



Associations of Perceived Sibling and Parent-Child Relationship Quality With Internalizing and Externalizing Problems: Comparing Indian and Dutch Early Adolescents

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Abstract

The aims of the present study were (a) to examine whether Dutch and Indian early adolescents differ concerning sibling and parent-child relationship quality and externalizing and internalizing problems, and (b) to compare the associations between sibling and parent-child relationship quality and externalizing and internalizing problems for Indian and Dutch early adolescents. Our sample consisted of 274 Dutch (mean age = 10.9 years) and 236 Indian early adolescents (mean age = 10.8 years). Questionnaires were administered in the final grades of 15 Dutch primary schools and six Indian English-language middle schools. Indian early adolescents reported more sibling warmth and parental negative interaction than Dutch early adolescents. However, associations between sibling and parent-child relationship quality and externalizing and internalizing problems were similar. Our study indicates that cross-cultural

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differences may exist in quality of sibling and parent-child relationships, but not in their impact on externalizing and internalizing problems. More cross-cultural research concerning family relationship quality and its impact on early adolescent psychosocial development is needed to confirm our findings.

Keywords

cross-cultural differences, sibling relationship, parent-child relationship, internalizing problems, externalizing problems

Over the last decades, there is increasing evidence for the importance of sibling and parent-child relationship quality in the development of early adolescent problem behavior (Buist, Deković, & Gerris, 2011; Buist, Deković, & Prinzie, 2013). However, evidence concerning early adolescent development has mainly been derived from studies in Western societies (Raffaelli, Lazarevic, Koller, Nsamenang, & Sharma, 2013). Much less is known concerning the extent to which the quality of sibling and parent-child relationships is equally important for early adolescent developing in non-Western societies. Examining the importance of family relationships for early adolescent development in different cultures is a meaningful next step to identify cultural and psychological variations and generate more universal theories applicable to a broader range of cultures. In the current study, we will examine whether quality of sibling and parent-child relationship and their associations with internalizing and externalizing problems are similar for Dutch and Indian children in late childhood and early adolescence.

Sibling and Parent-Child Relationship Quality and Internalizing and Externalizing Problems

The importance of family relationships—including sibling and parent-child relationships—lies in the nature of these relationships: the frequency and amount of interactions, the durability of the relationship, existence of ascribed roles, accessibility, and degree of common experiences (Cicirelli, 1976; Lamb & Sutton-Smith, 1982). As such, these relationships form a unique and important context in which children develop social and emotional skills. It is thought that positive family relationships stimulate the development of healthy emotion regulation skills (Kennedy & Kramer, 2008; Sheffield Morris, Silk, & Steinberg, 2007) and prosocial behavior (Davidov & Grusec, 2006; Knafo & Plomin, 2006; Pike, Coldwell, & Dunn, 2005), and may therefore decrease the risk for developing emotional and behavioral problems.

There is indeed evidence that warm sibling relationships are related to less internalizing (Buist et al., 2013; East & Rook, 1992; Kim, McHale, Crouter, & Osgood, 2007) and less externalizing problem behavior (Branje, van Lieshout, van Aken, & Haselager, 2004; Buist et al., 2013; Dunn, Slomkowski, Beardsall, & Rende, 1994). In addition, children and adolescents with warm and loving relationships with their parents also show less problem behavior (Barnes & Farrell, 1992; Verhoeven, Junger, van Aken, Deković, & van Aken, 2010). More specifically, higher levels of parental warmth result in lower levels of internalizing problems (Buist et al., 2011; Laible, Carlo, & Raffaelli, 2000), as well as externalizing problems (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006; Buist et al., 2011; Meeus, Branje, & Overbeek, 2004). These findings are consistent with attachment theory: positive attachment experiences in early life result in an internal working model of attachment that includes a favorable image of the self as worthy of love and affection and of the surrounding social world as dependable and nurturing (Bowlby, 1973; Bretherton, 1985), resulting in less anxiety, depression, delinquency, and aggression.

Conflictive family relationships, on the other hand, may form a risk factor for emotional and behavioral problems. Social learning theory predicts that conflict and hostility in the family context may generalize to other contexts, for example, the peer context (Stauffacher & DeHart, 2006). Indeed, sibling conflict has been linked to the development of externalizing problem behavior (Bank, Patterson, & Reid, 1996; Buist et al., 2013; Kim, Hetherington, & Reiss, 1999; Natsuaki, Ge, Reiss, & Neiderhiser, 2009). Likewise, studies have generally shown that children and adolescents who report high levels of conflict and hostility in the relationship with their parents generally show increased levels of problem behavior (Barber & Delfabbro, 2000; Beam, Gil-Rivas, Greenberger, & Chen, 2002; Burt, Krueger, McGue, & Iacono, 2003; Lau, Jernewall, Zane, & Myers, 2002; Shagle & Barber, 1993). Negative interaction between parent and child has also often been linked to externalizing problem behavior (Buehler, 2006; Buist et al., 2011; Gerard, Krishnakumar, & Buehler, 2006). Children in a hostile parent-child relationship are at risk for adopting aggressive and uncaring interaction styles during childhood and adolescence (Scaramella, Conger, & Simons, 1999).

Experiencing conflictive family relationships is also thought to be related to internalizing behavior. Stress-oriented theories posit that the exposure to stressors, such as negative family interactions, plays a key role in the development of internalizing problems (Greenberger, Chen, Tally, & Dong, 2000; Sheeber, Hops, & Davis, 2001). Sibling conflict (Buist et al., 2013; Kim et al., 2007; Pike, McGuire, Hetherington, Reiss, & Plomin, 1996; Stocker, 1994; Vogt Yuan, 2009) and negative parent-child interactions have indeed

been linked to higher levels of internalizing problems (Gerard et al., 2006; Greenberger et al., 2000; Shagle & Barber, 1993; Sheeber et al., 2001).

