# Protective Factors in the Family Environment of Children of

# Divorce

Protective effects of having siblings, sibling support, and pets on children of divorced parents:

A comparison with children from intact families

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**Background:** Children of divorced families report more internalizing and externalizing problem behavior compared to children of continuously married parents. Research shows that a possible cause for this increased problem behavior, which can be reduced by protective factors, may be the stress that accompanies and a parental divorce. This study focuses on potential protective factors in the family environment of children from divorced families. Specifically having siblings, the quality of the sibling relationship and owning a pet are expected to reduce possible problem behavior. **Method:** A subsample of a cross-sequential dataset was taken consisting of 1432 children from divorced families. The protective effects of siblings, sibling relationships, and pets were examined using dummy variables via mostly regression analyses. The independent variables were both internalizing and externalizing problem behavior. **Results:** The quality of the sibling relationship significantly predicted less externalizing problem behavior in children from divorced families, compared to children from intact families. No protective effect of the quality of sibling relationships for internalizing problem behavior was found in this study. Solely having a sibling did not significantly predict the reduction of either type of problem behavior. Also a non-significant relationship between owning a pet and problem behavior was found. However, the relationship between having pets and problem behavior showed an almost significant effect, hinting at a protective effect of pets on externalizing problem behavior in children of divorce. **Conclusion:** In this study we found some protective factors for children of divorced families are present in the family environment. These protective factors can be found in a sibling relationship and presumably in pets. Implications of the non-significant, but promising, relationships, and indications for future research are discussed.

*Keywords: Children, Divorce, Family Environment, Protective Factors*

Protective Factors in the Family Environment of Children of Divorce

A large proportion of children in the western world are, or have been, involved in a parental divorce. In the Netherlands alone approximately 70.000 children witness their parents' separation each year (Spruijt & Kormos, 2010). Children of divorce have long been the subject of research. The first papers on divorce including children date back to the early 1900's (Yale Law Journal, 1908). Nowadays divorce is more common and therefore a growing topic of research for family scholars. A literature search using Thomson Reuters 'Web of Knowledge', an online database for scientific articles, on the key words 'children of divorce' revealed a total of 2.099 English articles published in scientific social science journals over the past 15 years alone. A review of Amato (2010) showed that the association between divorce and the well-being of children is one of the topics that have received the most attention from social researchers during the last decade.

The association between divorce and the well-being of children has befallen researchers from the fact that children of divorce seem to score significantly lower on a variety of measures, including well-being, compared to children with continuously married parents (Amato, 2001). The purpose of the present study is to focus on possible protective factors in the relationship between divorce and the well-being of children. Specifically, this study will examine the presence of siblings, the quality of the sibling relationship and the presence of pets as potential protective factors against internalizing and externalizing problem behavior in children from divorced families. Before a detailed description of this research, a summary of previous research considering children of divorce and some protective- and risk factors will be described.

**Theoretical and Empirical Background**

The associations between parental divorce and well-being can be divided into short-term and long-term outcomes regarding the well-being of children. Rickel and Langner (1985)

describe the two as follows; short-term outcomes describe the consequences of divorce that a child experiences within five years of the parental separation. Long-term outcomes describe divorce consequences that are perceived five or more years after the parental separation took place. The definitive 'effect' of a divorce, either short- or long-term, is dependent on, among other things, the age, stage of development, and coping mechanism of the child at the time of the divorce (Bryner, 2000). The word *effect* is deliberately written within quotation marks. The punctuation emphasizes the fact that an actual causal relationship cannot be determined although that is what the word implies.

Many empirical articles have documented the fact that children of divorce tend to report more internalizing and externalizing problem behaviors compared to children from intact families (Amato, 2010; Van der Valk, Spruijt, De Goede, Maas & Meeus, 2005). Internalizing problem behavior describes behavior that cannot always be seen from the outside such as psychological stress and depression. As opposed to internalizing problem behavior is externalizing problem behavior, which includes risky behavior (e.g., alcohol, tobacco and drug use), aggression and delinquency. Research during the last decade continued to show that children with divorced parents score lower on average on a variety of emotional, behavioral, social, health, and academic outcomes compared to children with continuously married parents (Amato, 2010).

