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EMPIRICAL RESEARCH

Financial Stress, Parent Functioning and Adolescent Problem Behavior: An Actor–Partner Interdependence Approach to Family Stress Processes in Low-, Middle-, and High-Income Families

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Abstract The family stress model proposes that financial stress experienced by parents is associated with problem behavior in adolescents. The present study applied an actor–partner interdependence approach to the family stress model and focused on low-, middle-, and high-income families to broaden our understanding of the pathways by which the financial stress of mothers and fathers are related to adolescent outcomes. The study uses dyadic data (N = 798 heterosexual couples) from the Relationship between Mothers, Fathers and Children study in which two-parent families with an adolescent between 11 and 17 years of age participated. Path-analytic results indicated that in each of the families the association between parents' financial stress and problem behavior in adolescents is mediated through parents' depressive symptoms, interparental conflict, and positive parenting. Family stress processes also appear to operate in different ways for low-, middle-, and high-income families. In addition to a higher absolute level of financial stress in low-income families, financial stress experienced by mothers and fathers in these families had significant direct and indirect effects on problem behavior in adolescents, while in middle- and high-income families only significant indirect effects were found. The financial stress of a low-income mother also had a more detrimental impact on her level of depressive feelings than it had on mothers in middle-income families. Furthermore, the study revealed gender differences in the pathways of mothers and fathers. Implications for research, clinical practice, and policy are also discussed.

Keywords Financial stress · Income · Parenting · Adolescence · Problem behavior

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Introduction

It is well recognized that financial hardship contributes to the development of social and emotional problems for youth and adults (Thoits 1982). Scarce financial resources create and exacerbate family conflict, which in turn is linked with problem behavior in adolescents (Santiago et al. 2012; Wadsworth and Achenbach 2005; Miller and Taylor 2012; Hoffmann 2006). Most research on the negative influence of financial hardship or stress on families and adolescents has been based on the family stress model (Conger and Conger 2002). According to this model, income indirectly affects parents' psychological distress (e.g., depression) and creates interparental conflict due to feelings of financial strain or stress, for example not being able to make ends meet, concerns and insecurity about the family's financial situation. In other words, the subjective experience of economic disadvantage might lead to psychological distress, more so than the objective experience of being poor (Conger and Donnellan 2007; Barnett 2008; Mistry et al. 2004). In its extended form, the family stress model posits that financial stress influences the development of children and adolescents through its effects on the experiences of parents (Conger et al. 2010). As such, psychological distress caused by financial stress has an effect on interparental conflict and contributes to problems

in parenting. This disruptive parenting subsequently mediates or explains the influence of parental distress and interparental conflict on problem behavior or other child and adolescent outcomes.

Although several studies have provided increasing support for these findings (Mistry et al. 2004; Benner and Kim 2010; Linver et al. 2002; Solantaus et al. 2004; Brody et al. 1994), to date the relationships between income, family processes and adolescent outcomes have most commonly been examined by including income as an exogenous variable (Gershoff et al. 2010). Although it is well known that the stress of living with less than one needs contributes to the development of physical and mental health problems in children and adults, both acutely and chronically (Solantaus et al. 2004; Wadsworth et al. 2013), little is known about the mechanisms of subjective financial stress in families with different income levels. In this study, financial stress is assumed to be a subjective experience that parents in low-, middle-, and high-income families undergo. In low-income families, financial stress might derive, for example, from the inability to access resources such as wages that sufficiently cover the cost of available housing or child-related costs, while in high-income families, stress might derive from overspending or carrying a large debt. Although the quality of the financial stress experienced by a high-income father who is concerned about how he will pay the mortgage on his house might be different from that of a low-income father who has difficulties even affording the rent on a house, it can be expected that the subjective experience of both fathers impacts family and adolescent functioning (Mistry et al. 2008; Shek 2003). Therefore, the present study examines whether the family stress model holds in families with different income levels and explores the influence of financial stress on the functioning of adolescents. To this end, this study conceptualizes financial stress as a combination of financial need (difficulties affording much more than the basics), financial burden (costs which impose a financial burden or struggle) and financial insecurity (concerns about the future financial situation). By investigating family stress processes among low-, middle-, and high-income families, the present study focuses on within-group as well as between-group differences. Since the financial stress between these families differs (Wadsworth and Berger 2006; Mistry et al. 2004), it can be expected that the processes governing the relationship between financial stress and adolescent outcomes will also differ.

The current investigation also contributes important findings on adolescent functioning in low-, middle-, and high-income families. Adolescence is a difficult time both for young people themselves and their parents. This period is often associated with a rise in problem behaviors, including substance use and other delinquent acts (Ary et al. 1999). The period of adolescence is also a time when parents report being the most concerned about their parenting responsibilities (Baril et al. 2007). The financial demands of raising and educating older children are often higher than those associated with younger children (Kwon et al. 2003), and the impact of financial hardship on youth might be exacerbated for those residing in impoverished circumstances because parents in these families are not always able to purchase the materials, experiences and services that benefit a child's development (Kiernan and Huerta 2008), or often lack access to social and institutional support (Dominguez and Watkins 2003; Taylor et al. 2014).