Generally, studies have often found stronger effects for negative relationship aspects, which is consistent with the general principle that bad is stronger than good (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). This pattern, that has been found for many psychological and sociological concepts, can be explained by evolutionary considerations. Negative events are more important for survival than positive events (e.g., learning that a plant is poisonous is more essential than learning that a plant tastes good). Negative events point very strongly to a need for adaptation, so it seems logical that effects of negative events are stronger and more pervasive. Therefore, positive as well as negative relationship aspects were studied to examine these potential differences.

There are also strong indications that paternal versus maternal warmth and conflict may affect child functioning differently (Verhoeven, Bögels, & van Bruggen, 2012), with stronger effects for father-child positive and negative interactions (Buist et al., 2011). We therefore chose to study father-child and mother-child relationships separately. Additionally, the sibling, father-child, and mother-child relationship do not function in isolation. These family subsystems are part of the family system, an interactive system of individuals and relationships (Cox & Paley, 1997). Sibling and parent-child relationships are mutually interdependent (Erel, Margolin, & John, 1998; Feinberg, Reiss, Neiderhiser, & Hetherington, 2005) and should therefore be studied together. Therefore, in this study, we will examine the effects of the sibling, father-child, and mother-child relationship (positive as well as negative aspects) on early adolescent problems simultaneously.

Cross-Cultural Differences

The overview above reveals that we know that warmth and negativity in sibling and parent-child relationships affect child and adolescent internalizing and externalizing problems. It is important to note that most of these studies were performed in Western societies. A concept that has often been used to explain cross-cultural differences is the dichotomy of individualism and collectivism. Individualistic societies are societies in which a person is more valued as an individual with equal and free status, without being strongly attached to social relationships and the community. In contrast, in collectivistic societies the focus is more on interpersonal relationships; people are seen as dependent on the social order (Killen & Wainryb, 2000; Raeff, Greenfield, & Quiroz, 2000). Following Killen and Wainryb's (2000) notion that this dichotomy tends to stereotype cultures, nowadays individualism and collectivism are

considered characteristics that coexist within cultures, with cultures showing varying degrees of individualistic and collectivistic features. There are some important differences between Dutch and Indian culture concerning the self and connectivity that have been confirmed by many scholars and are considered embedded deep with these societies (see for example, Chaudhary & Sharma, 2012; Meeus, 2012). Additionally, using Hofstede's index of individualism, Dutch society scores extremely high, much higher than India (The Hofstede Centre, 2015). Therefore, the Netherlands can be considered a country with more individualistic features, and India a country with more collectivistic features (Sandhu & Kaur, 2012).

As interpersonal relationships are valued differently in more individualistic (Western) and more collectivistic (non-Western) societies, the processes with which family relationships affect children's externalizing and internalizing problems may be different in significance and strength between these different types of societies.

From earlier work, we know that cultural differences exist between Western and non-Western societies in sibling and parent-child relationships, particularly concerning the roles that parents and siblings play and the degree to which these relationships may be characterized by warmth and conflict (Cicirelli, 1994; Nuckolls, 1993; Updegraff, McHale, Killoren, & Rodriguez, 2011; Weisner, 1993). Sibling relationships have been defined as a love-hate, emotionally intense, relationship (Deater-Deckard, Dunn, & Lussier, 2002; Noller, 2005), reflecting Western society's emphasis on competition and individuation (Nuckolls, 1993). In more collectivistic societies, siblings play a more prominent role in a person's life, and norms concerning sibling interdependence are more strongly emphasized (Updegraff et al., 2011). The sibling relationship in more collectivistic societies is characterized by self-evident, mutual responsibilities and social obligations that last a lifetime (Nuckolls, 1993). In South Asia, the sibling relationship is actually considered the most important family relationship (Updegraff et al., 2011). Although in all types of societies sibling relationships are characterized by affection, play, nurturance, and conflict, in collectivistic societies solidarity is more strongly encouraged, and rivalry between siblings is viewed as problematic and more strongly discouraged than in individualistic societies due to lifelong responsibilities and obligations (Seymour, 1993). Therefore, the emotional intensity of sibling relationships may be less pronounced and these relationships may be warmer and less conflictive in collectivistic than in individualistic societies (Beals & Eason, 1993). Research has indeed shown significantly higher levels of sibling companionship, intimacy, and satisfaction and lower levels of sibling conflict for Indonesian adolescents as compared with American adolescents (French, Rianasari, Pidada, Nelwan, & Buhrmester, 2001).

Similarly, quality of the parent-child relationship varies among different cultures (Deater-Deckard et al., 2011). In more collectivistic cultures, parent-child relationships tend to be more hierarchical and less egalitarian compared with individualistic cultures, which may lead to less warmth (Huiberts, Oosterwegel, VanderValk, Vollebergh, & Meeus, 2006). Additionally, the stronger emphasis on compliance in these collectivistic cultures is thought to result in lower levels of conflict between parents and their children (Chen, Greenberger, Lester, Dong, & Guo, 1998). Indeed, children and adolescents from collectivistic cultural groups have indicated significantly lower levels of parental warmth than children and adolescents from individualistic cultural groups (Chen et al., 1998; Deater-Deckard et al., 2011). Additionally, studies comparing parent-child conflict have shown significantly less conflicts in collectivistic countries than in individualistic cultural groups (e.g., Chen et al., 1998; Dmitrieva, Chen, Greenberger, & Gil-Rivas, 2004).