Previous research has mostly focused on differences between children of divorced and intact families. Nowadays, more interest lies in studying why some children are 'better off' than other children after experiencing a parental divorce. Earlier research on the functioning and well-being of children of divorce have aimed at looking into risk and protective factors that accompany a parental divorce. The current study focuses on the exploration of protective factors in the family environment of children of divorced parents. By examining this specific domain some insight will be gained in the relationship between

children's internalizing and externalizing problem behavior and certain factors in the family environment, which will hopefully add to the research on the association between parental divorce and the well-being of children.

The presence of risk and protective factors influence the outcome for children in any given situation. In the social sciences these factors are used to predict how children will react to life events such as a parental divorce. A risk factor is a variable that is associated with an increased probability of a negative outcome for a child of, in this case, divorced parents. Some risks are related to the extent and type of conflict between parents, such as deterioration in the quality of parenting, frequently accompanying the divorce (Kelly & Emery, 2003). Also, the lack of protective factors can be seen as a risk (factor), just as the lack of risk factors can be considered a protective factor.

A protective factor, on the other hand, predicts a positive outcome. In the research on divorce, several protective factors have been identified: These include the psychological adjustment of (custodial) parents and the type of relationship children have with their non-resident parent (Kelly & Emery, 2003). These protective factors are mostly found in the family environment of the child. This both includes the literal surroundings and the close relations with other family members. One of the most important protective factors within the family environment is (social) support. Support from (extended) family members is positively associated with social functioning and an increased feeling of belongingness (Hsieh & Leung, 2009; Leon, 2003). For example, Milevsky (2005) found that sibling support is associated with lower levels of loneliness and depression and with higher self-esteem and life satisfaction. However, his conclusion applies to children in general because Milevsky (2005) does not specify any particular circumstance in which sibling support provides these prospects. The study from Branje, Van Lieshout, Van Aken and Haselager (2004) showed that support from a brother or sister is mostly negatively related to externalizing problems.

No specific circumstance was specified in which these effects occurred. Gass, Jenkins and Dunn (2007) found that after having experienced stressful life events, children who had affectionate relationships with their siblings were less likely to experience a change in internalizing problem behavior when compared to children without affectionate sibling relationships. Lastly, Tucker, McHale and Crouter (2001) found that support in familial issues could be obtained from both older and younger siblings.

An additional protective factor, for children of divorce, in the family environment can be found in the ongoing question whether pets provide humans with beneficial companionship. Beck and Katcher (2003) claim that social support from companion animals can be crucial for the elderly, who often lose human social support because of friends and family moving or passing away. Although the example specifies elderly people, children of divorce also experience the loss of human support after a parental divorce. Sable (1995) shows in his study similar results to Beck and Katcher (2003) by saying that pets may supply ongoing support and reduce feelings of loneliness during adversity or stressful transitions such as divorce or bereavement. Unfortunately, his article did not specify a specific sample to which these results apply. More generally, several articles have shown that pets promote the mental and physical health of their owner (Sable, 1995; O'Haire, 2010). In a review of Siegel (1990) she concludes that the stress buffering effect of pets may be the result of their ability to provide social support to their owners. Although the evidence for a direct causal association between human well-being and companion animals is not always conclusive, the literature reviewed is largely supportive of the widely held belief that "pets are good for us" (Wells, 2009).

**This Study**

Research has shown that children benefit most from variables that are close to them and that are available on a daily basis (Hsieh & Leung, 2009; Gass, Jenkins & Dunn, 2007;

