




Development and Aging

Parent-early adolescent relationship quality and problem behavior in Hungary, the Netherlands, India, and Iceland

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Higher parent-child relationship quality has been associated with less internalizing and externalizing problem behavior. However, it remained less clear whether these associations are universal or depend on the country under investigation. Furthermore, fathers are still understudied, even though there is increasing evidence of their important role in early adolescent development. Our study compared the association of mother-child as well as father-child relationship quality with early adolescents' problem behavior in four culturally different countries, namely Hungary ($N = 293$; $M_{age} = 11.22$; 53% boys), the Netherlands ($N = 242$; $M_{age} = 11.20$; 48% boys), India ($N = 230$; $M_{age} = 10.68$; 61% boys), and Iceland ($N = 261$; $M_{age} = 10.90$; 53% boys). Early adolescents filled out questionnaires in their classroom, assessing warmth and conflict with fathers and mothers and internalizing and externalizing problem behavior. Stepwise multi-group path analysis demonstrated no cross-cultural differences in associations between quality of the parent-child relationship and problem behavior. We did not find any effects of maternal or paternal warmth. However, across samples conflict with mothers was associated with more internalizing and externalizing problem behavior, and conflict with fathers was associated with more externalizing problem behavior. Our findings highlight the need to target conflict with both fathers and mothers in interventions across different countries, especially when addressing externalizing problem behavior.

Key words: Cross-cultural research, parent-child relationship, problem behavior, warmth, conflict.

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INTRODUCTION

Parenting plays an important role in the development and maintenance of internalizing and externalizing problem behavior (McCarty, Zimmerman, DiGiuseppe & Christakis, 2005). One subdomain of parenting that received attention in this respect is quality of the parent-child relationship, which is characterized by both warmth (i.e., positive relationship quality) and conflict (i.e., negative relationship quality; Mallers, Charles, Neupert & Almeida, 2010). Whereas parental warmth has a protective effect on problem behavior of early adolescents, conflict with parents is associated with higher levels of problem behavior (Booth, Johnson, Granger, Crouter & McHale, 2003; Deković & Buist, 2005). These studies indicated that quality of the parent-child relationship thus seems to have important consequences for early adolescents' well-being. Despite this evidence, it remains less clear whether this association is universal or depends on the country under investigation. Additionally, most research has been conducted on mother-child relationship quality, therefore leaving fathers understudied (Parke, 2004). The aim of the present study is to compare the association between quality of the mother-child as well as the father-child relationship and problem behavior across four culturally different countries (i.e., Hungary, the Netherlands, India, and Iceland).

To address our research aim, we draw on community samples of early adolescents and use comparable designs and

measures across four different contexts: A Central-European country (Hungary), a Western-European country (the Netherlands), a South-Asian country (India), and a Northern-European country (Iceland). These different regions within and outside Europe have a unique pattern of cultural values and a distinct profile in terms of their history (GLOBE, 2020; Schwartz, 2008). Every culture can be characterized by their relative position on six dimensions (Hofstede, Hofstede & Minkov, 2010), namely *power distance* (i.e., acceptance of unequal power distribution), *individualism versus collectivism* (i.e., emphasis on autonomy and independence vs. togetherness and family ties), *masculinity versus femininity* (i.e., focus on competition and assertiveness vs. cooperation and modesty), *uncertainty avoidance* (i.e., degree of feeling comfortable with uncertainty and ambiguity), *long-term orientation* (i.e., suspiciousness toward societal change), and *indulgence versus restraint* (i.e., acceptance of enjoyment of life and of basic human drives). The countries in this study differ in their relative position on these aforementioned dimensions (Hofstede Insights, 2019), so that each country has a different cultural values pattern. Therefore, all of these countries are different in terms of cultural values, geographical region, and history. By comparing association patterns in these four different countries, we add to cross-cultural insights concerning the link between father-child as well as mother-child relationship quality and early adolescent problem behavior.

Cultural differences in associations between parent-child relationship quality and problem behavior

Every country has its own cultural values and practices and there is increasing awareness that culture shapes human behavior to a great extent (Ho, Bluestein & Jenkins, 2008). Along the same lines, what parents deem important and how they want to raise their children also varies across cultures. These cross-cultural differences in parenting goals originate from differences in cultural dimensions such as collectivism/individualism, power distance, or femininity (Putnam, Gartstein, Broos, Casalin & Lecannelier, 2018). For example, in more collectivistic cultures, parents' primary goal is to promote relatedness and embeddedness in their children (Feldman, Masalha & Derdikman-Eiron, 2010). Conversely, in more individualistic cultures, parents' primary goal is to foster their child's autonomy and independence (Feldman *et al.*, 2010). To reach these parenting goals, parents apply different parenting practices, so that parenting practices also differ between cultures (Choi, Seung Kim, Yeong Kim & Kim Park, 2013). In short, cultural values shape not only parenting goals, but also parenting practices in different countries.

Besides cultural differences in parenting goals and practices, the same parenting practices can have different consequences for child outcomes, depending on culture (e.g., Ho *et al.*, 2008). Two major models have been proposed regarding the association between parenting practices and early adolescents' outcomes across cultures (Lamborn & Felbab, 2003). *The cultural values model* states that the same parenting practices can have dissimilar effects in families from different cultural backgrounds. This is most likely due to cultural values, so that the same behaviors have a different meaning in different cultures (Lamborn & Felbab, 2003). Conversely, *the ethnic equivalence model* proposes that the influence of parenting is universal; there are no cultural differences in the association between parenting practices and early adolescents' outcomes, so that the same behaviors have a similar outcome across cultures (Lamborn & Felbab, 2003). Both models have been supported by empirical evidence: for example, Eichelsheim, Buist, Deković, Wissink, Frijns, Van Lier, and Meeus (2010) showed that the link between parenting behavior (e.g., support and autonomy) and externalizing problems was similar across ethnic groups, supporting the ethnic equivalence model. Conversely, Ho *et al.*'s (2008) findings supported the cultural values model: parental harshness was differentially associated with children's aggression, depending on ethnicity of the family. These findings demonstrate the relevance of examining the association between parenting and early adolescents' outcomes across different cultural groups.