There have also been a limited number of cross-cultural studies concerning differences in externalizing and internalizing problems. For example, a large-scale cross-cultural study across 24 countries suggested that cultural factors such as ethnicity, religion, geography, and political economic system were not linked to differences in problem behavior scores (Rescorla et al., 2007). Based on this earlier work, there seems to be limited evidence for cross-cultural differences in externalizing and internalizing problems.

The fact that there may be differences in quality of the sibling and parent-child relationship between the Netherlands and India does not automatically mean that their impact on early adolescent psychosocial functioning is different. In studies on ethnic differences in the effect of family relationships on child functioning, two opposing models have been suggested: the cultural values model and the ethnic equivalence model (Lamborn & Felbab, 2003). The *cultural values model* predicts that ethnic or cultural differences in sibling and parent-child relationship quality produce different effects of these relationships. Conversely, the *ethnic or cultural equivalence model* suggests that there are no ethnic or cultural differences in the impact of family relationships on child or adolescent outcome, reflecting universality of influence.

For the parent-child relationship, both the cultural values model and the ethnic equivalence model have been tested and supported by empirical findings. For example, the cultural values model has been confirmed by Smith and Krohn (1995), who found that parent-child attachment had a significant effect on delinquent behavior for White and African American adolescents, but not for Hispanic adolescents. Conversely, many other studies have found evidence confirming the ethnic equivalence model, indicating that whereas there may be differences in quality of parent-child relationship as well as externalizing and internalizing problems, the processes by which parent-child relationship

quality (closeness, support, conflict) affects these problems are similar for different ethnic groups (e.g., Eichelsheim et al., 2010; Vazsonyi, Trejos-Castillo, & Huang, 2006).

For the association between sibling relationship quality and externalizing and internalizing problems, the cultural values model and ethnic equivalence model have rarely been tested. In one of the few studies that did test these models for sibling relationships, no significant cross-ethnic differences were found in the effect of sibling relationship quality on level and change in externalizing problems, anxiety, and depression (Buist et al., 2014), supporting the ethnic equivalence model.

Concerning the parent-child as well as sibling relationship, there seems to be more empirical support for the ethnic equivalence model, but the studies testing these models have mainly examined cross-ethnic differences within one particular country, and not necessarily differences between different countries and cultures. Therefore, we will examine whether the link between quality of the parent-child and sibling relationship and externalizing and internalizing problems is different (suggesting the cultural values model) or similar (suggesting the ethnic equivalence model) for Dutch and Indian early adolescents.

The Present Study

The aim of the present study is to (a) examine whether Dutch and Indian early adolescents differ concerning perceived sibling and parent-child relationship quality and externalizing and internalizing problems, and (b) to compare the associations between sibling and parent-child relationship quality and externalizing and internalizing problems for Indian and Dutch early adolescents, thus testing the applicability of the cultural values and ethnic equivalence models. Our study builds upon the existing body of mostly Western society-based research by evaluating parent and sibling associations with internalizing and externalizing behaviors simultaneously, in a cross-cultural comparison of Dutch and Indian early adolescents. By testing the cultural values model and cultural equivalence model for sibling relationships as well as parent-child relationships, the current study aims to expand our understanding of the nature and importance of these relationships for early adolescent development.

Based on earlier cross-cultural research (Beals & Eason, 1993; French et al., 2001), we expect more sibling warmth and less sibling conflict for Indian than for Dutch early adolescents. Concerning parent-child relationship quality, we expect higher levels of warmth as well as negative interaction for Dutch early adolescents as compared with Indian early adolescents, analogous to earlier cross-cultural studies (Chen et al., 1998; Deater-Deckard

et al., 2011). We do not expect differences in externalizing and internalizing problems (Rescorla et al., 2007). While we hypothesize mean differences in sibling and parent relationship quality across cultures, there is no empirical reason to expect sibling and parent-child relationship quality will be any more or less related to internalizing and externalizing problems given the importance of family relationships across cultures and the fact that more empirical evidence has been found for the ethnic equivalence model, in which effects are similar across cultures (Buist et al., 2014; Eichelsheim et al., 2010; Vazsonyi et al., 2006).

Method

Procedure and Participants

Questionnaires were administered among 15 Dutch primary schools spread across the Netherlands (Grades 7 and 8) and six Indian English middle schools (Grades 7 and 8). In the Netherlands, seven of the schools were located in urban communities (with population more than 100,000), two schools were located in semi-urban communities (with population between 25,000 and 50,000), and the remaining six schools were located in small towns (with population between 2,000 and 8,500). In India, schools were located in Pune (population more than 3,000,000), the second largest city of the State of Maharashtra. The schools were selected and approached by primary investigators with the help of Jnana Prabodhini Institute of Psychology and sent a letter in advance, followed by a meeting or telephone contact with the principal which resulted in permission to let the pupils participate in the research. In the Netherlands, schools were selected and invited to participate by research assistants. A passive consent procedure was applied. Mean participation rate of pupils in participating schools was 92% in the Netherlands and 96% in India. The participating Dutch schools were representative of Dutch primary schools concerning educational system, class size, and religiosity. The participating Indian schools were representative of English-medium middle schools. About 20% of Indian school-aged children attend English-medium schools (Nagarajan, 2015). Ethnic diversity in the Dutch schools was also representative of the Dutch national figures: 18.3% of our Dutch sample had an ethnic minority background, compared with 21.4% in the Dutch population (Statistics Netherlands [Centraal Bureau voor de Statistiek], 2014). No information about ethnicity was available from the Indian sample. All data were collected following institutional and professional ethical guidelines for research with minors. Parents were informed of the study beforehand (including purpose, length, voluntary nature, confidentiality, and contact information of the researchers for questions) and appropriate passive consent

procedures were used (parents had 2 weeks to inform the school of their refusal to let children participate using a reply slip). The children were explicitly instructed at the time of data collection that their participation was entirely voluntary (they did not have to participate and could stop filling out the questionnaire at any time without explanation) and that anonymity of their data was guaranteed. All children in the classroom received a small present (a pencil or an eraser), whether they completed the questionnaire or not.