Leon, 2003). The focus of this article will be on protective factors that may be present in the family environment of children from divorced parents. Such protective factors can be found in the presence of siblings, the sibling relationship, or possibly even a pet. Research has shown that, among other things, social support from (extended) family may buffer children from the negative outcomes following parental divorce such as stress (Hsieh & Leung, 2009; Leon, 2003). It may also decrease the chance to experience depressive symptoms later in life (Hsieh & Leung, 2009). Therefore, the main question that will be answered in this article is: What factors in the family environment can be considered protective factors for children of divorce? In order to answer this question, four consecutive sub-questions will be tackled. (1) Are there differences in internalizing and externalizing problem behavior when comparing children from divorced families and children from intact families?; (2) Are there differences in internalizing and externalizing problem behavior between children from divorced parents with and without siblings?; (3) Is solely the presence of siblings, in divorced families, accountable for the possible difference in internalizing and externalizing problem behavior when comparing children with siblings and only children, or is the sibling relationship determinative?; (4) Is owning a pet a protective factor, in regard to the child's internalizing and externalizing problem behavior, for a child of divorced parents, if the child has no siblings? The first sub-question might seem needless because much previous research has already shown children from divorce to score lower than children from intact families. In order to advance to the next couple of questions, though, it is deemed necessary to make sure the differences also exist in the current dataset.

The bases of the second and third sub-questions originate from research from Gass, Jenkins and Dunn (2007), Milevsky (2005) and others. Their literature reveals that individuals receiving high sibling support scored significantly lower on loneliness and depression, and significantly higher on self-esteem and life satisfaction, compared to those

with low sibling support. Although most articles were not specifically written about children of divorce, due to the general upside of having siblings, it is expected that similar results apply for children of divorced families.

The fourth and final sub-question to be tackled considers pets as a possible source of support for children. Sable (1995), O'Haire (2010) and others confirmed this when they wrote that a pet can be responsible for a better mental and physical health of their owner. Also considering other previously mentioned research it is expected that pets can have a protective effect, with regard to internalizing and externalizing problem behavior, on children of divorced parents if the child has no siblings. The hypotheses are: (H1) Children from divorced families report more internalizing and externalizing problem behavior compared to children form intact families, (H2) Children from divorced parents with siblings report less internalizing and externalizing problem behavior compared to only children from divorced families, (H3) The quality of the sibling relationship plays a protective role, with regard to internalizing and externalizing problem behavior, for children from divorced families, (H4) Children from divorced parents, with or without siblings, who own a pet show less internalizing and externalizing problem behavior compared to children that don't own a pet.

## Method

### Participants

The participants come from a nation-wide representative sample of Dutch children. The sample used here consists of a total of 7809 participants of which 4036 (51,7%) are girls and 3759 (48,1%) are boys[1]. The age of the respondents varied from nine to seventeen years old ($M = 13,18$; $SD = 1,41$). Participants came from the final three years of primary school ($n = 1488$) and the first three years of secondary school ($n = 6321$). Most of the students' parents were married or cohabiting $n = 6220$ (79.7%); 18.3% ($n = 1432$) of the students'

parents were divorced or separated and 1.7% ($n = 135$) of the students has one (and in some cases two) deceased parent(s). Sub samples of participants will be used in which students with either one or two deceased parents are not included.

**Procedure**

The entire dataset consists of a pooled sample that was obtained by combining datasets from different years in which, roughly, the same questionnaire was used. This is called a cross-sequential dataset. It differs from a longitudinal dataset in the sense that in the consecutive years different participants were selected. The dataset is constructed of six waves of quantitative answers that were collected in 2006, 2007, 2008, 2009, 2011, and 2013. The data were mostly gathered by graduating Bachelor students from Utrecht University of the Faculty of Social Sciences supervised by Dr. E. Spruijt and Dr. I. van der Valk of the Department of Youth and Family.

The classes of participants were selected from Dutch schools that were randomly selected. Informed consent was obtained from parents by means of an informational letter. The students voluntarily and anonymously filled in the survey. They were told they had the option to drop out, if they chose, at any given moment.

**Measures**

The survey consists of questions regarding individual and family functioning and was constructed by Dr. E. Spruijt and Dr. I. van der Valk of the Department of Youth and Family. The survey contains many existing and validated instruments. In certain cases a shortened, but still validated, version of the instrument was applied to ensure the questionnaire could be filled in within one school hour.

Due to minor variations in the formulation of the survey questions, answer categories and/or included items, the scales were computed separately for each wave and standardized. This enabled the optimal use of sample size and allowed the separate scales to be compared.