While the family stress model posits that financial stress affects adolescents indirectly through its effects on parents, there is, however, evidence that financial stress has both a direct and indirect relationship with adolescent adjustment (Conger et al. 2002; Taylor et al. 2004). Chase-Lansdale et al. (2011) found that over time adolescents were more cognizant of their parents' social and economic affairs. As adolescents become aware of the shortage in the family's financial resources and contemplate the limits this imposes on their own prospects, hostility and externalizing problems may be more likely (Taylor et al. 2004, 2014). From this perspective, it can be assumed that the financial stress of parents with incomes at the lower end of the income distribution impacts adolescent adjustment both directly and indirectly because this financial stress relates to daily problems such as difficulties affording basic goods, which are clearly visible to adolescents. In contrast, the financial stress of middle- and high-income parents may only have indirect effects on the life of adolescents. Therefore, whether the level of income moderates the relationship between financial stress and adolescent functioning is an important question. The present study focuses on adolescent externalizing problem behavior, which is the most common and persistent form of childhood and adolescence maladjustment (Castelao and Kroner-Herwig 2014; Meunier et al. 2011). The study did not focus on internalizing problems because they are not always obvious and may often be poorly recognized or beyond parental awareness. Furthermore, previous studies have shown that the agreement between different types of informants is generally low in this regard (Sourander et al. 1999; van de Looij-Jansen et al. 2011).

To date, most studies that have applied the family stress model to couples with adolescents have typically analyzed data on mothers and fathers separately or used aggregated constructs for financial stress, psychological distress, interparental conflict, and parenting (Falconier and Epstein 2011; Leinonen et al. 2002). By including data from both parents, as well as by studying separate pathways through which financial stress experienced by parents might affect

the functioning of parents and in turn the behavior of their adolescent children, researchers can begin to understand the dynamic processes that constitute family relationships (Ponnet et al. 2013b). One way to do this is to apply the Actor–Partner Interdependence Model (APIM, Kenny et al. 2006), a multi-actor approach that can account for the mutual influences between family members by modeling effects on an intrapersonal level (also called actor effects) and on an interpersonal level (partner effects). An actor effect refers to the impact of an independent variable associated with one person on an outcome variable for the same person (e.g., a mother who experiences high levels of financial stress is more likely to experience depressive feelings). A partner effect occurs when a person's score on an independent variable affects the partner's score on an outcome variable (e.g., increased levels of psychological distress experienced by one parent might be negatively associated with the partner's relationship satisfaction).

In addition, the APIM allows us to examine gender differences in the pathways leading from sources of stress, such as financial stress, to parenting and adolescent outcomes. This is important because the strength of these pathways may indeed differ between mothers and fathers, and as such might have a different impact on the adjustment of their adolescent. Although fathers are now more involved in child-rearing than previously (Ponnet et al. 2013a), the underlying belief that women should take primary responsibility for raising children may still be present (Falconier and Epstein 2010). Women often feel a deep commitment to their children (Hays 1996), and their focus on caring may create feelings of responsibility concerning the maintenance of family stability or cohesiveness when experiencing financial stress (Falconier and Epstein 2010; Schwartz and Rubel-Lifschitz 2009). As a result, they may be better than men at preventing financial stress from having an impact on their own behavior or on that of other family members (Falconier and Epstein 2010). Furthermore, in line with the fathering-vulnerability hypothesis (Cummings et al. 2004), a father's parenting might be affected more significantly by stress than a mother's. One possible explanation for the higher susceptibility of fathering to stress is that the role of a father is less clearly defined by social conventions than the role of a mother, thus making fathering more sensitive to external influences (Coiro and Emery 1998).

Recently, Ponnet et al. (2013b) used the APIM approach to study an extended family stress model, that is, including parenting and child outcomes. Their study was the first in which all constructs of the family stress model were treated separately. The authors found that family stress processes do differ to some extent according to parent gender. Consistent with the hypothesis that fathering is more vulnerable to external influences than mothering (Cummings et al. 2004), the impact of financial stress on positive parenting was greater for fathers than it was for mothers. Furthermore, although actor effects were more prominent, they found partner effects between depressive symptoms and interparental conflict, suggesting that more depressive symptoms result in more relationship adjustment by the partner (Ponnet et al. 2013b). These findings underscore the importance of including both mothers and fathers in studies of family stress processes to enhance our understanding of the indirect pathways between financial stress and child outcomes. Similar to the study conducted by Ponnet et al. (2013b), the present study applied the APIM approach to the family stress model. However, this study expands on earlier research by investigating within- and between-group differences in the ways in which family members respond to the sources of stress. From a policy perspective, it is important to know whether family stress processes differ according to income level (Ponnet and Wouters 2014). Policymakers can use this information to allocate resources to families and adolescents at risk.

To summarize, the present study uses an APIM approach and focuses on low-, middle-, and high-income families to broaden our understanding of the pathways by which the financial stress of mothers and fathers are related to adolescent outcomes. The analyses are based on the Relationships between Mothers, Fathers and Children (RMFC) dataset, which includes information on both parents (married or cohabiting), as well as on a target group of adolescents between 11 and 17 years of age (Ponnet and Wouters 2014).

Hypotheses

This study builds on the APIM approach to the extended family stress model (i.e., including parenting and adolescent outcomes) and examines whether its tenets hold in low, middle, and high-income families (see Fig. 1). Based on the above-mentioned literature, the first hypothesis is that the strength of the pathways leading from financial stress to parent and adolescent functioning will be different in low-, middle-, and high-income families. In low-income families, I expect to find direct and indirect effects between financial stress and adolescent problem behaviors, while in middle- to high-income families I only expect indirect effects. Furthermore, the effects of financial stress on parents' depressive symptoms, interparental conflict, and parenting are expected to be higher in low-income families compared to middle- and high-income families.