Despite increasing evidence about cross-cultural similarities and differences in *parenting* and child outcomes, less is known about the association between *quality of the parent-child relationship* and early adolescents' problem behavior across cultures. Even though related, parenting typically refers to behaviors from parents to teach their children about the world around them, whereas quality of the parent-child relationship refers to a more affective component (i.e., warmth and conflict) of the bond between parents and their children (e.g., Aloia & Warren, 2019; Brody, McBride Murry, McNair, Chen, Gibbons, Gerrard & Wills, 2005). Additionally, most research has been conducted

among children rather than early adolescents, even though parents are especially important during the transition from childhood to adolescence (Lansford, Rothenberg, Jensen, Lippold, Bacchini, Bornstein & Al-Hassan, 2018; Masten, Juvonen & Spatzier, 2009). Cross-cultural research on the association between quality of the parent-child relationship and problem behavior of early adolescents is scarce.

The existing research so far suggests that *parental warmth* is universally associated with problem behavior of early adolescents, in line with an ethnic equivalence model of parenting (Lamborn & Felbab, 2003). In a study among Indian and Dutch early adolescents, parental warmth was associated with lower internalizing, but not with externalizing problems across both cultures (Buist, Verhoeven, Hoksbergen, Ter Laak, Watve & Paranjpe, 2017). On the other hand, children and early adolescents from 12 ethnic groups across nine countries did not show less internalizing nor externalizing problem behavior when they perceived more parental warmth across different countries and ethnic groups (Lansford *et al.*, 2018). However, Lansford *et al.* (2018) combined paternal, maternal, and children's perceptions into one overall construct of warmth and conflict. Potentially, the perception of early adolescents alone is more important for their problem behavior. Still, in line with the ethnic equivalence model of parenting (Lamborn & Felbab, 2003), both studies found no cross-cultural differences in the association between parental warmth and early adolescent problem behavior. However, it remains unclear whether parental warmth serves as a protective factor which can diminish early adolescents' problem behavior across cultures.

Associations between *parental conflict* and problem behavior are studied even less often cross-culturally. In line with a cultural values model of parenting (Lamborn & Felbab, 2003), we argue that there may be cultural differences in this association as a function of patterns of collectivism versus individualism and differences in power distance. Culture shapes parental response to child behavior (Han, Park, Lee, Linharez & Slobodskaya, 2018) in light of underlying parenting goals (Putnam *et al.*, 2018). In more individualistic countries, independence and autonomy are primary parenting goals, so that early adolescents are encouraged to express their emotions (including negative emotions) and thoughts (Feldman *et al.*, 2010; Rothbaum, Nagaoka & Ponte, 2006). In more collectivistic countries, relatedness is emphasized and there is a strong emphasis on family ties, so that stimulating obedience and reducing aggression are often primary goals of parenting to secure and protect positive family relationships (Feldman *et al.*, 2010). In light of the parenting goal of promoting relatedness and embeddedness, parents tend to discourage expressing emotions in more collectivistic countries (Cole, Tamang & Shrestha, 2006). Conflict, then, could be seen as a way of communicating and expressing emotions and thoughts. Consequently, conflict could be perceived as normative in more individualistic countries compared to collectivistic countries (Buist *et al.*, 2017). Following this line of reasoning, parent-early adolescent conflict can be expected to be more strongly associated with problem behavior in more collectivistic countries (i.e., India) than individualistic countries (i.e., Hungary, the Netherlands; Iceland is in between the other countries in terms of individualism vs. collectivism; Hofstede Insights, 2019).

Besides differences along the dimension of individualism versus collectivism, the association between parent-child relationship quality and problem behavior could also differ as a function of cultural differences in power distance. In cultures low on power distance, value is placed on equality and an equal power distribution; in cultures high on power distance, acceptance of inequality and unequal distribution of power is greater (Hofstede *et al.*, 2010). These differences in power distance are also likely to impact the way that family members interact. Similar to more collectivistic cultures, parents expect their children to obey in cultures higher on power distance (Guan & Li, 2017). This implies that arguing with parents during conflict would be seen as disrespectful. On the contrary, similar to more individualistic cultures, autonomy and independence are encouraged in cultures lower on power distance (Guan & Li, 2017). In this way, early adolescents should be more able to share their thoughts and stand by their opinions, and to argue with their parents. Conflict could then be seen as more normative in cultures lower on power distance (i.e., the Netherlands and Iceland) than in those higher on power distance (i.e., India; with Hungary in between; Hofstede Insights, 2019).

Following both of these lines of reasoning, in countries high on collectivism and power distance (i.e., India), conflict should be considered to be less normative and hence have more detrimental consequences. On the contrary, in countries high on individualism and low on power distance (i.e., the Netherlands), conflict should be considered to be more normative and less consequential. Iceland scores lower on power distance and in between the other countries in terms of collectivism and individualism (Hofstede Insights, 2019). Similarly, Hungary scores higher on individualism and in between the other countries in terms of power distance (Hofstede Insights, 2019). Cross-cultural research in general – and on parenting in particular – focused mostly on individualism versus collectivism and, to a lesser extent, power distance. Additionally, we do not know the relative influence of each of these two cultural dimensions. Based on these considerations, we examine whether for early adolescents in countries that are more collectivistic and with a larger power distance (i.e., India), the association between parent-early adolescent conflict and problem behavior is stronger than for early adolescents in countries that are more individualistic and with a smaller power distance (i.e., the Netherlands). For early adolescents in countries that score in between on these two dimensions (i.e., Hungary and Iceland), the strength of this association would be expected to fall in between.

In this study, our first aim is to rigorously test whether associations between parental warmth and conflict and externalizing and internalizing problem behavior are (dis)similar in Hungary, the Netherlands, India, and Iceland. We hypothesize that the link between parental *warmth* and internalizing and externalizing problem behavior would be similar across cultures. We expect cross-cultural differences in the link between parental *conflict* and internalizing and externalizing problem behavior: in countries higher on collectivism and power distance (i.e., India), we expect this association to be stronger than in countries higher on individualism and lower on power distance (i.e., the Netherlands; Hofstede Insights, 2019). Since Iceland and Hungary do not clearly fall into one of these categories, we explore the

relative strength of the association between conflict and problem behavior in these countries.