All early adolescents filled out the questionnaires in their own classroom. Research assistants as well as the children's regular teachers were available for questions. In the Netherlands, a Dutch-language questionnaire was administered, whereas in India an English version was used, as in English-language middle schools all subjects are taught in English. Back translation was used for the translation process of the questionnaires. After completion, the children received a small gift (e.g., a colorful pen or eraser).

Participants of our study include 299 Dutch and 298 Indian early adolescents. Sample characteristics of the Dutch and Indian sample, as well as results of difference tests between the two samples can be found in Table 1. All participants in the current study came from two-parent families and had at least one sibling. There were some significant differences between the Dutch and Indian sample concerning several demographic variables. The Dutch sample was significantly older than the Indian sample, and the age difference between Indian siblings was significantly larger. Concerning household composition, there were also differences between the Dutch and Indian sample. Half of the Indian early adolescents indicated that they lived with their parents and siblings only, and the other half indicated that they lived in an extended family, including grandparents, aunts, uncles, and/or cousins, which is a common occurrence in Indian society. Of the Dutch early adolescents, 87.8% lived with their parents and siblings only. No significant differences were found between the two samples concerning sibling gender composition, number of siblings, and birth order of the target adolescent.

Whereas children did not provide information about their own socioeconomic status (SES), for the Dutch sample we were able to calculate an estimate for SES, based on the neighborhood (postal code) in which schools were located. These estimates indicated that 87.1% of the Dutch sample attended schools in neighborhoods with average or above average SES. In the Indian sample, most children were from middle or higher SES families, because in India, mostly middle or higher SES families send their children to English-speaking schools (Aula, 2014).

Data were collected during two consecutive years, with different schools participating each year, resulting in two cross-sectional data sets (2008: n Indian sample = 124, n Dutch sample = 109; 2009: n Indian sample = 174,

Table 1. Means, Standard Deviations (Between Brackets), and Percentages for Sample Characteristics of Dutch and Indian Sample, and *t* Test and Chi-Square Differences.

| | Netherlands | India | Difference (<i>t</i> test / chi-square) |
|--|--------------|--------------|--|
| <i>n</i> | 299 | 298 | — |
| Mean age (years) | 10.94 (0.62) | 10.81 (0.80) | 2.19* |
| Mean number of siblings | 1.76 (0.91) | 1.95 (2.25) | -1.31 |
| Mean birth order adolescent | 1.88 (1.04) | 1.94 (1.45) | -0.58 |
| Percentage boys | 50.5% | 53.7% | 0.61 |
| Percentage same-sex siblings | 51.0% | 45.1% | 2.05 |
| Mean age difference between siblings (years) | 2.80 (1.68) | 4.28 (2.30) | -8.36*** |
| Percentage living in nuclear family | 87.8% | 50.0% | 98.19*** |

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

n Dutch sample = 190). Data from these waves were combined in order to improve power for the analyses. For sibling and parent-child relationship quality, the same questionnaire was used for both data collections. For externalizing and internalizing problems, different questionnaires were used in each of the 2 years of data collection, which will be explained in the Measures section. To provide each child with comparable scores, scales were standardized before merging the different data sets. Analyses are based on these standardized scales. We checked whether there were differences between the two cohorts in scores on these standardized scales of sibling and parent-child relationship quality as well as internalizing and externalizing problems. None of these differences were significant.

Measures

Sibling relationship quality. Warmth and conflict in the sibling relationship were measured by the Sibling Relationship Questionnaire (SRQ; Buhrmester & Furman, 1990). Early adolescents were asked to fill out questions about the relationship with the sibling closest to them in age. All items were rated along a 5-point Likert scale ranging from 1 = *hardly at all* to 5 = *extremely much*. The *Warmth scale* (15 items) consisted of the SRQ scales Affection, Companionship, Intimacy, Admiration of and Admiration by sibling. This scale had a Cronbach's alpha of .93 for the Dutch and .87 for the Indian sample. A sample item is as follows: "How much does this sibling admire and respect

you?” The *Conflict scale* (6 items) consists of the SRQ Quarreling and Antagonism scales. One item from the Antagonism scale considerably lowered the scale’s reliability and was therefore removed. This eight-item Conflict scale had a Cronbach’s alpha of .91 for the Dutch and .76 for the Indian sample. A sample item is “How much do you and this sibling argue with each other?”

Parent-child relationship quality. Support and negative interaction with father and mother were measured with items from the Network of Relationship Inventory (NRI; Furman & Buhrmester, 1985, 1992). Early adolescents answered 12 questions about the relationship with their father and mother. The *Support scale* consists of six items for each parent (e.g., “How much does your father treat you like you’re admired and respected?”), and had a Cronbach’s alpha of .84 for father and .80 for mother in the Dutch sample and .71 for father and .70 for mother in the Indian sample. The *Negative interaction scale* also consists of six items for each parent (e.g., “How much do you and your mother argue with each other?”), and had a Cronbach’s alpha of .86 for father and .84 for mother in the Dutch sample and .70 for father and .76 for mother in the Indian sample. All items were rated along a 5-point Likert scale ranging from 1 = *little or none* to 5 = *the most*.