The second hypothesis is that there will be gender differences in the actor and partner pathways of mothers and fathers. Based on the fathering vulnerability hypothesis (Cummings et al. 2004) and the findings by Ponnet et al.

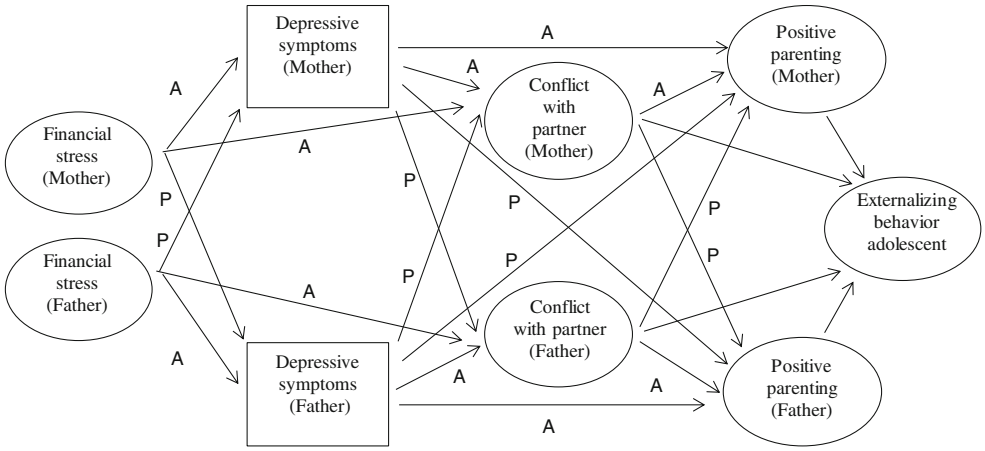

Fig. 1 An actor–partner interdependence approach to the financial stress model. *A* Actor effect; *P* Partner effect

(2013b), the parenting of fathers in low-, middle-, and high-income families is expected to be more vulnerable to stress than the parenting of mothers, but no parent gender differences are expected in the pathways to adolescent outcomes.

Methods

Procedure

Participants in this study were drawn from the RMFC study, in which two-parent families with an adolescent between 11 and 17 years of age (i.e., attending secondary school) were enrolled. Families were recruited from five provinces of the Dutch-speaking part of Belgium (i.e., Flanders). Data collection started in February 2012 and ended in January 2013. The final dataset contained information on 2,566 individuals of 880 families. As described in the study protocol (Ponnet and Wouters 2014), the RMFC study used a multi-actor approach of data collection and focused on low-, middle-, and high-income families. Given that many economically disadvantaged families are 'hidden' and notoriously difficult to access in any systematic way (Faugier and Sargeant 1997), and given the high rate of non-response associated with the collection of multi-actor data (Kalmijn and Liefbroer 2011), the RMFC study employed a non-probabilistic purposive sampling design. One drawback of purposive sampling is that it limits the ability to generalize results. To mitigate this problem, the researchers attempted to obtain a large sample size and engaged in multi-agency research collaborations, including centers for general welfare and public centers for social welfare, as well as through service and meeting centers. A posteriori comparison between the RMFC sample and the European Union Statistics on Income and Living Conditions (EU-SILC, Eurostat 2011) probability sample revealed more similarities than differences between the demographic characteristics of the families in the two samples. For more details, I refer to Ponnet and Wouters (2014).

In the RMFC study, only non-divorced heterosexual parents were eligible to participate. Families were given a letter explaining the purpose of the research along with the packages of envelopes and questionnaires. Target participants were instructed to complete the booklets individually and to not discuss the content of the questionnaire with one another. The booklets were returned in a closed envelope.

Sample

The sample for the analyses includes 798 two-parent families ($n = 1{,}596$) with an adolescent between 11 and 17 years of age, of which both mothers and fathers returned the questionnaires. The average age of the target adolescents is 14.27 years ($SD = 1.86$), with 42.9 % boys ($n = 342$) and 57.1 % girls ($n = 456$). A univariate analysis of variance (ANOVA) reveals no between-group differences for age: $F(1, 798) = .29$. The average age for fathers is 46.06 years ($SD = 4.52$), and the average age for mothers is 43.76 years ($SD = 4.52$). Education is measured as the highest level of education achieved. The educational level of fathers is significantly different from that of mothers: $\chi^2(9) = 195.70$, $p < .001$. Within the sample, 15.0 % of the fathers and 8.2 % of the mothers had completed fewer than 9 years of education (lower secondary); 29.6 % of the fathers and 26.2 % of the mothers had completed secondary education; 23.6 % of the fathers and 40.0 % of the mothers had completed at least 3 years of higher education; and 31.9 % of the fathers and 25.7 % of the mothers had completed more than 3 years of higher education. Of the sample, 10.6 % (n = 84) was a

three-person household, 46.1 % (n = 367) a four-person household, 30 % (n = 239) a five-person household, 9.5 % (n = 76) a six-person household and 1.1 % (n = 9) a household of seven or more persons. With regard to employment, 95.6 % of the fathers (n = 759) and 86.2 % of the mothers (n = 686) were working either full-time or part-time.