**Internalizing problem behavior.** In order to measure internalizing problem behavior in students, the survey contained three instruments. First, ten out of the original 27 items from the Children's Depression Inventory (CDI; Craighead, Smucker, Craighead, & Ilardi, 1998) were included to measure depressive symptoms by computing the mean score. The questions were to be answered on a five-point scale varying from 1 (*not true at all*) to 5 (*absolutely true*). An example of such a question is "I can't sleep at night and am often tired." The Cronbach's Alpha scale reliability was estimated to be $\alpha = .88$ which is defined as good (Field, 2013).

Secondly, the questionnaire contained a revised version of the Screen for Child Anxiety Related Emotional Disorders (SCARED-R), which was translated to Dutch by Muris and Steerneman (2001), to measure anxiety. The SCARED-R originally consists of 38 items with a five-point scale to measure five types of anxiety: panic disorder, generalized anxiety disorder, separation anxiety disorder, school phobia and social phobia. In the survey used for this research only nine items are included that were measured on a three-point scale with 0 (*almost never*), 1 (*sometimes*) and 2 (*often*). The mean score was computed to measure anxiety. As an example, one of the items stated: "I worry if I will be ok." The items together form a scale of which the Cronbach's Alpha reliability was estimated to be $\alpha = .88$ which is defined as good (Field, 2013).

Finally, certain waves of this research used a questionnaire that included items of the Strengths and Difficulties Questionnaire (SDQ) to measure emotional problems and anxiety. Anxiety related topics were based on the subscale 'emotional symptoms' (Goodman, Meltzer & Bailey, 2003). The subscale reliability was (Cronbach's Alpha) $\alpha = .71$ which is defined as acceptable (Field, 2013). One of the questions was: "I am nervous in unfamiliar situations, I easily lose confidence."

**Externalizing problem behavior.** To measure externalizing problem behavior in

students, parts of the Direct and Indirect Aggression Scales (DIAS) (Björkqvist, Lagerspetz, & Osterman, 1992) were used. With a Cronbach's Alpha of $\alpha = .90$ this scale measures aggression among students by computing the mean score on the items. Statements like: "I often take revenge by spreading mean rumors about the other" were measured on a four-point scale varying from 1 (*never*) to 4 (*often*). The original DIAS consists of 23 items of which 11 are included in the survey.

Further, the survey includes a self-report questionnaire (Cronbach's Alpha $\alpha = .86$), constructed by Baerveldt, Van Rossem, and Vermande (2003) to measure delinquency. Fifteen out of the original 23 items were used, of which the mean score was computed as an indicator for delinquency. The questions addressed involvement in fights, thefts, etcetera in the past twelve months and were to be answered on a four-point scale with 1 (*never*), 2 (*once*), 3 (*two or three times*) and 4 (*four times or more*). Note that the delinquency questions were only answered by the students in secondary school.

**Sibling relationship.** Finally, the quality of the sibling relationship is measured by including part of the Network of Relationship Inventory (NRI; Furman & Buhrmester, 1985). This questionnaire consists of three scales; support, conflict, and dominance. In this survey only the support and conflict scale were included which results in questions like: "How much does your sibling really care about you?" The items were scored on a five-point scale ranging from 1 (*little to nothing*) to 5 (*more than anything*) of which the mean score was computed as indicator of sibling relationship quality. Both scales show a good Cronbach's Alpha reliability of $\alpha = .90$ for 'support' and $\alpha = .92$ for 'conflict'.

**Scale Construction**

In order to justify the construction of the internalizing and externalizing problem behavior scales the correlations between the separate scales, the proportion explained variance, and the mean factor loadings are shown in Table 1. Every mutual correlation

between the subscales turned out to be significant and all three scales explained a fair portion of variance (> 70%). With these promising numbers it was deemed justified to combine the separate subscales into the following larger scales internalizing problem behavior, externalizing problem behavior, and sibling relationship. Note that the scale sibling relationship quality consists of the subscales support and conflict. The items that formed the subscale were recoded so that a high score meant a high quality of the sibling relationship (i.e., little conflict and much support).