Role of mothers and fathers

Besides cultural differences in the association between quality of the parent-child relationship and problem behavior, it is also possible that there are differences in the role of fathers and mothers in the parent-child relationship. Relationship quality with fathers is as influential as with mothers (Booth *et al.*, 2003; Deković & Buist, 2005; Piña-Watson & Castillo, 2015), but fathers remain understudied and their role in the upbringing of their children has not received as much attention as the role of mothers (Choi *et al.*, 2013; Parke, 2004). It is possible that quality of the parent-child relationship differs between fathers and mothers, depending on the country under investigation. For example, parents rate themselves differently in terms of warmth and conflict toward their children (Putnick, Bornstein, Lansford *et al.*, 2012): In some countries (e.g., China and Sweden) mothers rate themselves as warmer than fathers, whereas in other countries they rate themselves as equally warm (e.g., Colombia and USA) or less warm than fathers (e.g., Kenya). In terms of conflict, fathers in Sweden report higher levels of conflict than mothers, whereas in other countries they report similar levels of conflict (Putnick *et al.*, 2012). Even though Putnick *et al.* (2012) did not assess associations with child well-being, their findings demonstrate that parents differ in their (self-reported) warmth and conflict across cultures. This may indicate that parent-child relationship quality differs between cultures or that different forms of parent-child relationship quality are more likely or normative in certain contexts than in others. However, the study by Putnick *et al.* (2012) focused on parental perceptions; in the present study, we focus on early adolescents' perceptions of parent-child relationship quality.

Besides differences in quality of the parent-child relationship between fathers and mothers, also the *associations* with early adolescents' problem behavior may depend on culture, in line with the cultural values model of parenting (Lamborn & Felbab, 2003). For example, fathers seem more influential in countries higher on individualism, whereas the role of mothers seems more salient in countries higher on collectivism (Dwairy, Achoui, Filus, Rezvan nia, Casullo & Vohra, 2010). Dwairy *et al.* (2010) argued that these findings are in line with different gender roles across countries: In more collectivistic cultures, mothers are often the primary caregivers and are potentially more influential as a result. In more individualistic cultures, fathers are typically less controlling and may become involved when adolescents' show psychological problems, increasing paternal influences on early adolescents' problem behavior (Dwairy *et al.*, 2010). Dwairy *et al.* (2010) compared the (relative) influence of fathers and mothers on child psychological well-being, like the present study. However, they focused on parental control, inconsistency, and rejection as behavioral forms of parenting. Additionally, they focused on psychological disorders. In the present study, we extend on these findings by focusing on parent-child relationship quality as an affective form of parenting and its association with problem behavior in non-clinical samples.

Despite the important implications for the well-being of early adolescents, the associations between quality of the parent-child relationship with fathers and mothers and early adolescents' problem behavior have not often been researched across different cultures. In this study, we therefore investigate the association between parent-child relationship quality with fathers and mothers and problem behavior of their children across four different countries. Additionally, we compare the strength of these associations for fathers and mothers to assess their relative importance for early adolescents' problem behavior. Notwithstanding the limited amount of research on the different role of fathers and mothers across cultures, based on Dwairy *et al.* (2010), we expect the link between mother-early adolescent relationship quality and problem behavior to be stronger in more collectivistic countries (i.e., India), whereas the link between father-early adolescent relationship quality and problem behavior may be stronger in more individualistic countries (i.e., Hungary, the Netherlands; with Iceland in between). Since there is a lack of research on the other cultural dimensions, we only base our hypotheses on differences in individualism versus collectivism and power distance.

The present study

The aim of the present study is twofold. First, we investigate whether associations between parental warmth and conflict and externalizing and internalizing problem behavior are (dis)similar in Hungary, the Netherlands, India, and Iceland. We hypothesize that the link between parental warmth and internalizing and externalizing problem behavior would be similar across cultures. We expect cross-cultural differences in the link between parental conflict and internalizing and externalizing problem behavior: in countries higher on collectivism and power distance (i.e., India), we expect this association to be stronger than in countries higher on individualism and lower on power distance (i.e., the Netherlands; Hofstede Insights, 2019). Since Iceland and Hungary do not clearly fall into one of these categories, we explore the relative strength of the association between conflict and problem behavior in these countries.

Second, we investigate this association for fathers and mothers and compare the strength of these associations to assess their relative importance. We expect the link between mother-early adolescent relationship quality and problem behavior to be

stronger in more collectivistic countries (i.e., India), whereas the link between father-early adolescent relationship quality and problem behavior may be stronger in more individualistic countries (i.e., Hungary, the Netherlands; with Iceland in between).

METHOD

Participants and procedure

The data were collected in schools across four countries, namely Hungary, the Netherlands, India, and Iceland. After the approval of the principals, in Hungary ($N = 293$) five high schools in Budapest (the capital and the largest city of Hungary) participated, which were randomly selected from a list of public high schools. In the Netherlands ($N = 242$), 10 primary schools across the Netherlands (including urban, semi-urban, and rural areas) participated, which were selected by research assistants. In India ($N = 230$), six English language middle schools in Pune (the second largest city of the state of Maharashtra) participated, which were selected with help of the Jnana Prabodhini Institute of Psychology. Finally, in Iceland ($N = 262$), six primary schools located in small towns in the area of Reykjavik (the capital and largest city of Iceland) participated, which were selected by the researchers. Additional descriptive information per subsample can be found in Table 1.

In all four participating countries, a similar procedure was applied: the parents of the early adolescents were informed about the nature of the study beforehand (including purpose, length, voluntary nature, confidentiality, and contact information of the researchers for questions) and could object to participation of their child (i.e., parents had 2 weeks to inform the school of their refusal to let their child participate using a reply slip). Early adolescents filled out the questionnaires in their own classroom during school hours supervised by research assistants. Both research assistants and teachers were aware of children who were not allowed to participate in the study. Early adolescents were asked for active consent and were explicitly informed that they could object to participation, could stop participation at any moment, and that their anonymity was ensured. All early adolescents filled out the questionnaires in the language of instruction at school (i.e., Hungarian, Dutch, English, and Icelandic in Hungary, the Netherlands, India, and Iceland, respectively). All early adolescents in the classroom received a small present (a pencil or eraser), whether they completed the questionnaire or not. The study followed all institutional and professional ethical guidelines concerning research with minors.

