, temporary with Youth Care Agency family supervisor, or voluntary), and anticipated duration of placement (no, more than six months, one year, more than one year, multiple years, till 18).

The following potential child risk factors were measured: gender, age, cultural background (Dutch/non-Dutch (Turkish, Moroccan, Surinamese, Antillean, other)), age upon entering foster family, duration of current placement, and number of previous placements. The foster family and placement characteristics measured were: type of foster family (kinship, non-kinship), age, foster parents' cultural background and number of years of foster parenthood, and presence and number of other children (foster and biological).

Analyses

To fulfill our first objective (i.e., to gain more insight into mental health problems among children in foster care), we used descriptive statistics to report the scores in the five SDQ domains, the total difficulties score (TDS), and the impact scale. In the case of foster parent couples, if both parents returned the questionnaire we used a paired sample *t*-test to establish whether their scores differed significantly from each other. We found no significant differences for the TDS (t =0.73, df = 166, p = .467, two-tailed) or the subscales emotional symp- toms (t = − 0.25, df = 166, p = .801, two-tailed), conduct problems (t = 0.57, df = 166, p = .571, two-tailed), hyperactivity/inattention (t = 0.78, df = 166, p = .438, two-tailed), and peer problems (t =0.89, df = 166, p = .372, two-tailed). For these scales, we used the mean scores for further analyses. We found significant differences between the partners in the couples on the pro-social behavior scale (t = − 2.37, df = 168, p = .019, two-tailed) and the impact scale (t = – 2.53, df = 163, p = .012, two-tailed); we therefore used the separate scores for further analyses.

To fulfill our second objective (i.e., to establish which risk factors correlate with mental health problems), we used bivariate correlation tests (Pearson), independent sample *t*-tests, and a one-way ANOVA. We thereafter performed block-wise linear regression analyses to test the independent association between the various significantly correlated child and placement characteristics and mental health problems among the children (our third objective). We entered the child risk factors in the first block, and the placement risk factors in the second block. Finally, we used variance analyses to test the risk accumulation effect; that is, to establish whether the presence of more risk factors could be associated with a higher prevalence of mental health problems. Continuous variables were categorized by the mean plus one standard deviation. The total risk score was calculated by summing the risk factors that were significantly correlated with the total difficulties score.

Results

Mental health problems and pro-social behavior

As can be seen in Table 2, the mean total difficulties score (TDS) of the SDQ was 11.58 (SD = 7.17), which is in the borderline range. The mean scores of the SDQ subscales were all in the normal range. The impact scale and the pro-social behavior scale were in the borderline range.

In total, based on the TDS, 37.4% of the children in the sample were in the clinical range, 13.4% were in the borderline range, and 49.2% were in the normal range. Approximately similar percentages were found for the other subscales. Only the emotional problems subscale gave a relatively low percentage of 17.2% in the clinical range.

Table 2 *SDQ scores of foster parents*

	Foster parents (N = 238)		Normal range		Borderline range		Clinical range	
	M (SD)		*n*	%	*n*	%	*n*	%
Total difficulties	11.58	(7.17)[a]	117	49.2	32	13.4	89	37.4
Emotional symptoms	2.41	(2.13)	177	74.4	20	8.4	41	17.2
Conduct problems	2.13	(2.12)	109	45.8	39	16.4	90	37.8
Hyperactivity-inattention	4.81	(2.77)	114	47.9	54	22.7	70	29.4
Peer problems	2.22	(2.19)	144	60.5	25	10.5	69	28.9
Pro-social behavior								
Foster parent 1	7.62	(2.18)	133	57.8	34	14.8	63	27.4
Foster parent 2	7.31	(2.31)	98	55.1	27	15.2	53	29.8
Impact scale								
Foster parent 1	1.53	(2.23)[a]	124	55.1	27	12.0	74	32.9
Foster parent 2	1.25	(1.84)[a]	104	59.8	16	9.2	54	31.0

Note. *n* foster parent 1 = 230, *n* foster parent 2 = 178

[a] Borderline range

Risk factors

To determine which risk factors correlate with mental health problems, we calculated associations between mental health status and foster child characteristics, the family, and placement characteristics. Table 3 shows all the results of the Pearson correlations, and Table 4 the results of the *t*-tests and one-way ANOVA.