<<Insert Table 1 around here>>

**Analytical Strategies**

In order to answer the research and sub- questions, specific analyses were executed using IBM SPSS Statistics 22. As a first step the data were screened and any data entry errors that have occurred at the time of creating the file were deleted. What follows next is a summary of analyses that were carried out for each consecutive research question. For all analyses, a significance level of $p < .05$ was used (two-tailed).

The first question consists of a comparison between children from intact families and children from divorced families. An analysis of variance (ANOVA) was conducted, instead of an independent t-test comparison, to reduce the risk of committing a type I error.

For later analyses a sub sample of students with divorced or separated parents ($n = 1432$) will be used and distinctions will be made in only children ($n = 578$ ; 40.4%) and children with siblings ($n = 854$ ; 59.6%), students that own a pet ($n = 97$ ; 84.3%) and students that don't own a pet ($n = 18$ ; 15.7%).  The total number of respondents here is limited ($n = 115$) because only one wave of children was asked about their pets.

The second and third research question both involve siblings. Question two will be

answered by comparing children, from divorced families, with and without siblings in a linear regression analysis. An interaction effect will be added, between having siblings and problem behavior, to test if there is indeed a moderated relationship, which would indicate a protective factor. The scales of internalizing and externalizing problem behavior will form the dependent variables, the presence of siblings the independent variable and the latter will form an interaction effect with whether the child's parents are divorced.

Question three requires a subsample of children with siblings, since quality of a sibling relationship cannot be reported by only children. Linear regression analyses will show the extent to which quality of the sibling relationship significantly predicts reduced internalizing and externalizing problem of children of divorced parents.

The fourth and final question, whether pets can be protective factors for children of divorced parents, also uses a subsample of children of divorced families and requires a comparison between children with pets and children without pets on both scales of problem behavior. Finally a subsample of only children of divorced families with and without pets will be examined to test whether pets are to be considered protective factors for only children in divorced families. Both comparisons will be tested with linear regression analyses.

## Results

This section provides a summary of the results of the data analyses. First the general descriptives are displayed. Second, the results for each separate research question are presented.

### Descriptives

The descriptives of the five subscales constituting the scales internalizing and externalizing problem behavior are shown in Table 2 for both intact and divorced families. Due to the variation of items per wave the total number of respondents differs for the separate

scales.

<<Insert Table 2 around here>>

**Intact versus Divorced Families**

To test the first hypothesis an analysis of variance (ANOVA) was conducted. For internalizing problem behavior the descriptives were as follows. Intact: $n = 6168$, $M = 0$, $SD = 0.01$ and for divorced: $n = 1387$, $M = 0.21$, $SD = 1.00$. A significant Levene's test ($p < 0.01$), indicating heterogeneity of variances, was followed by the computation of a corrected F-statistic from both the Welch's and Brown-Forsythe test. Both tests showed the same significant result ($F(1,1892.81) = 50,27$, $p < .01$) indicating that children from divorced families report significantly more internalizing problem behavior compared to children from intact families.

For externalizing problem behavior the general descriptives show $n = 6167$, $M = -.03$ and $SD = .86$ for intact families and $n = 1391$, $M = .07$ and $SD = .98$ for divorced families. A significant Levene's test ($p < .01$) led to a corrected F-statistic from Welch's and Brown-Forsythe tests. Both tests showed the same significant result ($F(1,1900.90) = 11.13$, $p < .01$) indicating that children from divorced families report significantly more externalizing problem behavior compared to children from intact families. The first hypothesis is hereby confirmed.

**Siblings as Protective Factors**

The second hypothesis expected that children from divorced families with siblings report less internalizing and externalizing problem behavior than children from divorced families without siblings. The analyses were conducted using a subsample of children of divorced parents ($n = 1432$). For this hypothesis a linear regression analysis was conducted

with either internalizing or externalizing problem behavior as dependent variable and siblings/no siblings as the independent variable. Neither regression analyses showed a significant relationship as can be seen in Table 3. Initial conclusion is that this hypothesis is rejected.