Measures

Quality of the parent-child relationship. Early adolescents filled out the Network of Relationship Inventory (NRI; Furman & Buhrmester, 1985; Furman & Buhrmester, 1992) separately for fathers and mothers.

Table 1. Demographic information of the four samples

	Hungary N = 293	Netherlands N = 242	India N = 230	Iceland N = 262	Difference ANOVA/ χ^2
Mean age (SD)	11.22 ^a (0.74)	11.20 ^a (0.71)	10.68 ^b (0.86)	10.90 ^c (0.31)	35.01***
Boys %	53.2% ^{ab}	47.9% ^a	61.3% ^b	52.5% ^{ab}	8.76*
Divorced %	16.4% ^{ab}	12.8% ^b	1.3% ^c	24.1% ^a	53.30***
Biological father %	96.1%	98.3%	99.6%	96.1%	14.23
Biological mother %	99.3%	99.6%	99.6%	96.1%	10.57
Mean number of siblings (range)	1.54 ^a (0–6)	1.59 ^a (0–4)	1.56 ^a (0–14)	2.31 ^b (0–11)	17.17***

Notes: Subsamples with different superscripts differ significantly ($p < 0.05$). Early adolescents were recruited in schools in the city of Budapest for Hungary, schools across the country for the Netherlands, in schools in the city of Pune for India, and schools across small towns in the area of Reykjavik for Iceland.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Almost all early adolescents filled out the NRI about their biological parents (i.e., <4% stepfathers and -mothers across samples, no adoptive parents; see Table 1).¹ We measured warmth (6 items, e.g., “How much does your father/mother really care about you?”) and conflict (6 items, e.g., “How much do you and your father/mother disagree and quarrel?”) on a scale from 1 (= *little to none*) to 5 (= *the most*) by taking the mean of the items. The NRI has previously been validated across different countries and in different ethnic groups (e.g., Ackermann, Martinelli, Bernhard *et al.*, 2018; Furman & Buhrmester, 2009).

To assess reliability, we calculated composite reliabilities using the standardized factor loadings of confirmatory factor analysis in *Mplus* using STDYX standardization. Composite reliability is preferable over Cronbach’s alpha when factor loadings are unequal (like in our data) because Cronbach’s alpha underestimates the reliability of the measures in these cases (Trizano-Hermosilla & Alvarado, 2016). In our study, composite reliabilities of the NRI scales were good across samples (see Table 2).

Problem behavior. Early adolescents filled out the Youth Self-Report questionnaire (YSR; Achenbach, 1991; Verhulst & Van der Ende, 1992). We measured externalizing (19 items, e.g., “I vandalize my own things”) and internalizing problem behavior (14 items, e.g., “I cry a lot”) on a scale from 1 (= *not true*) to 3 (= *very true or often true*) and summed the items to create subscales. The YSR is one of the most widely used and validated measures across different countries (e.g., Geibel, Habtamu, Mekonnen *et al.*, 2016; Lansford *et al.*, 2018). Composite reliabilities were good (Table 2).

Measurement invariance. With cross-cultural research, it is important that variables are measurement invariant, because it ensures that (back-)translations are properly performed and that no cultural differences in knowledge of types of assessment and social desirability exist (Van Widenfelt, Treffers, De Beurs, Siebelink & Koudijs, 2005). To test measurement invariance of our scales across samples, we used alignment optimization with MLR estimator (Asparouhov & Muthén, 2014; Lomazzi, 2018). This approach is most suitable for our data, which consisted of scales with six to 19 items across four countries. The usual approach (metric or scalar invariance; forcing *all* factor loadings and/or intercepts to be equal across all samples) would be too strict and “too cumbersome to be practical due to the many possible violations of invariance, and the modification index exploration could well lead to the wrong model” (Asparouhov & Muthén, 2014, p. 1). Using the alignment optimization method, we were able to examine, separately for each measure, whether items were measurement invariant (factor loadings and intercepts) across samples and if not, which specific differences were significant and whether systematic patterns could be found in these differences.

The results of our analyses showed that for almost all variables, the factor loadings were not significantly different between the four samples, demonstrating metric invariance. Only for externalizing problems, out of 19 items one factor loading was different for the Indian sample, and one

factor loading was different for the Icelandic sample. In both instances, the other samples did not differ significantly concerning factor loadings of those items. We did find differences across samples concerning factor intercepts, which indicated that the criteria for scalar invariance were not met. Based on these findings, we conclude that our variables show metric invariance and can be used to reliably test potential cross-cultural differences in the associations between parent-adolescent relationship quality and problem behavior.

Analytic strategy – statistics

We tested a stepwise multi-group path analysis whereby externalizing and internalizing problem behavior were regressed on warmth from mothers and fathers and conflict with mothers and fathers. We added covariances between all relationship variables and a covariance between externalizing and internalizing problem behavior to account for their interdependence and controlled for gender in all analyses. We excluded age and number of siblings, as they were not significant covariates in any of the models. In the first step, all regression paths and covariances were constrained to be equal between the subsamples. Next, the covariance constraints were released (step 2), followed by a model in which all regression paths were estimated freely across the four subsamples (step 3). With each step, we assessed whether model fit significantly improved compared to the previous, more restrictive model by looking at the difference in Chi-square, using robust Satorra–Bentler scaled Chi-square comparisons. All analyses were performed using *Mplus* (Version 8.4; Muthén & Muthén, 1998–2017). We used the MLR estimator in all analyses, since almost all of our variables were skewed across countries: early adolescents reported high levels of warmth from both parents and low levels of conflict with both parents and problem behavior. Notable exceptions were internalizing problem behavior in India and Iceland and externalizing problem behavior in India, which followed a normal distribution. Missing data were imputed by *Mplus* using full information maximum likelihood estimation.