The national EU-SILC probability sample (Eurostat 2011) was used to define the low-income (the bottom 25 % income of the EU-SILC sample or below €1,250), middle-income (the 25–50 % income) and high-income (the upper 50 % income or above €1,750) families. The EU-SILC is the EU reference source for micro-level data on income and living conditions (Goedemé 2011). Calculations are based on the EU-SILC 2011 user database on households from the Dutch-speaking part of Belgium. Because the size of the household and the age of its members (whether they are adults or children) are important variables that should be accounted for when comparing household incomes, the modified OECD equivalence scale (Haagenars et al. 1994) was used. This equivalence scale assigns a value of 1 to the household head, of 0.5 to each additional adult member and of 0.3 to each child. Using this scale, the average household income of the RMFC sample is 1,614.91€ (SD = 598.53), which is less than the average household income in the EU-SILC sample (M = 1,857.43€, SD = 907.84). In the present sample, 27.2 % were low-income families (M = 939.09€, SD = 243.23, n = 217), 36.6 % were middle-income families (M = 1,521.32€, SD = 138.80, n = 292), and 36.2 % were high-income families (M = 2,216.92€, SD = 459.17, n = 289).

Measures

Financial Stress

The financial stress construct includes three measures: financial need, financial insecurity and financial burden.

Financial Need To assess financial need, both mothers (α = .82) and fathers (α = .79) were asked to rate three items: "It is difficult to afford much more than the basics with our current income," "I feel that our current income allows me to maintain a desirable standard of living" (reverse-scored), and "With our current income, it is difficult to make ends meet." The items are scored on a seven-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree.*

Financial Insecurity For financial insecurity, mothers (α = .80) and fathers (α = .83) were asked to rate the following items: "I am worried that I will not be able to pay my bills in the near future," "I think that I will have to scale down my living standards in the following months," "I often worry about my future financial situation," "I am frightened that I or my partner will lose our jobs," and "I think that I (or my household) will experience financial difficulties in the following months." All of the items were scored on a seven-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree.*

Financial Burden The financial burden items were adapted from the EU Statistics on Income and Living Conditions (EU-SILC) instrument (Eurostat 2008). Mothers (α = .87) and fathers (α = .87) rated the extent to which five sources of costs (e.g., medical; car/fuel; child-care or other child-related costs; house-related costs) imposed a financial burden on their household. The items were scored on a four-point Likert scale ranging from 1 = *not a burden/struggle* to 4 = *a heavy burden/struggle*.

Depressive Symptoms

The short-form 11-item version of the CES-D was administered to measure depressive symptoms (Kohout et al. 1993). Mothers (α = .87) and fathers (α = .86) were asked to think about the past week and to indicate how often they had felt or behaved in a certain way (e.g., felt depressed, or felt that everything was an effort). All of the items are scored along a four-point Likert scale ranging from 1 = *rarely or none of the time* to 4 = *most or all of the time*.

Interparental Conflict

The interparental conflict construct included three measures: overt hostility, verbal aggression and stress within the relationship.

Overt Hostility The O'Leary–Porter Scale (OPS, Johnson and O'Leary 1987; Porter and O'Leary 1980) was used to measure overt hostility. The OPS is a widely used scale designed to assess the extent to which parents argue openly in the presence of their children. The scale consists of ten items that are scored on a five-point Likert scale ranging from 1 = *never* to 5 = *very often*. All items are scored positively, with the exception of item 10 (regarding displays of affection), which is coded negatively. An example item is "How often do you complain to your spouse about his/her personal habits in front of your child?" Higher scores on the OPS indicate a greater level of overt hostility. Cronbach's alpha was .83 for mothers and .80 for fathers.

Verbally Aggressive Acts To measure verbally aggressive acts perpetrated by respondents and their partners, a 10-item inventory similar to the verbal aggression subscale of the Conflicts and Problem Solving Strategies questionnaire (Kerig 1996) was administered. The items concern behaviors such as yelling, making accusations, insulting, and raising one's voice. Items were scored on a five-point Likert scale ranging from 1 = *never* to 5 = *very often*. Cronbach's alpha was .89 for mothers and .90 for fathers.

Stress Within the Relationship The perceived level of stress within the relationship was measured using the Multidimensional Stress Questionnaire for Couples (MSFP, Bodenmann et al. 2007). Mothers ($\alpha = .92$) and fathers ($\alpha = .91$) were asked to indicate on a five-point Likert scale how stressful/straining ten situations (e.g., disturbing habits of the partner, different attitudes concerning the relationship and life) had been within the relationship during the past 12 months.

Positive Parenting

Mothers ($\alpha = .85$) and fathers ($\alpha = .88$) independently rated the parenting behavior using the positive parenting subscale of the Parental Behavior Scale, short version (Van Leeuwen et al. 2011). The scale consists of eight items in the form of affirmatives (e.g., 'I make time to listen to my child, when he/she wants to tell me something'). The items are scored along a five-point Likert scale ranging from 1 = *never* to 5 = *always*.