Externalizing and internalizing problems. Two different measures were used to assess externalizing and internalizing problems, one in 2008 and another in 2009. In 2008, externalizing and internalizing problem behavior was measured using the Nijmegen Problem Behavior List (NPBL Research version; De Bruyn, Scholte, & Vermulst, 2005). Items were formulated on the basis of appropriateness for use in a subclinical population, and represent relevant problems in adolescence that cause some concern, but are not serious enough for clinical intervention. The items were rated on a 5-point scale (1 = *does not apply to me at all* to 5 = *applies to me very well*). To assess externalizing problems, the Aggression scale was used (five items, e.g., “I fight a lot”) which had a Cronbach’s alpha of .71 for the Dutch and .68 for the Indian sample. To assess internalizing problems, the Anxiety/Depression scale was used (five items, e.g., “I worry a lot”). The Internalizing problems scale had a Cronbach’s alpha of .75 for the Dutch and .58 for the Indian sample.

In 2009, we decided to use a more extensive and widely publicized questionnaire: the Youth Self-Report (YSR; Achenbach, 1991; Verhulst, Van der Ende, & Koot, 1997). Externalizing and internalizing problems were measured with the Aggression and Anxiety/depression scales of the YSR. Participants indicated their externalizing and internalizing problems over the past 6 months on a 3-point Likert scale (1 = *not true*, 2 = *somewhat or*

sometimes true, and 3 = *very true or often true*). Sample items are “I argue a lot” for externalizing problems and “I worry a lot” for internalizing problems. A large comparison study indicated considerable consistency in problem behavior scores across 24 countries (Rescorla et al., 2007). Cronbach’s alpha for YSR externalizing problems (19 items) were .83 for the Dutch and .67 for the Indian sample. Cronbach’s alpha for internalizing problems (14 items) were .83 for the Dutch and .72 for the Indian sample.

Compared with the NPBL, the YSR contains additional items that represent more overt acts of aggression (e.g., vandalism, physical attack), or slightly more extreme emotional problems (e.g., feelings of worthlessness or inferiority). However, four of the five items of each NPBL scale are also incorporated in the YSR (e.g., fighting, arguing, threatening with violence, teasing for Aggression; feeling that nobody loves him/her, worrying, feelings of sadness and unhappiness for Anxiety/Depression).

Several steps were taken to provide each child with a comparable problem behavior score, because both questionnaires used different Likert scales. First, scales were rescaled by multiplying each scale with the number of answer categories of the other scale (i.e., YSR scales were multiplied with 5, and NPBL scales were multiplied with 3). Next, the scales were standardized before merging the two data sets from 2008 and 2009. Analyses are based on these rescaled standardized scales. To ensure that the difference between NPBL and YSR measures did not influence our results, we tested whether rescaled standardized scales of externalizing and internalizing problems differed between the 2008 NPBL measure and the 2009 YSR measure. We found no significant differences between measurements in these rescaled standardized scales, which indicates that for externalizing as well as internalizing problems, scores based on the NPBL were not statistically different from scores based on the YSR (respectively $t = .05$, $p = .96$ for Aggression and $t = .22$, $p = .83$ for Anxiety/Depression).¹

Results

Cross-Cultural Differences in Sibling and Parent-Child Relationship Quality and Externalizing and Internalizing Problems

First, we examined whether Dutch and Indian early adolescents differed significantly in their mean scores on sibling and parent-child relationship quality as well as on externalizing and internalizing problems. Because the samples differed significantly in age, mean age difference between the siblings, as well as living arrangements, we controlled for these variables in the analyses.

Table 2. Multivariate Analysis of Variance (MANOVA) Results of Z-Scores of Relationship Quality, and Externalizing and Internalizing Problems Between the Netherlands and India (Controlling for Age, Sibling Age Spacing, and Living Arrangement).

| | Netherlands (n = 278) | India (n = 241) | F | η^2 |
|---------------------------|--------------------------|--------------------|----------|----------|
| Sibling relationship | | | | |
| Warmth | -.30 | .33 | 28.64*** | .05 |
| Conflict | .07 | -.13 | 1.63 | .00 |
| Father-child relationship | | | | |
| Support | -.04 | .07 | 0.54 | .00 |
| Negative interaction | -.22 | .13 | 5.95* | .01 |
| Mother-child relationship | | | | |
| Support | -.01 | -.04 | 0.75 | .00 |
| Negative interaction | -.21 | .17 | 9.18** | .02 |
| Problem behavior | | | | |
| Externalizing | -.34 | .36 | 47.06*** | .08 |
| Internalizing | -.33 | .36 | 59.77*** | .10 |

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

Results of these analyses can be found in Table 2. Indian early adolescents reported significantly more warmth conflict in the sibling relationship than Dutch early adolescents, as well as more negative interaction in the father- and mother-child relationship. Additionally, Indian early adolescents scored significantly higher on externalizing and internalizing problem behavior than Dutch early adolescents. No significant differences were found for sibling conflict nor for support in the father-child and mother-child relationship.