RESULTS

Descriptive statistics and mean level differences

Dutch and Icelandic early adolescents reported significantly less conflict with both their mothers and fathers than Hungarian and Indian early adolescents, with no difference among the former and the latter two (see Table 3). Additionally, samples differed significantly from each other concerning externalizing problems: Indian early adolescents reported most externalizing problem behavior, followed by Hungarian and Icelandic early adolescents, whereas Dutch early adolescents reported the least externalizing problem behavior. Finally, Dutch early adolescents reported significantly less internalizing problem behavior than Indian, Hungarian, and Icelandic early adolescents; the latter three did not differ from each other.

Correlations between the main variables (see Table 4) showed similar patterns across the four samples. Only few correlations between parent-child warmth and externalizing or internalizing problem behavior were significant, whereas across the four samples mother-child as well as father-child conflict was significantly correlated with externalizing and (to a somewhat lesser extent) internalizing problems.

Cross-cultural comparison of the association between parent-child relationship quality and problem behavior

We first tested the model in which all regression paths between parent-early adolescent relationship quality and problem behavior

Table 2. Composite reliabilities per construct and subsample

	Hungary N = 293 CR	Netherlands N = 242 CR	India N = 230 CR	Iceland N = 262 CR
Mother-child relationship quality				
Warmth	0.83	0.78	0.70	0.78
Conflict	0.95	0.84	0.72	0.93
Father-child relationship quality				
Warmth	0.83	0.81	0.70	0.82
Conflict	0.91	0.90	0.69	0.89
Problem behavior				
Externalizing	0.88	0.85	0.71	0.76
Internalizing	0.85	0.82	0.72	0.80

CR = Composite reliability.

Table 3. Descriptive statistics per subsample and mean difference tests

	Hungary N = 293	Netherlands N = 242	India N = 230	Iceland N = 262	ANOVA
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i>
Mother-child relationship quality					
Warmth	4.03 ^a (0.76)	3.93 ^{ab} (0.68)	3.83 ^b (0.84)	4.02 ^a (0.78)	3.77*
Conflict	1.86 ^a (0.81)	1.49 ^b (0.59)	1.77 ^a (0.73)	1.44 ^b (0.74)	21.27***
Father-child relationship quality					
Warmth	3.76 (0.76)	3.75 (0.71)	3.76 (0.79)	3.92 (0.81)	2.91*
Conflict	1.75 ^a (0.69)	1.50 ^b (0.62)	1.77 ^a (0.69)	1.37 ^b (0.60)	22.93***
Problem behavior					
Externalizing	27.34 ^a (6.00)	24.64 ^b (4.67)	28.97 ^c (5.26)	26.24 ^a (4.12)	30.50***
Internalizing	21.00 ^a (5.18)	18.12 ^b (3.83)	21.82 ^a (4.51)	21.17 ^a (4.57)	31.11***

Notes: Subsamples with different superscripts differ significantly ($p < 0.05$). We tested for equal variances between countries and used the appropriate estimator accordingly. All reported p -values are adjusted for multiple comparisons using a Bonferroni-correction.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4. Correlations between the predictors and outcome measures within the four subsamples

	Externalizing problems				Internalizing problems			
	Hungary	Netherlands	India	Iceland	Hungary	Netherlands	India	Iceland
Mother-child								
Warmth	-0.17**	-0.23***	-0.09	-0.10	-0.12*	-0.04	-0.04	-0.12
Conflict	0.43***	0.35***	0.34***	0.42***	0.29***	0.19**	0.25***	0.37***
Father-child								
Warmth	-0.11	-0.22**	-0.08	-0.15*	-0.05	-0.17**	-0.01	-0.05
Conflict	0.34***	0.30***	0.21**	0.34***	0.17**	0.19**	0.15*	0.20**

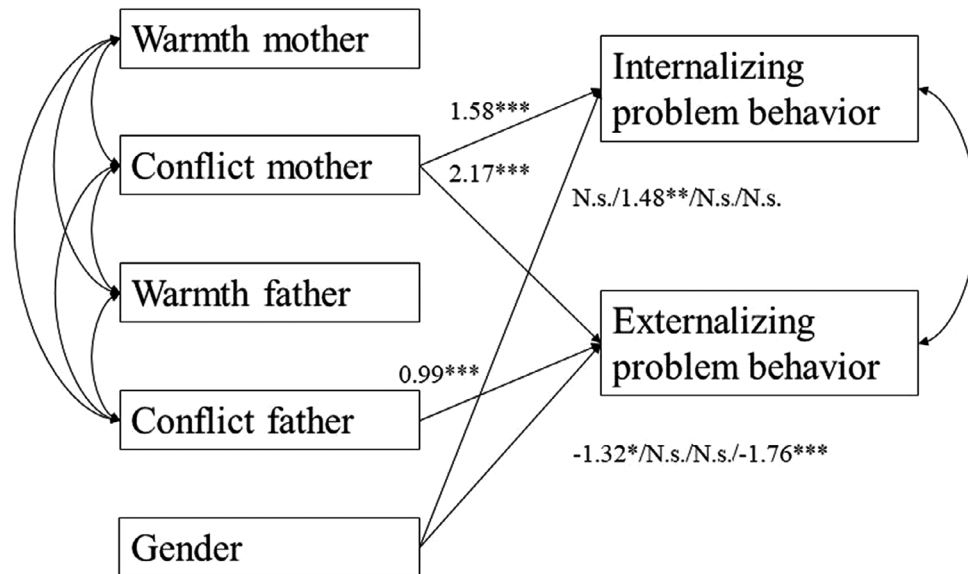
* $p < 0.05$ ** $p < 0.01$, *** $p < 0.001$.

and covariances among parent-early adolescent relationship quality variables and between internalizing and externalizing problem behavior were constrained to be equal across the Hungarian, Dutch, Indian, and Icelandic subsamples ($\chi^2(61) = 128.67$, $p < 0.001$, RMSEA = 0.066, CFI = 0.85, TLI = 0.89). Next, we released the covariances between the variables and held the regression paths constrained to be equal. This significantly improved model fit ($\Delta\chi^2(21) = 57.01$, $p < 0.001$). Finally, we released the regression paths to test for differences in the associations across cultures. However, releasing these paths did not significantly change model fit ($\Delta\chi^2(24) = 27.22$, $p = 0.294$).² Based on these results, we chose the model with constrained regression paths and released covariances as our final model (Fig. 1; $\chi^2(40) = 61.63$, $p = 0.016$, RMSEA = 0.046, CFI = 0.95, TLI = 0.95). The fact that the covariances were unconstrained in our final model implies that the associations between relationship variables, as well as the association between externalizing and internalizing problem behavior are different across countries. The regression paths between parent-child relationship quality and problem behavior were constrained to be equal in our final model, indicating that the association between parent-child relationship quality and problem behavior is similar across countries. So, we did not find cross-cultural differences in the association between the parent-child relationship quality and problem behavior.