Problem Behavior in Adolescents

Parents independently rated the adolescent's problem behavior using the Externalizing Problems scale of the Child Behavior Checklist Parent-Report (CBCL, Achenbach 1991). The CBCL consists of a series of statements that might describe the youth during the previous 6 months. Responses are coded as 0 (not true), 1 (somewhat or sometimes true) or 2 (very true or often true). Examples of items include 'My child lies or cheats' and 'My child disobeys at school'. Items are summed and divided by the number of items. Cronbach's alpha was .88 for mothers and .89 for fathers.

Analytic Strategy

Structural equation modeling (SEM) using Mplus (Muthén and Muthén 2010) with maximum likelihood estimation was performed to examine relationships between financial stress, parental depressive symptoms, interparental conflict, positive parenting, and problem behavior in adolescents. Due to the low levels of missing data ($n = 9$, $n = 11$, and $n = 15$ in low-, middle-, and high-income families, respectively), the missing variable values were excluded from the analyses using listwise deletion. The final sample consisted of 206 low-income, 276 middle-income, and 286 high-income families.

The fit of a multi-group measurement model was investigated with low-, middle-, and high-income families as a grouping variable. The latent constructs financial stress and interparental conflict were created using the mean scores of the measures. Consistent with Ponnet et al. (2013b), the latent construct for problem behavior in adolescents was created using the standardized scores of mothers and fathers. Then, a multi-group structural equation model was constructed using depressive symptoms, interparental conflict, and positive parenting as mediators between financial stress and problem behavior in adolescents. The child's age and gender, and the mother and father's education and age were included as covariates. To test my hypotheses, nested models were generated by constraining pathways to be equal and by comparing the models to unconstrained models. Because constraining one or more paths to be equal generates an increase in the degrees of freedom, a non-significant change in the Chi square value indicates that the constrained model is the preferable model. The analyses were performed as follows.

First, an omnibus test was used to examine whether family stress processes operate differently in low-, middle-, and high-income families. More specifically, a fully constrained model was identified, in which all paths were set as equal between mothers and fathers (e.g., the path from mothers' financial stress to mothers' depressive symptoms was set as equal to the path from fathers' financial stress to fathers' depressive symptoms) and between the low-, middle- and high-income families (e.g., the path from low-income mothers' financial stress to the own depressive symptoms was set as equal to the path from middle-income mothers' financial stress to the own depressive symptoms). Then, all paths among the low-, middle-, and high-income families were unconstrained and compared to the fully constrained model. Second, within each group and for each path, parent gender differences were tested by comparing one-by-one the constrained paths between mothers and fathers to the unconstrained ones (e.g., the path from low-income mothers' financial stress to the own depressive symptoms was set equal to the path from low-income fathers' financial stress to the own depressive symptoms). Third, between the groups and for each path, one-by-one comparisons of the constrained model to the unconstrained model were made to test whether the strength of the pathways differs among parents of families with different income levels (e.g., the path from low-income mothers' financial stress to their own depressive symptoms was set different to the path from middle-income mothers' financial stress to their own depressive symptoms). Finally, a formal test for evidence of mediation was performed, with depressive symptoms, interparental conflict, and positive parenting as mediators.

The model fits of the measurement and path models were evaluated according to several fit indices. Given that the χ^2 is almost always significant and not an adequate test of the model fit (Brown 2006; Kline 2005), I also report the Comparative Fit Index (CFI) (Bentler 1990), the Tucker–Lewis index (TLI) (Tucker and Lewis 1973), the Root

Mean Square Error of Approximation (RMSEA) (Steiger 1990) and the Standardized Root Mean Square Residual (SRMR) (Kline 2005). The CFI and TLI range from 0 to 1.00, with a cut-off of .95 or higher indicating that the model provides a good fit and .90 indicating that the model provides an adequate fit (Byrne 2001; Hu and Bentler 1999). RMSEA values below .05 indicate a good model fit, and values between .06 and .08 indicate an adequate fit (Raykov and Marcoulides 2006; Brown 2006). The SRMR is a standardized summary of the average covariance residuals (Kline 2005). A relatively good model fit is indicated when the SRMR is smaller than 0.08 (Hu and Bentler 1999).

Results

Preliminary Analyses

Table 1 presents the descriptive statistics for all measures. A series of univariate analyses (ANOVAs) were conducted, with mothers' and fathers' ratings as the dependent variables and group (low-, middle- and high-income families) as a factor. As shown in Table 1, significant between-group differences were found with regard to mothers' financial need, $F(2,794) = 69.80$, $p < .001$; financial insecurity, $F(2,794) = 46.71$, $p < .001$; and financial burden, $F(2,793) = 29.85$, $p < .001$. Similarly, significant between-group differences were found with regard to fathers' financial need, $F(2,792) = 76.98$, $p < .001$; financial insecurity, $F(2,792) = 31.47$, $p < .001$; and financial burden, $F(2,793) = 33.31$, $p < .001$. Further post hoc Bonferroni analyses revealed that, for each of these financial stress measures, both mothers and fathers of the low-income group had significantly more stress compared to mothers and fathers of the middle-income group, and both mothers and fathers of the middle-income group had significantly more financial stress than mothers and fathers of the high-income group. With regard to depressive feelings, a univariate analysis with mothers' depressive symptoms as a dependent variable and group as an independent variable revealed a significant between-group difference, $F(2, 796) = 5.47$, $p < .01$. Post-hoc analyses revealed that mothers of low-income families reported significantly more depressive symptoms than mothers of high-income families. In addition, significant between-group differences were found with regard to mothers' parenting, $F(2,795) = 3.34$, $p < .05$, and fathers' parenting, $F(2,793) = 3.03$, $p < .001$. Further analyses revealed that both mothers and fathers in low-income families showed less positive parenting compared to mothers and fathers in high-income families. With regard to interparental conflict and problem behaviors in adolescents, no significant differences among low-, middle- and high-income groups were found.