Associations Between Sibling and Parent-Child Relationship Quality and Externalizing and Internalizing Problems

Associations between indicators of sibling and parent-child relationship quality were similar for the Dutch and Indian sample (see Table 3), again controlling for sibling age spacing and living arrangements. The Indian sample showed slightly fewer significant associations between positive and negative indicators of the same family relationship (e.g., between sibling warmth and sibling conflict) than the Dutch sample. Almost all associations of sibling and parent-child relationship quality with externalizing and internalizing problems were statistically significant for both samples, especially for negative indicators of relationship quality.

Table 3. Correlations of Relationship Quality, and Externalizing and Internalizing Problems (Controlling for Age, Sibling Age Spacing, and Living Arrangement).

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------------------|---------|--------|---------|--------|---------|--------|--------|--------|
| Sibling relationship | | | | | | | | |
| 1. Warmth | — | -.19** | .46*** | -.04 | .49*** | -.11 | -.20** | -.12 |
| 2. Conflict | -.48*** | — | -.10 | .32*** | -.10 | .37*** | .37*** | .30*** |
| Father-child relationship | | | | | | | | |
| 3. Support | .45*** | -.18** | — | -.08 | .61*** | -.08 | -.20** | -.11 |
| 4. Negative interaction | -.19*** | .24*** | -.42*** | — | -.08 | .63*** | .30*** | .30*** |
| Mother-child relationship | | | | | | | | |
| 5. Support | .45*** | -.11 | .52*** | -.11* | — | -.10 | -.13* | -.11 |
| 6. Negative interaction | -.20*** | .35*** | -.09 | .42*** | -.15* | — | .35*** | .34*** |
| Problem behavior | | | | | | | | |
| 7. Externalizing | -.30*** | .41*** | -.21*** | .25*** | -.21*** | .34*** | — | .51*** |
| 8. Internalizing | -.03 | .13* | -.13* | .19*** | .06 | .19*** | .49*** | — |

Note. Correlations below the diagonal for the Dutch sample ($n = 273$), correlations above the diagonal for the Indian sample ($n = 236$).

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

Cross-Cultural Differences in Effects of Sibling and Parent-Child Relationship Quality on Problem Behavior

To examine effects of sibling and parent-child relationship quality on early adolescent externalizing and internalizing problem behavior, we applied path analyses in Mplus (version 7.11; Muthén & Muthén, 1998-2012). Using observed variables, we formulated a multi-group model in which both externalizing and internalizing problems were predicted by warmth and conflict in the sibling relationship and support and negative interaction in the father-child and mother-child relationship, while controlling for age, sibling age spacing, and living arrangements. Positive sibling, father-child, and mother-child relationship quality were allowed to covary, as were negative sibling, father-child, and mother-child relationship quality (see Figure 1). The groups in this model were the Dutch and the Indian sample.

We first tested a model in which all parameters were estimated separately for the two samples. Fit of this model was acceptable, with $\chi^2(12) = 28.81$, $p = .00$, root mean square error approximation (RMSEA) = .073, comparative fit index (CFI) = .99. Generally, model fit is acceptable if values of RMSEA are between .05 and .08, and values below .05 indicate a good fit (Browne & Cudeck, 1993). CFI values should be .95 or above for a good fit (Hu & Bentler, 1999).

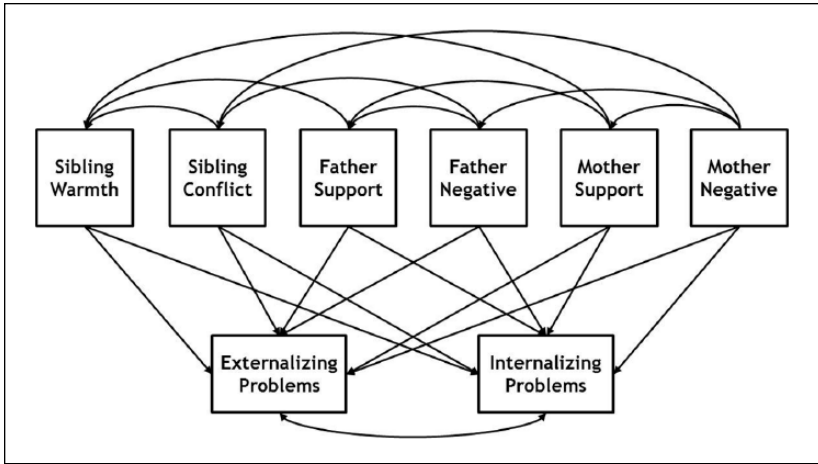


Figure 1. Diagram of the estimated model.

Next, we used model comparison to test whether there were significant cross-cultural differences in the effects of positive and negative family relationship characteristics on externalizing and internalizing problems. We compared the unconstrained model in which beta's were estimated separately to a constrained model in which beta's were set to be equal. Setting beta's equal for the Dutch and Indian sample did not worsen model fit: $\chi^2(24) = 48.65$, $p = .00$, RMSEA = .063, and CFI = .98. The difference in chi-square between the constrained and unconstrained model was not significant: $\Delta\chi^2(12) = 19.85$, $p > .05$. This indicates that beta's for the Dutch and Indian sample are not significantly different, reflecting cross-cultural similarity in the strength of the effects of sibling and parent-child relationship quality on externalizing and internalizing problems. Estimates of parameters of the final constrained model can be found in Table 4.²

This constrained model showed significant effects on internalizing problems of sibling conflict ($\beta = .12$, $p < .05$), father-child support ($\beta = -.13$, $p < .05$), father-child negative interaction ($\beta = .10$, $p < .05$), and mother-child negative interaction ($\beta = .16$, $p < .01$). Early adolescents who perceive more conflict with their sibling, less support from father, and more negative interaction with father or mother report more internalizing problem behavior. Sibling conflict ($\beta = .27$, $p < .001$) as well as negative mother-child interaction ($\beta = .18$, $p < .001$) had a significant positive effect on externalizing problems, which means that early adolescents who quarrel more often with their mothers and siblings also report more externalizing problems. No significant