Foster child characteristics. A number of significant relations between the SDQ scores and the foster child characteristics were found, but most were weak. There was a significant correlation between the age of the child and the TDS (r = .22, n = 238, p < .01, two-tailed), emotional symptoms (r = .23, n = 238, p < .01, two-tailed), conduct problems (r = .14, n = 238, p < .05, two-tailed), hyperactivity/inattention problems (r = .19, n = 238, p < .01, two-tailed), and the impact scale (foster parent 1: r = .14, n = 225, p < .05, two-tailed; foster parent 2: r = .26, n = 174, p < .01, two-tailed). The older the child, the more problems foster parents reported.

The older the child was upon entering the foster family, the more problems the foster parents reported on the TDS (r = .17, n = 238, p < .01, two-tailed). They also reported more hyperactivity/inattention problems (r = .20, n = 238, p < .01, two-tailed) and peer problems (r = .13, n = 238, p < .01, two-tailed), and less pro-social behavior (foster parent 1: r = –.17, n = 230, p < .05, two-tailed, foster parents 2: r = –.18, n = 178, p < .05, two-tailed).

The length of the placement correlated significantly with the impact scale (foster parent 1: r = .23, n = 174, p < .01, two-tailed) and the pro-social behavior scale (foster parent 2: r = .18, n = 230, p < .01, two- tailed). The longer the placement, the more pro-social behavior and the higher the impact score.

Table 3 *Correlationmatrix Pearson's r (n = 235-239)*

	Total difficulties	Emotional symptoms	Conduct problems	Hyperactivity-inattention	Peer problems	Pro-social behavior		Impact Scale	
Characteristics						**Foster parent 1**	**Foster parent 2**	**Foster parent 1**	**Foster parent 2**
Foster child									
Age	.22**	.23**	.14*	.19**	.13	.01	-.11	.14*	.26**
Age at entering foster family	.17**	.07	.09	.20**	.13*	-.17*	-.18*	.08	-.01
Duration current placement (years)	.01	.12	.02	-.05	-.03	.18**	.10	.04	.23**
N previous placements	.16*	.05	.16*	.18**	.10	-.14*	-.14	.12	.09
Placement									
Experience foster parents (years)	.22**	.29**	.22**	.14*	.07	-.03	-.01	.20**	.31**
Age of foster parents	-.05	.09	-.10	-.11	-.01	.11	.19*	-.08	.01
N other children (foster and biological)	-.09	-.11	.02	-.12	-.05	-.11	-.09	.01	.02

Note. A positive correlation on the pro social behavior scale meant that the foster parent reported more pro-social behavior i.e., less problems, a negative correlation meant that the foster parent reported less pro social behavior i.e., more problems.
Foster mothers were allocated to foster mother 1 and foster fathers to foster parent 2, except in case of same sex parents when both mothers or father were allocated to foster parent 1 and 2.
* $p < .05$. ** $p < .01$.

The more foster care placements the child had experienced before being placed in the current foster family, the more problems the foster parents reported on the TDS (r = .16, n = 238, p < .05, two-tailed). They also reported more conduct problems (r = .16, n = 238, p < .01, two-tailed) and hyperactivity/inattention problems (r = .18, n = 238, p < .01, two-tailed), and less pro-social behavior (foster parent 1: r = −.14, n = 239, p < .05, two-tailed).