Comparing the influence of fathers and mothers

Across samples, warmth from neither mothers nor fathers significantly predicted externalizing or internalizing problem behavior. However, we did find significant effects of conflict with parents: early adolescents who experienced more conflict with mothers reported more externalizing ($B = 2.17$, $SE = 0.31$, $p < 0.001$) and internalizing problem behavior ($B = 1.58$, $SE = 0.26$, $p < 0.001$). Conflict with fathers was also associated with more externalizing problem behavior ($B = 0.99$, $SE = 0.34$, $p = 0.003$), but not with internalizing problem behavior ($B = 0.44$, $SE = 0.29$, $p = 0.131$).

We additionally compared the strength of the associations between fathers and mothers by fixing the same regression path of both parents to be equal. If this resulted in worse model fit (i.e., significant robust Satorra-Bentler scaled Chi-square comparisons), this implied that associations with fathers were significantly different from associations with mothers. We found that conflict with mothers was associated significantly stronger with externalizing problem behavior ($\Delta\chi^2(1) = 5.14$, $p = 0.023$) and internalizing problem behavior ($\Delta\chi^2(1) = 7.10$, $p = 0.008$) than conflict with fathers. We did not find differences between fathers and mothers in the associations between warmth and problem behavior. Explained variance for externalizing problem behavior was medium ($R^2_{\text{Hungary}} = 0.15$, $R^2_{\text{Netherlands}} = 0.14$, $R^2_{\text{India}} = 0.15$, $R^2_{\text{Iceland}} = 0.27$), whereas explained variance for internalizing



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

Fig. 1. Final model. Note. Only significant paths and unstandardized regression coefficients are displayed. The association with gender was allowed to vary between subsamples (boys as reference vs. girls); the estimates correspond with the Hungarian, Dutch, Indian, and Icelandic sample, respectively.

problem behavior was small across samples ($R^2_{\text{Hungary}} = 0.08$, $R^2_{\text{Netherlands}} = 0.12$, $R^2_{\text{India}} = 0.09$, $R^2_{\text{Iceland}} = 0.09$).

Cross-cultural differences in associations between gender, relationship variables, and problem behavior

Despite the fact that our results do not support the idea that associations between parent-child relationship quality and problem behavior differ across cultures, we did find some indications for cross-cultural differences. First, we found differences in the association between gender and problem behavior (Fig. 1), whereas in the Netherlands, girls were more likely to report internalizing problem behavior than boys, we did not find gender differences in the other countries regarding internalizing problems. Additionally, Hungarian and Icelandic boys were more likely to report externalizing problem behavior than girls, whereas we did not find gender differences in the other countries regarding externalizing problems.

Second, the selection of our final model showed that covariances between the relationship variables and between the problem behavior variables differed significantly across countries (Table 5). On the one hand, we found some similarities across countries: early adolescents who perceived their mothers as warmer, also perceived their fathers as warmer. Similarly, those early adolescents who reported more conflict with their mothers, also reported more conflict with their fathers. This indicates that across countries, early adolescents' relationship quality with their parents seems to go together: better (or worse) relationships with one parent is associated with also better (or worse) relationships with the other parent. Finally, externalizing and internalizing problem behavior showed a positive association across countries, indicating that both types of problem behavior co-occur.

On the other hand, we also found meaningful cross-cultural differences between countries, whereas in European countries,

more warmth from mothers was associated with less conflict with mothers, no association existed in India. Similarly, whereas warmth from fathers was consistently negatively associated with conflict with fathers in Europe, in India the association was less strong and robust. Additionally, conflict with mothers was associated with less perceived warmth from fathers in Europe, but again not in India. Finally, conflict with fathers was also associated with less perceived warmth from mothers in Europe, but unrelated in India. These patterns generally seem to suggest that conflict with one parent comes at the cost of perceived warmth from both parents in Europe (or vice versa that more warmth of one parent is associated with less perceived conflict with both parents), whereas this is not the case in India.

DISCUSSION

In line with the ethnic equivalence model of parenting, our study demonstrates that the association between quality of the parent-child relationship and early adolescents' problem behavior is similar across different cultures. Furthermore, our findings highlight the important role of mothers and fathers in the development of early adolescents. Whereas previous developmental psychological research has highlighted that quality of the parent-child relationship is essential for early adolescents and may buffer against early adolescents' problem behavior (Booth *et al.*, 2003; Deković & Buist, 2005), it remained unclear whether this is also the case across different cultures. Our results demonstrate that, across cultures, conflict with both parents was significantly associated with problem behavior of early adolescents. Furthermore, despite increasing evidence of the important role of fathers in early adolescent development (Booth *et al.*, 2003; Deković & Buist, 2005; Piña-Watson & Castillo, 2015), fathers are still often not included in developmental psychological research (Choi *et al.*, 2013; Parke, 2004). With this

Table 5. Correlations between constructs in the final model across subsamples

	Hungary N = 293 <i>r</i>	Netherlands N = 242 <i>r</i>	India N = 230 <i>r</i>	Iceland N = 262 <i>r</i>
Warmth mother – conflict mother	–0.52***	–0.32***	0.02	–0.26**
Warmth father – conflict father	–0.37***	–0.46***	–0.19* ^a	–0.28***
Warmth mother – warmth father	0.50***	0.60***	0.65***	0.61***
Conflict mother – conflict father	0.38***	0.48***	0.62***	0.42***
Warmth mother – conflict father	–0.13*	–0.20**	–0.06	–0.22**
Conflict mother – warmth father	–0.22***	–0.20**	–0.05	–0.18**
Externalizing– internalizing problems	0.44***	0.47***	0.56***	0.41***

Notes: Correlations are standardized covariances using STDYX standardization.