For each group, paired *t*-tests were conducted to examine differences between mothers' and fathers' ratings. For low-income families, paired *t*-tests revealed that mothers reported higher levels of financial need, $t(213) = 1.96$, $p < .05$; financial insecurity, $t(213) = 2.91$,

Table 1 Descriptives of the ariables

	Low income		Middle income		High income		*df*	*F* value
	M	*SD*	*M*	*SD*	*M*	*SD*		
Financial need MR	3.52[a]	1.51	2.67[b]	1.12	2.22[c]	1.09	(2,794)	69.80***
Financial insecurity MR	3.36[a]	1.34	2.78[b]	.99	2.50[c]	1.02	(2,794)	46.71***
Financial burden MR	2.05[a]	.78	1.77[b]	.67	1.56[c]	.66	(2,793)	29.85***
Financial need FR	3.33[a]	1.49	2.55[b]	1.11	2.03[c]	.91	(2,792)	76.98***
Financial insecurity FR	3.09[a]	1.33	2.60[b]	1.05	2.39[b]	1.05	(2,792)	31.47***
Financial burden FR	1.92[a]	.83	1.74[b]	.66	1.44[c]	.55	(2,793)	33.31***
Depression MR	1.53[a]	.46	1.45	.36	1.41[b]	.40	(2,796)	5.47**
Depression FR	1.40	.37	1.43	.38	1.40	.39	(2,793)	1.40
Overt hostility MR	1.95	.55	1.84	.49	1.87	.54	(2,792)	2.74
Verbal aggression MR	2.02	.65	2.04	.59	2.00	.62	(2,791)	.43
Relationship stress MR	2.20	.87	2.12	.80	2.04	.83	(2,791)	2.32
Overt hostility FR	1.92	.52	1.87	.47	1.85	.53	(2,792)	1.17
Verbal aggression FR	1.83	.59	1.87	.58	1.87	.64	(2,791)	0.35
Relationship stress FR	1.92	.72	1.88	.71	1.85	.70	(2,788)	0.41
Positive mothering MR	4.05[a]	.58	4.13	.49	4.17[b]	.46	(2,795)	3.34*
Positive fathering FR	3.64[a]	.70	3.74	.56	3.78[b]	.62	(2,793)	3.03*
Externalizing behavior MR	.19	.21	.18	.17	.17	.16	(2,794)	1.33
Externalizing behavior FR	.17	.20	.18	.17	.17	.16	(2,793)	0.33

MR mother report, *FR* father report

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

[a,b,c] Different indices refer to significant between-group differences

$p < .01$; financial burden, $t(213) = 2.73$, $p < .01$; depressive symptoms, $t(214) = 3.76$, $p < .001$; verbal aggression, $t(211) = 6.05$, $p < .001$, relationship stress; $t(209) = 5.27$, $p < .001$; positive parenting, $t(214) = 8.32$, $p < .001$; and adolescent's problem behavior, $t(214) = 2.15$, $p < .05$, than fathers. For middle-income families, paired *t*-tests revealed that mothers reported higher levels of financial need, $t(288) = 2.09$, $p < .05$, financial insecurity, $t(288) = 2.69$, $p < .01$, verbal aggression, $t(288) = 5.36$, $p < .001$, relationship stress, $t(288) = 4.79$, $p < .001$, and positive parenting, $t(289) = 9.82$, $p < .001$, than fathers. For high-income families, paired *t*-tests revealed that mothers reported higher levels of financial need, $t(286) = 2.82$, $p < .01$; verbal aggression, $t(284) = 3.27$, $p < .001$; relationship stress, $t(284) = 3.70$, $p < .001$; and positive parenting, $t(286) = 9.75$, $p < .001$, than fathers.

Bivariate Correlations

The correlations identified among the study variables are listed in Table 2. At the actor level, financial stress is significantly associated with depressive symptoms and the experience of interparental conflict in mothers and fathers, as well as with positive parenting by fathers. Furthermore, depressive symptoms are significantly associated with experiences of interparental conflict in mothers and fathers, and positive parenting by both parents. At the partner level, financial stress is significantly associated with depressive symptoms in mothers, as well as with feelings of interparental conflict in mothers and fathers, while depressive symptoms are significantly associated with experiences of interparental conflict in mothers and fathers, and positive parenting by fathers. Finally, the results reveal significant associations between problem behavior on the part of the adolescent and the other study variables.