Placement characteristics. The significant correlations between the SDQ scores and the placement characteristics were also weak (see Table 3). The longer the duration of their foster parenthood, the more problems foster parents reported on the TDS (r = .22, n = 238, p < .01, two-tailed) and the impact scale (foster parent 1: r = .20, n = 225, p < .01, two-tailed; foster parent 2: r = .31, n = 174, p < .01, two-tailed). They also reported more emotional symptoms (r = .29, n = 238, p < .01, two-tailed), conduct problems (r = .22, n = 238, p < .01, two-tailed), and hyperactivity/inattention problems (r = .14, n = 238, p < .05, two-tailed). The age of the foster parents correlated significantly with only the pro-social behavior subscale (foster parent 2: r = .189, n = 178, p < .05, two-tailed). The older the foster parent, the more pro-social behavior he or she reported.

The t-tests analyses (see Table 4) showed that non-kinship foster families reported more problems than kinship foster families on the TDS (t = 2.58, df = 236, p = .010, two-tailed) and the impact scale (foster parent 1: t = 2.90, df = 223, p = .004, two-tailed; foster parent 2: t = 2.57, df = 172, p = .011, two-tailed). They also reported more conduct problems (t = 3.28, df = 236, p = .001, two-tailed) and less pro-social behavior (foster parent 1: t = 3.32, df = 228, p = .001, two-tailed, foster parent 2: t = 2.81, df = 176, p = .005, two-tailed). Foster parents with no other biological children living at home, reported more problems on the emotional symptoms subscale (t = 2.20, df = 233.31, p = .029, two-tailed).

To summarize, most of the correlations were weak (between r = .16 and r = .31). The foster child characteristics that correlated with the SDQ total difficulties scale and most subscales, were the age of the foster child, the age upon entering the foster family, and the number of previous placements. The placement characteristic that correlated with the most SDQ subscales was the number of years of foster parenthood. Except for the variable kinship or non-kinship placement, we found no other significant differences on the SDQ total difficulties and subscale scores.

Table 4 *Independent samples t-test and ANOVA: foster child characteristics*

	Gender				Cultural background	
	Boy	Girl			Dutch	Non-Dutch
	M (SD)	*M (SD)*	*t*	*df*	*M (SD)*	*M (SD)*
Total difficulties	11.85 (7.07)	11.34 (7.29)	0.55	236	11.6 (7.25)	11.56 (7.08)
Emotional problems	2.31 (2.04)	2.5 (2.21)	-0.65	236	2.47 (2.18)	2.31 (2.04)
Conduct problems	2.27 (2.16)	2.0 (2.08)	0.89	236	2.03 (2.13)	2.32 (2.09)
Hyperactivity-inatt.	4.93 (2.82)	4.70 (2.74)	0.62	236	4.84 (2.72)	4.77 (2.87)
Peer problems	2.33 (2.23)	2.11 (2.16)	0.78	236	2.26 (2.25)	2.15 (2.11)
Pro-social behavior Foster parent 1	7.52 (2.26)	7.73 (2.10)	-0.73	228	7.69 (2.08)	7.53 (2.33)
Foster parent 2	7.23 (2.29)	7.39 (2.35)	-0.44	176	7.34 (2.21)	7.19 (2.50)
Impact scale						
Foster parent 1	1.69 (2.36)	1.38 (2.10)	1.06	223	1.53 (2.21)	1.54 (2.29)
Foster parent 2	1.36 (1.89)	1.13 (1.79)	0.84	172	1.28 (1.90)	1.19 (1.75)

Note. Foster mothers were allocated to foster mother 1 and foster fathers to foster parent 2, except in case of same sex parents when both mothers or father were allocated to foster parent 1 and 2.
*$p < .05$. **$p < .01$.