Table 4. Unstandardized and Standardized Effects of Relationship Quality on Externalizing and Internalizing Problems (Final Constrained Model).

| | Externalizing problems | | | Internalizing problems | | |
|-----------------------------------|------------------------|--------|---------|------------------------|--------|---------|
| | B | SE (B) | β | B | SE (B) | β |
| Sibling warmth | -.07 | .05 | -.08 | .02 | .05 | .03 |
| Sibling conflict | .24 | .04 | .27** | .10 | .04 | .12* |
| Father-child support | -.08 | .05 | -.08 | -.11 | .05 | -.13* |
| Father-child negative interaction | .07 | .05 | .07 | .10 | .05 | .10* |
| Mother-child support | -.04 | .05 | -.05 | .06 | .05 | .07 |
| Mother-child negative interaction | .18 | .05 | .18** | .16 | .05 | .16** |

Note. Fit constrained model $\chi^2(24) = 48.659$, $p < .01$, RMSEA = .06, TLI = .90, CFI = .98. RMSEA = root mean square error approximation; TLI = Tucker-Lewis Index; CFI = comparative fit index.

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

effects on externalizing or internalizing problems were found for sibling warmth or maternal support.

Discussion

The aim of the present study was to examine (a) differences between India and the Netherlands in sibling and parent-child relationship quality and externalizing and internalizing problems, and (b) whether associations between sibling and parent-child relationship quality and externalizing and internalizing problems were similar or different for Indian and Dutch children in early adolescence.

We found significant differences between the Indian and Dutch early adolescents in our samples concerning sibling warmth. Sibling relationships were significantly warmer for the Indian than for Dutch early adolescents. These findings are consistent with earlier cross-cultural studies comparing sibling relationship quality (French et al., 2001). In India, sibling relationships are considered the most important family relationships (Updegraff et al., 2011), and sibling harmony is strongly emphasized, resulting in more sibling warmth compared with the Netherlands. More cross-cultural research is needed to examine differences in sibling relationships and their meaning for children and adolescents. As earlier work has shown that the interpretation and long-term implications of sibling relationships might be different between cultures (Nuckolls, 1993), it seems important to measure additional aspects of the

sibling relationship, such as sense of obligation and sibling caregiving to provide more insight into these potential cross-cultural differences.

Our results also showed significant differences between the Indian and Dutch early adolescents in our samples concerning father-child as well as mother-child negative interaction, but not support. The Indian early adolescents reported more negative interaction than the Dutch early adolescents. These findings are inconsistent with earlier cross-cultural studies on this subject (e.g., Chen et al., 1998; Deater-Deckard et al., 2011; Dmitrieva et al., 2004), in which higher levels of warmth (e.g., Chen et al., 1998; Deater-Deckard et al., 2011) and/or conflict (e.g., Chen et al., 1998) were found for children and adolescents from Western versus non-Western societies. So, the results concerning negative interactions were contrary to our expectations. However, these previous studies focused on collectivistic countries other than India, for example China (Chen et al., 1998; Deater-Deckard et al., 2011; Dmitrieva et al., 2004), Korea (Dmitrieva et al., 2004), and Kenya, Jordan, and Thailand (Deater-Deckard et al., 2011). It might be that parent-child relationships are different between collectivistic countries, possibly reflecting country-specific social patterns. It may also be that, as we did not measure adherence to cultural norms directly, our Indian sample was more individualistic than expected from country-level information (The Hofstede Centre, 2015). Additionally, age groups were either younger (Deater-Deckard et al., 2011) or older (Chen et al., 1998; Dmitrieva et al., 2004) which may also explain the inconsistent results. Participants in our study were early adolescents. Early adolescence is an age period in which an adolescent tries to discover who he or she is and attempts to develop into a more autonomous individual, while still maintaining a warm relationship with his or her parents (Erikson, 1968). The current results may reflect these patterns of change during adolescence in parent-child relationship quality. More research is needed to confirm our findings, and pinpoint these family processes in different cultures and countries.

Our results showed that the Indian adolescents in our study reported significantly more internalizing as well as externalizing problem behavior than the Dutch adolescents. These results are not consistent with results from a large-scale cross-cultural study across 24 countries that suggested that cultural factors such as ethnicity, religion, geography, and political economic system were not linked to differences in problem behavior scores (Rescorla et al., 2007). However, other studies did find differences in child self-reported internalizing problems as a function of ethnicity, after controlling for SES indicators (e.g., maternal education level; Hill & Bush, 2001). It could be that SES between our samples was more similar than in other cross-cultural

comparison studies (e.g., Rescorla et al., 2007). More cross-cultural research in India and the Netherlands is needed to replicate and illuminate our findings.

As expected, we found no significant differences between the Dutch and Indian early adolescents in our sample concerning the *associations* between sibling and parent-child relationship quality and externalizing and internalizing problems. For the Dutch as well as Indian early adolescents, more sibling conflict, less paternal support, and more negative interaction in the parent-child relationship were linked to more externalizing and internalizing problems, which is consistent with earlier studies (Barnes et al., 2006; Buehler, 2006; Buist et al., 2011; Gerard et al., 2006; Greenberger et al., 2000; Laible et al., 2000; Meeus et al., 2004; Shagle & Barber, 1993; Sheeber et al., 2001). We found more effects for negative than for positive relationships aspects, consistent with the principle that bad is stronger than good (Baumeister et al., 2001). The fact that we found no significant differences in effect for sibling as well as parent-child relationship quality is consistent with earlier cross-ethnic and cross-cultural studies concerning the effects of sibling and parent-child relationship quality and parenting on problem behavior (Buist et al., 2014; Deković, Wissink, & Meijer, 2004; Eichelsheim et al., 2010; Forehand, Miller, Dutra, & Watts Change, 1997; Rowe, Vazsonyi, & Flannery, 1994; Vazsonyi et al., 2006), and support the *ethnic equivalence model* rather than the *cultural values model*.