Measurement Models

The initial measurement model with financial stress, experiences of interparental conflict and problem behavior of adolescents as latent constructs provided an adequate fit for the data, $\chi^2(342) = 756.83$, $p < .001$; CFI = .93, RMSEA = .07 (CI .06–.07); SRMR = .05. Interdependencies were found between mothers' and fathers' financial stress ($r_{\text{low-income}} = .83$, $p < .001$; $r_{\text{middle-income}} = .59$, $p < .001$; $r_{\text{high-income}} = .58$, $p < .001$) and experiences of interparental conflicts ($r_{\text{low-income}} = .89$, $p < .001$; $r_{\text{middle-income}} = .71$, $p < .001$; $r_{\text{high-income}} = .73$, $p < .001$). A test was conducted for each income group to determine whether the inclusion of separate scores for the latent constructs of mothers and fathers was warranted. Comparisons were made between models in which maternal and paternal constructs were modeled separately and models in which both constructs were combined into a single latent construct. The results of χ^2 difference tests indicate that combining the constructs decreases the fit significantly for financial stress [$\chi^2_{\text{low-income}}(1) = 26.62$ $p < .001$; $\chi^2_{\text{middle-income}}(1) = 103.69$, $p < .001$; $\chi^2_{\text{high-income}}(1) = 91.80$, $p < .001$], and interparental conflict [$\chi^2_{\text{low-income}}(1) = 24.29$ $p < .001$; $\chi^2_{\text{middle-income}}(1) = 101.52$, $p < .001$; $\chi^2_{\text{high-income}}(1) = 118.74$, $p < .001$]. As such, the latent constructs were modeled separately in the analyses.

To evaluate whether the latent constructs of financial stress and interparental conflict have the same meaning for mothers and fathers in low-, middle-, and high-income families, I tested for metric invariance by constraining the factor loadings for the latent constructs across groups. With regard to differences in parents' financial stress between low- and middle-income groups, comparison of the non-constrained with the constrained model yielded no significant difference in Chi square value, indicating that the measures are comparable across parents of both family types. Still, significant differences were found between low- and high-income mothers' financial stress [$\chi^2(1) = 6.18$, $p < .05$], low- and high-income fathers' financial stress [$\chi^2(1) = 10.17$, $p < .01$], and middle- and high-income fathers' financial stress [$\chi^2(1) = 19.70$, $p < .01$], suggesting that parents in high-come families ascribe a different meaning to financial stress than parents in the other families. With regard to interparental conflict experienced by mothers and fathers, no significant differences were found in Chi square values, indicating that the measures are comparable across mothers and fathers of the different families.

Structural Models

I first examined the relationship between the child's age and gender, the mother's and father's education and age, and the study variables. In low-income families, a parent's education was significantly associated with their financial stress ($\beta_{\text{low-income}} = -.12$, $p < .05$ and $\beta_{\text{low-income}} = -.21$, $p < .001$ for mothers and fathers, respectively). In middle-income families, a father's education was significantly associated with his financial stress ($\beta_{\text{middle-income}} = -.13$, $p < .05$) and the child's age was significantly associated with both the mother's ($\beta_{\text{middle-income}} = -.16$, $p < .01$) and father's ($\beta_{\text{middle-income}} = -.16$, $p < .01$) positive parenting. In high-income families, the child's age was significantly associated with mothering ($\beta_{\text{high-income}} = -.14$, $p < .05$) and problem behavior ($\beta_{\text{high-income}} = -.17$, $p < .01$), and the mother's and father's education was significantly associated with their own financial stress ($\beta_{\text{high-income}} = -.13$, $p < .05$ and $\beta_{\text{high-income}} = -.15$, $p < .05$ for mothers

Table 2 Correlations among the variables

Variables		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Financial need MR																		
2	Financial insecurity MR	.67**																	
3	Financial burden MR	.59**	.61**																
4	Financial need FR	.61**	.46**	.45**															
5	Financial insecurity FR	.43**	.49**	.42**	.63**														
6	Financial burden FR	.48**	.44**	.52**	.58**	.59**													
7	Depression MR	.23**	.30**	.23**	.16**	.15**	.14**												
8	Depression FR	.06	.08	.09*	.15**	.26**	.17**	.30**											
9	Overt hostility MR	.21**	.23**	.21**	.14**	.19**	.12**	.39**	.24**										
10	Verbal aggression MR	.19**	.23**	.23**	.14**	.20**	.15**	.36**	.22**	.72**									
11	Relationship stress MR	.21**	.23**	.21**	.13**	.16**	.10**	.47**	.29**	.55**	.47**								
12	Overt hostility FR	.14**	.12**	.10**	.15**	.24**	.17**	.30**	.34**	.61**	.55**	.41**							
13	Verbal aggression FR	.10**	.11**	.10**	.11**	.21**	.17**	.24**	.28**	.50**	.58**	.31**	.70**						
14	Relationship stress FR	.10**	.12**	.11**	.13**	.22**	.19**	.29**	.42**	.36**	.34**	.41**	.56**	.47**					
15	Positive mothering MR	−.07*	−.07	−.02	−.05	−.01	−.06	−.12**	−.11**	−.26**	−.23**	−.15**	−.15**	−.13**	−.08*				
16	Positive fathering FR	−.04	−.03	−.02	−.15**	−.13**	−.14**	−.05	−.24**	−.16**	−.14**	−.18**	−.23**	−.17**	−.15**	.26**			
17	Externalizing problem behavior MR	.19**	.16**	.17**	.11**	.09*	.13**	.25**	.14**	.26**	.25**	.21**	.15**	.15**	.14**	−.26**	−.19**		
18	Externalizing problem behavior FR	.09*	.09*	.10*	.13**	.13**	.18**	.13**	.16**	.16**	.20**	.11**	.20**	.23**	.19**	−.18**	−.25**	.69**	
	Mean	2.74	2.84	1.77	2.57	2.66	1.68	1.45	1.41	1.88	2.02	2.11	1.87	1.86	1.88	4.12	3.72	.18	.17
	Sd	1.33	1.15	.72	1.27	1.17	.70	.41	.38	.52	.62	.83	.51	.61	.71	.51	.62	.18	.18
	Skewness	.94	.59	.57	1.03	.80	.74	1.60	1.74	.85	.71	.81	.73	.80	.96	−.53	−.38	1.74	1.94
	Kurtosis	.54	.08	−.69	.77	.47	−.43	3.38	4.09	.84	.81	.11	.44	.53	1.03	.31	.35	4.39	5.27