<<Insert Table 3 around here>>

**Sibling Relationship as Protective Factor**

For the third research question a regression analysis was performed with internalizing and externalizing problem behavior as dependent variables and the scale for sibling relationship, consisting of low conflict and high support, as independent variable. The regression parameters are shown in Table 4. The negative Beta's on all of the reported scales indicate a negative regression line. Internalizing problem behavior was not significantly predicted by sibling relationship, but externalizing problem behavior was. Additional analyses on the separate subscales constituting externalizing problem behavior showed that children with a high sibling relationship quality significantly report less aggression ($p < .01$) than children that do not have such a sibling relationship. Children with and without a sibling relationship consisting of high support and low conflict do not significantly differ on the delinquency self report scores ($p = .176$). The above-mentioned results have partly confirmed the hypothesis.

<<Insert Table 4 around here>>

**Pets as Protective Factors**

The fourth and final research question considers pets to be protective factors for

children, without siblings, from divorced families. The regression analyses included having a pet as independent variable and internalizing and externalizing problem behavior as dependent variables. First, regression analyses including all children from divorced families were computed. Second, regression analyses were performed with a specific subsample of children from divorced families without siblings. In either case children from divorced families, with or without siblings, but *without* pets, formed the reference category. None of the regression analyses showed a significant result as displayed in Table 5. Initial conclusion hereby is that the hypothesis is rejected.

Additional analyses considering pets included an exploratory ANOVA to examine if there is any significant difference to be found between kinds of pets, in regard to internalizing and externalizing problem behavior of the children. The different kinds of pets included were: A dog, a cat, a rabbit or another pet. There was no significant difference in kinds of pets in regard to the children's internalizing problem behavior, but there was in regard to the children's externalizing problem behavior. Due to a significant Levene's test ($p < .01$) a corrected F-statistic was computed using the Welch's and Brown-Forsythe tests. Both tests showed significant results ($F(4,104) = 3.73$, $p = .020$ for Welch's and $F(4,104) = 3.83$, $p = .008$ for Brown-Forsythe. The Games-Howell post-hoc, homogeneity of variances not assumed, showed a significant difference between cats ($M = .35$ ; $SD = 1.22$) and dogs ($M = -.26$ ; $SD = .52$) $p = .045$. These results indicate that children from divorced families that own a dog report less externalizing problem behavior compared to children from divorced families that own a cat. Note that externalizing problem behavior is this analysis only includes aggression, because delinquency items were not incorporated in this specific wave of the survey. All other between group comparisons did not show any significant differences.

<<Insert Table 5 around here>>

**Conclusion and Discussion**

This study aimed to elucidate possible protective factors in the family environment of children from divorced parents. The precise research question was: 'What factors in the family environment can be considered protective factors for children of divorce?' This study specifically analyzed the effects of siblings, sibling relationships and pets on both internalizing and externalizing problem behavior. In the following section the separate sub-questions will be discussed in sequence.

The first question addressed whether there were any differences in internalizing and externalizing problem behavior when comparing children from divorced families and children from intact families. The results show, as hypothesized, a significant difference between children from divorced families and children from intact families, for both internalizing and externalizing problem behavior. This result was not surprising because this difference has been previously shown in a large number of studies on the association between children of divorced families and their well-being. Such studies have, for example, documented the fact that children from divorced families tend to report more internalizing and externalizing problem behavior compared to children from intact families (Amato, 2001; 2010; Van der Valk et al., 2005).

Secondly, according to our second hypothesis, siblings were expected to have a protective role in the adjustment of children of divorced families. The results of the present analyses showed a hint of a negative relationship between having siblings and internalizing problem behavior. However, this relationship was not significant. The regression coefficients show a negative trend of the regression line for internalizing problem behavior, emotional problems, depression and delinquency. This indicates that respondents, from divorced families, who have siblings, report less of these four specific problem behaviors. Although the results are not significant, they are in line with results from the research by Branje et al.

(2004) in which having siblings significantly predict lower reported internalizing and externalizing problem behavior in children. However, their research sample does not specifically include children from divorced families.