^aThis correlation is marginal in the unstandardized estimates ($p = 0.065$).

* $p < .05$, ** $p < 0.01$, *** $p < 0.001$.

study, we add to an emergent literature on the important role of fathers for early adolescent functioning by demonstrating that, across cultures, both relationship quality with fathers *and* mothers is uniquely associated with early adolescents' problem behavior.

In line with the ethnic equivalence model of parenting (Lamborn & Felbab, 2003), our results show no cross-cultural differences in the association between parent-child relationship quality with both parents and problem behavior of early adolescents across four countries (i.e., Hungary, the Netherlands, India, and Iceland). This is partly consistent with our hypotheses. Our hypothesis that the association between warmth and problem behavior would be similar across cultures is confirmed, but our expectation that the association with conflict would differ across cultures is not supported. Our findings indicate that there are cross-cultural differences in the *amount* of conflict that early adolescents experience, but not in the *associations* of conflict with early adolescents' well-being. In line with cross-cultural differences in power distance, early adolescents in the Netherlands and Iceland – both countries lower on power distance – reported less conflict with both parents than early adolescents in Hungary and India – both countries that score medium to high on power distance. Potentially, early adolescents from cultures lower on power distance are more expected to express their thoughts and feelings (Guan & Li, 2017), so that less conflict arises with their parents accordingly. In cultures (relatively) higher on power distance, early adolescents may also express their thoughts and emotions, but this may be less appreciated by their parents (Guan & Li, 2017), so that conflict arises when they do.

Despite cross-cultural differences in the *amount* of conflict, *associations* of conflict with problem behavior were similar across cultures. Across countries warmth of both parents was unrelated to both externalizing and internalizing problem behavior. However, conflict with parents was associated with internalizing problems (only mothers) and externalizing problems (fathers and mothers). These findings combined could be a reflection of the biological origins of externalizing and internalizing problem behavior (Harden & Mann, 2015; Penninx, Milanese, Lamers & Vogelzang, 2013), whereas parental warmth cannot buffer these biological behavioral problems, conflict may negatively influence the severity of problem behavior symptoms (Booth *et al.*, 2003; Deković & Buist, 2005). Future research is needed to further disentangle under which circumstances warmth may serve as a protective factor and conflict as a risk factor for early adolescents.

Concerning differences between paternal and maternal influence, our results showed that only conflict with mothers, and not conflict with fathers, was associated with internalizing problem behavior. Additionally, even though conflict with both parents was associated with more externalizing problem behavior, conflict with mothers showed significantly stronger associations with both externalizing *and* internalizing problem behavior compared to conflict with fathers. Possibly, this is because mothers are still often the primary caregivers in the lives of their children (Bornstein & Putnick, 2016; Coltrane, 2000). This is partly in line with earlier studies among younger children which found that parenting of mothers had stronger influences on their child's development than parenting of fathers (e.g., Ruiz-Ortiz, Braza, Carreras & Muñoz, 2017; Tissot, Favez, Udry-Jorgensen, Frascarolo & Despland, 2015). Contradictory, other studies among younger children (e.g., Meuwissen & Englund, 2016; Tissot *et al.*, 2015) and adolescents (e.g., Deković & Buist, 2005) found that both parents have a similar influence on their child's development or that fathers have stronger influences on adolescents' development than mothers (e.g., Buist, Deković & Gerris, 2011; Deković & Buist, 2005; Ruiz-Ortiz *et al.*, 2017). However, most of these studies focused on parenting rather than parent-child relationship quality. Future research should aim to shed light on which behavioral and affective components of the bond between early adolescents and their mothers and fathers are most important for their well-being. Still, our results indicate that both fathers and mothers play an important role in the lives of their children and conflict with each parent has a distinct and unique contribution to (externalizing) problem behavior of early adolescents.

Despite the fact that we did not find cross-cultural differences in the association between parent-child relationship quality and problem behavior of early adolescents, we did find some indications that not all processes are universal. For example, we found gender differences in internalizing (i.e., the Netherlands) and externalizing (i.e., Hungary and Iceland) problem behavior in some countries. Whereas previous studies have found that boys are more likely to display externalizing problems and girls are more likely to experience internalizing problems (Leadbeater, Kuperminc, Blatt & Hertzog, 1999), our findings suggest that these differences may not be not universal. The gender differences in problem behavior we find correspond with prevailing gender stereotypes. Girls in the Netherlands are more likely to report internalizing problems, in

line with stereotypes of girls being caring and emotional. In Hungary and Iceland, boys are more likely to report externalizing problems, in line with stereotypes of boys being dominant and aggressive (Koenig, 2018). Potentially, early adolescents in these countries are more at risk of – and/or report more on – problem behavior in the domain that is stereotypical for their gender. Still, we do not find the same patterns across cultures. Gender stereotypes are different for particular age and ethnic groups (Koenig, 2018); it is possible that gender stereotypes for early adolescents vary in different cultures, so that gender differences in early adolescents' problem behavior are not universal. Future research should investigate gender stereotypes for different age groups across cultures and its influence on early adolescents' problem behavior to shed more light on this.

Additionally, we also found cross-cultural differences in associations between the relationship variables. Whereas in the European samples, more conflict with parents was associated with less warmth from not only the same parent, but also the other parent, this was not the case in the Indian sample. This can be explained by the fact that the included European countries tend to be more individualistic than India. In more collectivistic countries, like India, parents place a lot of emphasis on promoting relatedness and highlight early adolescents' connection to the family (Tamis-LeMonda, Way, Hughes, Yoshikawa, Kalman & Niwa, 2008). This embeddedness in their family may provide early adolescents with warmth from their parents despite experiencing conflict. In more individualistic countries, with less focus on relatedness and connection, conflict with parents seems to come at the cost of perceived parental warmth. Our study thus gives a first glimpse of cross-cultural differences in family dynamics within and between paternal and maternal parenting, which could be an important route for future research.