		Legal position				
		Family supervisor	Guardian	Biological parents		
t	*df*	*M (SD)*	*M (SD)*	*M (SD)*	*F*	*df*
0.04	236	11.82 (6.92)	11.75 (7.29)	9.61 (7.74)	0.92	237
0.54	236	2.43 (2.16)	2.44 (2.07)	2.09 (2.35)	0.26	237
1.01	236	2.11 (2.06)	2.26 (2.09)	1.75 (2.52)	0.55	237
0.18	236	4.91 (2.76)	4.93 (2.81)	3.77 (2.53)	1.71	237
0.38	236	2.37 (2.22)	2.12 (2.20)	2.00 (2.10)	0.47	237
0.56	228	7.72 (2.09)	7.50 (2.28)	7.85 (2.08)	0.36	229
0.52	176	7.43 (2.30)	7.14 (2.32)	7.59 (2.43)	0.46	177
-0.03	223	1.49 (2.30)	1.63 (2.26)	1.20 (1.77)	0.33	224
0.33	172	1.04 (1.74)	1.44 (1.90)	1.18 (2.01)	0.93	173

Table 4 *(continued) Independent samples t-test: family and placement characteristics*

	Placement type				Family type				Other foster children	
	Kinship	Non-kinship			Single parent	Two parents			Yes	No
	M (SD)	*M (SD)*	*t*	*df*	*M (SD)*	*M (SD)*	*t*	*df*	*M (SD)*	*M (SD)*
Total difficulties	10.22 (7.10)	12.61 (7.08)	2.58**	236	10.53 (7.76)	11.72 (6.87)	-0.87	212	11.53 (7.28)	11.61 (7,13)
Emotional problems	2.17 (2.06)	2.58 (2.17)	1.50	236	2.39 (2.28)	2.40 (2.12)	-0.03	212	2.47 (2.34)	2.37 (2.00)
Conduct problems	1.64 (2.00)	2.53 (2.13)	3.28**	236	1.47 (2.18)	2.23 (2.08)	-1.88	212	2.22 (2.19)	2.11 (2.08)
Hyperactivity-inatt	4.42 (2.69)	5.11 (2.81)	1.91	236	4.47 (3.01)	4.96 (2.72)	-0.92	212	4.74 (2.92)	4.85 (2.70)
Peer problems	2.00 (2.03)	2.39 (2.30)	1.40	229.82	2.21 (2.19)	2.13 (2.11)	0.19	212	2.11 (2.11)	2.28 (2.25)
Pro-social behavior										
Foster parent 1	8.18 (1.92)	7.23 (2.27)	-3.32**	228	8.29 (1.99)	7.49 (2.20)	1.91	206	7.64 (2.25)	7.63 (2.14)
Foster parent 2	7.93 (2.02)	6.94 (2.41)	-2.81**	176	6.00 (.)	7.31 (2.31)	-0.56	156	7.31 (2.46)	7.31 (2.24)
Impact scale										
Foster parent 1	1.02 (1.94)	1.89 (2.36)	3.01**	216.11	1.19 (2.26)	1.49 (2.05)	-0.74	201	1.74 (2.34)	1.41 (2.16)
Foster parent 2	.78 (1.45)	1.51 (1.99)	2.80**	161.09	0.00 (.)	1.18 (1.76)	-0.67	152	1.63 (2.13)	1.03 (1.62)

Note. Foster mothers were allocated to foster mother 1 and foster fathers to foster parent 2, except in case of same sex parents when both mothers or father were allocated to foster parent 1 and 2.
*$p < .05$. **$p < .01$.

		Other biological children				Match cultural background			
		Yes	No			Yes	No		
t	*df*	*M* (*SD*)	*M* (*SD*)	*t*	*df*	*M* (*SD*)	*M* (*SD*)	*t*	*df*
0.08	236	11.34 (6.90)	11.75 (7.37)	0.44	236	11.29 (7.15)	12.19 (6.57)	-0.77	176
-0.36	236	2.06 (1.80)	2.64 (2.31)	2.20*	233.31	2.48 (2.20)	2.40 (1.86)	0.21	176
-0.39	326	2.31 (2.70)	2.03 (2.14)	-1.00	236	1.94 (2.16)	2.47 (2.11)	-1.48	176
0.32	236	2.24 (2.36)	4.87 (2.83)	0.40	236	4.78 (2.81)	5.05 (2.88)	-0.57	176
0.59	236	7.33 (2.37)	2.20 (2.08)	-0.14	236	2.09 (2.02)	2.26 (2.08)	-0.53	176
-0.05	228	7.33 (2.37)	7.84 (2.00)	1.72	185.21	7.72 (2.07)	7.47 (2.47)	0.68	177
-0.02	176	6.94 (2.40)	7.56 (2.23)	1.74	176	7.34 (2.18)	6.91 (2.57)	1.05	147
-1.06	223	1.53 (2.10)	1.54 (2.33)	0.04	223	1.37 (2.08)	1.45 (2.01)	-0.23	173
-1.96	102.98	1.06 (1.66)	1.38 (1.95)	0.16	162.82	1.16 (1.74)	1.34 (1.85)	-0.57	144