Overall, results of our study and earlier work seem to indicate that the differences between ethnic groups, cultures, and countries in the implications of quality of sibling and parent-child relationships for child and adolescent externalizing and internalizing problems are not significant and seem to reflect similar processes across different countries and/or cultural backgrounds.

Limitations

Some limitations of the present study should be noted. First, we only used cross-sectional data and as such no conclusions can be drawn regarding causality, direction of effects, and reciprocal patterns. Longitudinal data would provide additional insight concerning changes in the associations over time and potential reciprocal patterns. Another limitation is that in the Dutch as well as Indian sample, we only used early adolescent self-reports for both relationship quality as well as externalizing and internalizing problems, which can increase social desirability of answers and inflate the strength of connections. On the other hand, research has indicated that parents underestimate problem behavior of their children, especially internalizing problems (Verhulst & Koot, 1995). Additionally, some studies have also indicated that child perceptions on family relationships may be stronger and more reliable

predictors of child adjustment than parental perceptions (Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997).

A third limitation is that, whereas all early adolescents in the Indian sample spoke English fluently, English was not their mother tongue, and about 75% of the early adolescents did not speak English at home. In the Dutch sample, virtually all early adolescents filled out the questionnaires in their native language. This may be reflected in the lower reliabilities in the Indian sample, and in higher scores than found in other Indian studies (e.g., Kapadia & Miller, 2005). It may also be that the questionnaires and items used may mean different things in these different societies. Additionally, two different questionnaires were used in the two cohorts. This strongly improved statistical power, but might pose a potential threat to comparability of results across cohorts. However, statistical countermeasures were taken to ensure comparability, and comparative testing did not suggest differences in results between the different questionnaires. More research, for example using interviews or observations, is needed to confirm our findings.

Finally, our samples are not representative for all Dutch and Indian early adolescents, limiting the generalizability of our findings. The participating Dutch schools can be considered representative concerning educational system, class size, and religiosity. The participating Indian schools were all English-medium schools. Whereas most Indian children still attend Hindi-medium schools, enrollment in English-medium schools has almost doubled from 10% to 20% over a period of 5 years (Nagarajan, 2015). Pupils at English-medium schools are mostly from middle and upper class (Aula, 2014) and results may therefore not be generalized to other Indian social classes. However, due to the large differences within India between regions and classes, it is nearly impossible to collect a sample that is truly representative for the whole of Indian society. The choice to send a child to an English-medium school may also reflect more Westernized cultural norms. Adherence to cultural norms (individualism and collectivism) was not assessed directly in the current study. It may be that our samples were more similar concerning individualism and collectivism than we assumed on the basis of information on national level. Detailed information about the socio-economic status of the children and their families was not available but would have provided important insights into potential differences (or similarities) between the two countries in this respect. The fact that our samples were potentially more similar concerning SES and adherence to cultural norms than assumed may explain some of our unexpected findings. It would therefore be insightful to collect data on socio-economic status and adherence to cultural norms in future research.

Notwithstanding these limitations, our study adds to existing knowledge about cross-cultural differences concerning the associations between sibling

and parent-child relationship quality and externalizing and internalizing problem behavior. We focused on several relationship types with the family system (sibling and parent-child subsystem) and on the link with internalizing as well as externalizing problems. The present study is also one of the first studies to test the cultural values model and ethnic equivalence model for sibling relationships, and thereby increases our understanding of the nature and importance of these relationships.

Conclusions and Implications

Our study indicates that cross-cultural differences may exist in quality of sibling and parent-child relationships. For sibling as well as parent-child relationships, the ethnic equivalence model was supported. This indicates that the importance of sibling and parent-child relationship quality for externalizing and internalizing problems seems to be similar across countries and cultures. For clinical practice, this information is very important. If there are cultural differences in patterns of association between family relationships and externalizing and internalizing problems, these cultural differences should be incorporated in intervention and prevention approaches. In that case, caution is warranted in using interventions designed in Western countries using ethnic majority samples in other countries or with children from other ethnic backgrounds. The fact that we did find differences in family relationship quality and externalizing and internalizing problems but not in patterns of association tentatively suggests that culture does not affect these patterns strongly. More cross-cultural research concerning sibling and parent-child relationship quality and its impact on child and adolescent psychosocial development is warranted to confirm our findings.

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Notes

1. Given concerns about the potential effects of combining different outcome measures of the same construct across cohorts, we performed follow-up analyses to test whether the effects observed in the combined model differed by outcome measure used. These comparisons (available from first author) showed no significant differences in paths based on outcome measures.
2. To check whether our results were influenced by difference in urbanity of the Dutch and Indian samples, we performed follow-up analyses. Using a Dutch subsample from urban settings (cities with populations above 100,000), results were identical (results available from first author). The same significant mean-level differences between India and the Netherlands were found. Model comparisons and significant paths also showed that the links between sibling and parent-child relationship quality and externalizing and internalizing problems were identical in the analyses using the full sample versus the urban subsample.

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