Altogether, our findings demonstrate that parent-child conflict is associated with more externalizing and internalizing problems across cultures and we highlight the importance of fathers in the upbringing of their children in Western and non-Western countries. Our results have important practical implications, that is, when designing and implementing interventions both for healthy and clinical populations of early adolescents. We found that both paternal and maternal conflict were associated with early adolescents' externalizing problem behavior. The correlational nature of our study implies that at this point we can make practical suggestions in two directions. First, educational programs on the parent-child relation for parents of healthy populations of early adolescents could highlight that conflict solving could be useful for preventing the development of externalizing and internalizing problem behavior. Second, our results may suggest as well that for parents of clinical populations of early adolescents, educational programs on the association between externalizing and internalizing problem behavior and parent-child relationship quality could be useful for preventing the development of parent-child conflict. It seems recommendable to include both parents in these interventions. The fact that we did not find cultural differences suggests that it is valuable to target the quality of the parent-child relationship in interventions, both in Western populations, but also in non-Western populations. Our results indicate that a systematic approach involving children as well as their parents should be considered in the prevention and

intervention of problem behaviors. Future research is needed to confirm our findings in other settings. Still, our research gives a first indication of the importance of a positive parent-child relationship with both mothers *and* fathers across cultures for early adolescent well-being.

Furthermore, we show that not all family dynamics are universal; we found meaningful differences in the amount of conflict early adolescents report and different associations between parental conflict and warmth. Our results indicate that warmth and conflict can co-occur in some countries but not in others. Similarly, also the dynamics between fathers and mothers seems to differ. In clinical practice, it is important to be aware of these different family dynamics. Even though our study gives a first glimpse of cross-cultural differences in dynamics within the family, future research should aim to examine the role of fathers *and* mothers across cultures to shed more light on general and specific family processes.

Like most scientific studies, our study also has some limitations. First, whereas the Dutch and Icelandic samples are representative for Dutch and Icelandic primary school pupils, the Indian and Hungarian samples are mainly representative of a particular school type. In these school types, pupils from households with a high socioeconomic status (SES) are overrepresented (Aula, 2014; OECD, 2015). We did not directly assess SES; therefore, we cannot be sure whether early adolescents with a high SES were oversampled in Hungary and India. Even though we are not alone in our struggle to recruit a truly representative sample in cross-cultural research (Olatundun, 2009), future research should try to replicate our findings in more nationally representative samples. Additionally, our measures were self-reported, which can result in socially desirable responses (e.g., Pulcu, 2016; Van Bussel, Spitz & Demyttenaere, 2010). Even though this can be challenging, future research could aim to include responses from fathers *and* mothers in addition to early adolescents' self-report to obtain parents' perspectives on the parent-child relationship across different countries (see Lansford *et al.*, 2018 for an example). This may help to understand whether early adolescents' perspectives of the parent-child relationship are in concordance with their parents' perspectives and to disentangle subjective experiences of the parent-child relationship from more objective shared experiences. In this study, we focus on the link between parent-early adolescent relationships and early adolescent internalizing and externalizing problems. We included several factors that could influence results in our models, such as age and gender. However, our explained variances were medium to small, in particular for internalizing problems, implying that there are other factors that could explain differences in problem behavior among early adolescents, such as temperament or personality (Slagt, Dubas, Deković & van Aken, 2016). Whereas this was currently outside the scope of our study, it would be interesting to examine other influences and concomitants in a cross-cultural context in future research.

A final limitation is that, due to the correlational nature of the study, the temporal direction of the processes remains unclear. Behavior of children and early adolescents also influences parenting (e.g., Baker, McIntyre, Blacher, Crnic, Edelbrock & Low, 2003; Brière, Archambault & Janosz, 2013; Lansford *et al.*,

2018) and not only the other way around, showing a bidirectional interplay between the parent and the child (Achtergarde, Postert, Wessing, Romer & Müller, 2015; Pearl, French, Dumas, Moreland & Prinz, 2014). It is likely that problem behavior of early adolescents would also be associated with more conflict with parents as well (e.g., Brière *et al.*, 2013; see Lansford *et al.*, 2018 for a cross-cultural study). Problem behavior also affects parent-child relationship quality, as parents have a much more challenging job when their child displays more problem behavior. For example, parents of children and adolescents with attention-deficit hyperactivity disorder (ADHD; Graziano, McNamara, Geffken & Reid, 2011) or depression (Eckstain, Kuppens & Weisz, 2017) – both disorders with a biological origin – experience more parenting stress due to their child's problems. This parental stress then lowers quality of the relationship with their children as parents become less susceptible for their child's needs (Richardson, Cobham, McDermott & Murray 2013). Future research should preferably use longitudinal designs to further examine potential bidirectional associations between the parent-child relationship and problem behavior of early adolescents. Furthermore, future research should aim to further establish the universal nature of the association between parent-child relationship quality and early adolescents' problem behavior in other parts of the world (see Lansford *et al.*, 2018 for a noteworthy example).

Notwithstanding these limitations, our study shows that associations between parent-child relationship quality and internalizing and externalizing problem behavior are similar across four culturally different countries, namely Hungary, the Netherlands, India, and Iceland. We demonstrate the important role that both fathers and mothers play across cultures: both conflict with fathers *and* mothers was associated with (externalizing) problem behavior of early adolescents, implying that it is important to include both parents in future (cross-cultural) research. Our study demonstrates that it seems fruitful to include both parents, and to target conflict in the parent-child relationship, in interventions and clinical practice, especially when treating externalizing problem behavior.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

Data Availability Statement

Data available on request from the authors.

NOTES

¹ We also tested our models using only biological parents. Since no differences were observed between the analytic results of the full sample and the sample with only biological parents, we have chosen to use the full sample.

² We also released one regression path at the time instead of releasing all regression paths simultaneously. For none of the regression paths this resulted in a significant improvement in model fit. This further strengthens our conclusion that associations between parent-early adolescent relationship quality and problem behavior were similar across our samples.

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