Table 5 *Regression coefficients for the variables included in the model*

Variable	*B*	*β*	R	R^2	Adjusted R^2	Δ R^2	*p*
Model 1:			.26	.07	.058	.07	.001
Age of the child	0.55	.18**					
Age at entering foster family	0.14	.06					
Number of previous placements	0.83	.12					
Model 2:			.34	.12	.97	.03	.003
Age of the child	0.26	.09					
Age at entering foster family	0.36	.15					
Number of previous placements	0.59	.09					
Kinship or non-kinship	-1.28	-.09					
Experience foster parents (years)	0.22	.19*					

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

Combination of risk factors

Block-wise linear regression analyses were used to explore the third focus of this study, namely which combination of risk factors most adequately predicts mental health problems in foster children. We used only the significantly correlated risk factors ($p < .05$).

Before running the regression analysis, multicollinearity was tested between the various significantly correlated variables, and showed acceptable levels of tolerance (between .63 and .93). In the first block, the foster child characteristics age of the child, age upon entering the foster family, and the number of previous placements were entered. In the second block, the family and placement characteristics kinship or non-kinship placement and duration of foster parenthood were entered. As shown in Table 5, both steps contributed significantly to the explained variance. With the second step, the most significant model emerged: F (5,23) = 6.08, $p < 0.05$. This model explained 9.7% of the variance (adjusted R^2 = .097). No variables were excluded.

The risk accumulation effect was tested using the risk factors that correlated significantly with the total difficulties scale in this study. An increase in the number of risk factors present correlated significantly with a higher level of reported total difficulties (r = .24, n = 238, $p < .001$, two-tailed). To specify this correlation, a variance analyses was used with the number of risk factors as the independent variable. The minimum number of risk factors was 0 (n = 66) and the maximum was 4 (n = 7). To ensure that the total n was large enough in each group, the placements that had 3 or 4 risk factors were taken together as one group. As shown in figure 1, by summing the significantly correlated risk factors, a significant risk accumulation effect was found (F (3,23) = 5.89, $p < .001$).