The family systems theory by Bowen (1966) describes a family as a closed system in which every member interacts with and reacts to each other. When something happens to one member it may cause a ripple effect to the other members of the family. A possible explanation for the findings in this study is that the divorce has caused a change in dynamics between family members that the presence of siblings in itself is not enough to cause a reduction in reported problem behavior. However, these results should be taken into account in future related research and perhaps attention could be given to obtaining a larger sample than was available in this dataset for this question since the small sample may have affected the obtained results.

The third hypothesis considered sibling relationship quality to be a protective factor against internalizing and externalizing problem behavior for children from divorced families. This hypothesis can be accepted: A sibling relationship significantly predicts lesser externalizing problem behavior, specifically aggression, in children from divorced families. Remarkably, solely having siblings does not significantly predict reduced problem behavior, but the quality of the relationship with a sibling can provide a protective effect against externalizing problem behavior. These results are in line with the results of Branje et al. (2004) in which perceived support in a sibling relationship was linked to reduced reported externalizing problem behavior in children. Additionally, Gass et al. (2007) found that after having experienced a stressful life event children who had affectionate relationships with their siblings were less likely to experience a change in problem behavior. In this study it has been proven that the protective effect of a sibling relationship is also present in children form divorced families.

Finally the fourth sub-question and hypothesis expected the presence of pets in the household to have a protective effect against internalizing and externalizing problem behavior of children of divorced families. This hypothesis could not be accepted on the basis of our data. Although the result is not significant it is noteworthy that the regression analyses for externalizing problem behavior showed a negative regression line both for children from divorced families with siblings and for children from divorced families without siblings. These results hint at a protective effect of having pets regarding externalizing problem behavior. At this point is should be remarked that the sample of respondents from divorced families and that own pets is very limited (n = 97) because the specific question was only included in the survey in the wave of 2009. Even with a sample this small it was possible to, almost, define a significant relationship between the presence of pets and reduced internalizing and externalizing problem behavior in children from divorced families. In addition to this, considering the literature written about the protective effects of pets (Sable, 1995; O'Haire, 2010; Siegel, 1990; Wells, 2009), there seems to be more to this relationship than could be shown in the present sample. Also the exploratory analyses showed that there is a significant difference between different pets with regard to externalizing problem behavior of children from divorced families. A difference with previous research on the beneficial effects of pets is that this study specifically includes children from divorced families. The specificity and need for protective factors of this targeted sample calls for future researchers to investigate. In conclusion, of all four sub-questions, the results of this study have confirmed that protective factors *are* present in the family environment of children of divorced families.

**Strengths and Limitations**

A definitive strength of this study is the innovativity. Some of the executed analyses have, until now, not yet been performed specifically on a sample of children of divorced

families. These results grant insights in actual and potential protective factors in the family environment of the children.

One limitation can be found in the limited sample size that was used for some of the questions. Some of the research questions requested specific subsamples of children. This resulted in a varying number of respondents between the research questions. Also, the subsamples were restricted to children that satisfied the required demands, such as having siblings and/or pets, for the specific analyses, which resulted in small groups of children.

Additionally some notes must be placed with the results and the conclusions. For example the fact that a parental divorce can be a sensitive subject for children, which may have caused resistance and could have lead to untruthfully answering the questions by some children. Therefore the results and conclusions must be interpreted with caution.

**Implications**

Despite the fact that the family environment, especially in times of a parental divorce, may cause a lot of stress, it can also provide the child with significant protective factors. The protective role of the quality of a sibling relationship has been proven to reduce externalizing problem behavior in children from divorced parents. Also, other very promising relationships have been shown such as the potential protective effects of pets in the household. With these findings this study aims to inspire other researchers to explore these, and other, protective relationships present in the family environment that could benefit children from divorced families more thoroughly. The family system interacts with and responds to each other, both in good times and in bad times. This study confirms the importance to regard families as a whole.

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Footnotes

[1] Note that these numbers add up to 99.8%. 14 (0,2%) respondents did not specify their sex.

**Appendix A: Tables**

Table 1

*Correlations, explained variance and the mean factor loadings for all used scales.*

| (Sub)scale | N | Correlation $r$ | Proportion explained variance $r^2$ | Mean factor loading |
|---|---|---|---|---|
| Internalizing problem behavior | | | 80,79% | .899 |
| SDQ - Anxiety | 1902 | .664** | | |
| SDQ - Depression | 4502 | .697** | | |
| Anxiety - Depression | 5001 | .770** | | |
| | | | | |
| Externalizing problem behavior | | | 73,81% | .859 |
| Aggression - Delinquency | 6174 | .476** | | |
| | | | | |
| Sibling relationship | | | 74,32% | .862 |
| Support - Conflict | 1524 | .486** | | |

** = significant correlation at the 0.01 level (two-tailed).

Table 2

*Descriptive statistics for the (sub)scales split for children from intact and divorced families.*

| Scale | N | Min | Max | M | SD |
|---|---|---|---|---|---|
| *Intact* | | | | | |
| Internalizing | 6168 | -1.37 | 5.11 | 0.00 | 0.89 |
| Externalizing | 6176 | -1.18 | 6.72 | -0.03 | 0.86 |
| SDQ | 3594 | 1.00 | 3.00 | 1.52 | 0.45 |
| Depression | 6154 | 1.00 | 5.00 | 1.91 | 0.76 |
| Anxiety | 4043 | 1.00 | 5.00 | 1.86 | 0.71 |
| Aggression | 6154 | 1.00 | 4.00 | 1.55 | 0.47 |
| Delinquency | 4963 | 1.00 | 4.00 | 1.17 | 0.32 |
| *Divorced* | | | | | |
| Internalizing | 1387 | -1.37 | 5.41 | 0.21 | 1.02 |
| Externalizing | 1391 | -1.18 | 5.99 | 0.07 | 0.98 |
| SDQ | 816 | 1.00 | 3.00 | 1.59 | 0.48 |
| Depression | 1381 | 1.00 | 5.00 | 2.10 | 0.86 |
| Anxiety | 874 | 1.00 | 5.00 | 2.01 | 0.80 |
| Aggression | 1383 | 1.00 | 4.00 | 1.56 | 0.48 |
| Delinquency | 1114 | 1.00 | 4.00 | 1.24 | 0.41 |

*Note.* All values are standardized, with M = 0 and SD = 1.

Table 3

*Regression parameters for both internalizing and externalizing problem behavior with having siblings as independent variable (n = 1432).*

| Scale | Constant | $\beta$ | $p$ | $r^2$ |
|---|---|---|---|---|
| Internalizing problem behavior | .230 | -.015 | .582 | .000 |
| Externalizing problem behavior | .029 | .032 | .240 | .001 |

*Note.* A dummy variable was used to indicate siblings with 1 = siblings and 0 = no siblings.

Table 4

*Regression parameters for both internalizing and externalizing problem behavior and separate subscales aggression and delinquency with sibling relationship as independent variable (n = 854).*

| (Sub)scale | Constant | $\beta$ | $p$ | $r^2$ |
|---|---|---|---|---|
| Internalizing problem behavior | .189 | -.073 | .281 | .005 |
| Externalizing problem behavior | .492 | -.169 | **.011** | .029 |
| Aggression | .390 | -.212 | **.001** | .045 |
| Delinquency | .617 | -.092 | .176 | .009 |

*Note*. The bold printed p-values are significant at the 0.05 level (two-tailed).

Table 5

*Regression parameters for both internalizing and externalizing problem behavior for all children from divorced families and children from divorced families without siblings (n = 115).*

| (Sub)scale | Constant | $\beta$ | $p$ | $R^2$ |
|---|---|---|---|---|
| *Divorced families* | | | | |
| Internalizing problem behavior | .177 | .021 | .829 | .000 |
| Externalizing problem behavior | .521 | -.181 | .059 | .033 |
| *Divorced families without siblings* | | | | |
| Internalizing problem behavior | .177 | .010 | .909 | .000 |
| Externalizing problem behavior | .521 | -.175 | .053 | .030 |

*Note.* A dummy variable was used to indicate pets with 1 = pets and 0 = no pets.