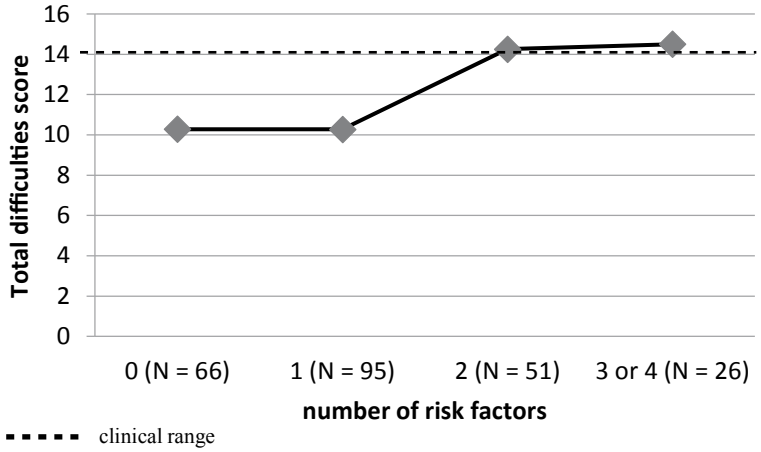

Figure 1 *The risk cumulation effect*

Discussion

The present study focused on the mental health of Dutch school-aged foster children, as seen from the foster parents' perspective, and the related risk factors. Nearly half of the foster parents reported mental health problems in normal ranges; this is in line with other studies that found positive mental well-being in a large number of foster children (Farmer, 2010; Lynch, 2011; Oosterman et al., 2007; Strijker & Knorth, 2009). However, the results also revealed a wide range of behavioral and emotional problems (ranging from none to very serious problem behavior), and showed that a third of the children have total difficulty scores in the clinical range, which is triple the rate in the general population (Bot, de Leeuw den Bouter, & Adriaanse, 2011; Goedhart et al., 2003). In line with the results of a meta-analysis by Duhig and colleagues (Duhig, Renk, Epstein, & Phares, 2000), we found a high level of agreement between foster parent couples' reports on the mental health of their foster child.

Although the prevalence rate seems to be slightly lower than that found by studies in other countries, this study confirms previous research indicating that children in foster care have elevated levels of mental health problems. The lower rates might be explained by the use of suboptimal norm scores, which is likely to have led to the underestimation of the prevalence rates (Goedhart et al., 2003), or by the different definitions of foster care used across the world, which complicates the comparison of international studies. However, combined with a clinical mean impact score indicating that the behavioral problems are seriously disturbing daily family life, this study demonstrates that the mental health risk of foster children must be taken seriously. Contrary to the expectation that behavioral

problems decrease in foster care, a recent longitudinal study by Vanderfaeillie et al. (2012) shows that behavioral problems in foster children seem to increase or remain stable over time. Embedded in a complex interaction between other proximal and distal factors, behavioral and emotional problems are a prominent cause of unplanned termination of foster family placements (Chamberlain et al., 2006; Oosterman et al., 2007; Strijker & Knorth, 2009) and to negative developmental outcomes for foster children (Newton et al., 2000). Although the one-time cross-sectional design of this study requires us to be cautious in drawing conclusions about the development over time of behavioral problems in foster children in this sample (see also limitations), the elevated prevalence rates underpin the importance of supporting foster parents in reducing negative parenting strategies and strengthening supportive parenting (see also Fisher et al., 2005; Vanderfaeillie et al., 2012).

With regard to the association between risk factors and mental health status, this study found univariate positive relationships between mental health problems and the age of the child (Wicks-Nelson & Israel, 2009; Zeijl, Crone, Wiefferink, Keuzenkamp, & Reijneveld, 2005), the age upon entering foster care (Oosterman et al., 2007), non-kinship placements (Lynch, 2011; Shore et al., 2002), and the number of previous placements (Strijker et al., 2008; Vanschoonlandt et al., 2012).

What surprised us is that the more experience foster parents have of fostering children, the more mental health problems they report. Upon investigating which combination of risk factors most adequately predicts the mental health of foster children, we found that when added to the regression model, this variable appeared to contribute the most to higher total difficulties scores, and the significant contribution of all the other risk factors disappeared. It is possible that foster parents with the most experience are given the most difficult foster children, as it is thought that these foster parents are better able to handle problem behavior. Conversely, younger foster parents might find these children less tiring and view them more positively. Research shows that foster parents who had already fostered children, experienced lower levels of commitment compared to foster parents who had fostered fewer children, and were associated with a greater likelihood of placement disruption (Dozier & Lindhiem, 2006; Farmer, 2010). In this respect, the association between the experience of foster parents and the mental health problems of foster children is interesting; however, due to the correlational design of the present study, this must be interpreted carefully. Meanwhile, professionals in foster care organizations should consider whether they unjustifiably assume that more experienced foster parents experience fewer behavioral problems in their foster children, and probably handle these problems better compared to less experienced foster parents.

Besides looking at difficulties, focusing on what is going well in foster children is meaningful as well. This study found a positive univariate relationship between pro-social behavior and length of placement, age of foster parents, and kinship placements.

As behavior problems are related to placement breakdown, pro-social behavior might be related to better adjustment to foster families; in turn, providing support to increase the pro-social behavior of foster children might result in higher placement stability (Hansson & Olsson, 2012).

Looking at the individual risk factors related to pro-social behavior and mental health problems found in this study, it is striking that all associations are weak. In addition, various expected risk associations (e.g., gender, cultural background, and single-parent families) could not be confirmed. The present study shows that the total number of risk factors present might be a better predictor of problems compared to the relationship between single risk factors and development. It accords with the transactional model of Sameroff (2010), which shows that an accumulation of child and placement related risk factors is associated with an elevated prevalence of mental health problems. The results point to the importance of understanding the development of a foster child as a result of the interaction between various risk factors in the child and its environment. Thus, foster family placements that have an increased number of risk factors require early detection. At present, this might easily be missed, since there is no validated screening instrument to objectively measure the complex interplay of various risk factors.

This study had some limitations. Only approximately 10% of the total variance was explained by the model used in this study. Thus, roughly 90% of the variance of mental health problems in this study remains unaccounted for, indicating that important variables were absent from the analyses. No data on the history and the previous mental health services of the children were available, whereas previous research indicates that such experiences as abuse and neglect are also related to a substantial number of mental health problems (Armsden, Pecora, Payne, & Szatkiewicz, 2000; Strijker et al., 2008). Had they been available, these data would probably have increased the explained variance of the mental health problems.

Furthermore, in addition to the definition of risk we followed (characteristics of the child, parents, or child-rearing environment are regarded as risk factors if they correlate significantly with a negative developmental outcome of the child (Hermanns, 1998), a risk can also be defined as a factor that needs to precede an outcome (Offord & Chmura Kraemer, 2000). The one-time cross-sectional and correlational design of our study does not allow us to draw conclusions about the causality of the relationships we found or about the development of mental health problems over time. Understanding whether behavioral problems diminish, persist, or increase over time, and the underlying causal relationships with child and placement characteristics, requires a longitudinal study design.

Finally, we used only a caregivers' instrument to report about mental health problems, and caregivers tend to underestimate internalizing problems in school-aged children (Tarren-Sweeney, Hazell, & Carr, 2004). Our conclusions would be firmer if we were able

to support them with report forms from classroom teachers or the children themselves. Firstly, however, there are no validated and standardized measures for younger (< 9 years) school-aged children. Secondly, in most Dutch foster care arrangements, the biological parents retain custody of their child, even though they do not have frequent, or even any, contact with the child. Their permission to include under-aged children or classroom teachers in a study is a legal requirement. Since the contact with the biological parents can be very complicated, especially in long-term placements, asking permission might have had too negative consequences for the child and disturbed the delicate balance in the child–foster parent–biological parent triad. Nevertheless, as high mean scores of caregiver screening measures are strongly correlated with a high prevalence of disorders that were in the clinical range (Goodman & Goodman, 2011), we believe our research findings are sufficiently significant to validate our conclusions.

Conclusion

Nearly half of all the foster parents in this study reported no mental health problems in their foster child. However, more than a third reported serious mental health problems in their foster child, which is triple the rate in the general population. Mental health problems appear to be positively correlated with age of the foster child, age upon entering the foster family, number of prior foster placements, and foster parents' number of years of experience. Children in kinship families appear to have fewer mental health problems compared to children in non- kinship placements. The foster care experience of the foster parents seems to be the most important predictive factor for mental health problems. Pro-social behavior appears to be positively related to length of placement, age of foster parents, and kinship placements. Further research should lead to clinical implications.

The results of this study are in line with one of the principles of transactional theory, namely that no single risk factor has a profound effect on the well-being of a foster child; rather, it is the accumulation of risk factors in the child and its surrounding systems that results in more mental health problems. These findings suggest the importance of the early detection of problems and potential risk factors in foster families, and the need to support a substantial number of foster children and foster families.