MR mother report, *FR* father report

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

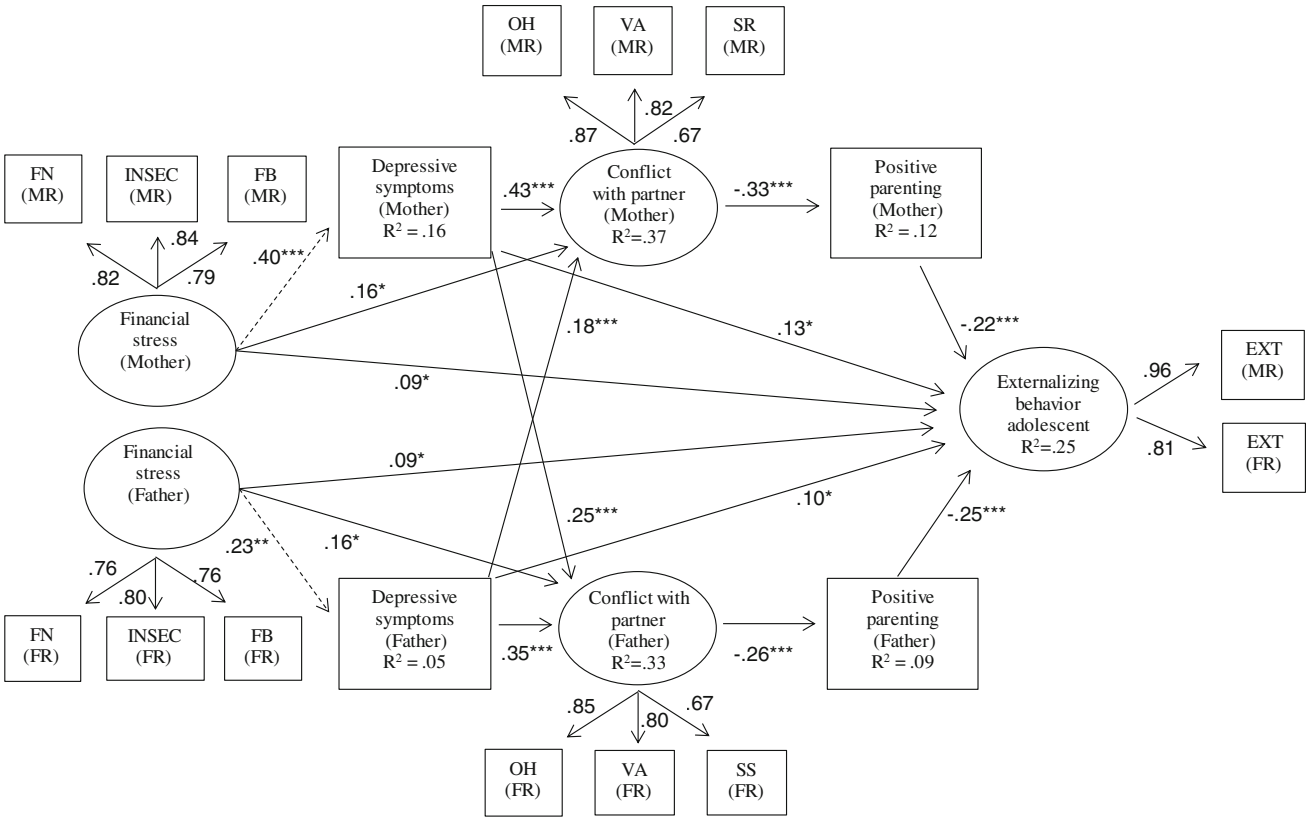

Fig. 2 Financial stress relating to adolescent problem behavior in low-income families. *FN* financial need, *INSEC* financial insecurity, *FB* financial burden, *OH* overt hositility, *VA* verbal aggression, *RS* stress in relationship, *EXT* externalizing behavior of adolescent, *MR* mother report, *FR* father report. All reported coefficients are standardized values, adjusted for the influence of covariates. Non significant paths are not included. *Dashed lines* represent gender different pathways. *$p < .05$; **$p < .01$; ***$p < .001$

and fathers, respectively). My structural model below are adjusted for the influence of these covariates.

First, a fully constrained structural model with low-, middle-, and high-income families as a grouping variable was compared with a structural model in which the paths for mothers and fathers were set as equal, but in which the paths between low-, middle-, and high-income families were set as different (e.g., the path from low-income parents' financial stress to depressive symptoms was set as different from to the path from middle-income parents' financial stress to depressive symptoms). The χ^2 difference test was significant, $\chi^2(28) = 42.77$, $p < .05$, indicating that the pathways from financial stress to parent and adolescent functioning operate differently in low-, middle-, and high-income families. The results of the fit statistics indicated an adequate model fit: $\chi^2(588) = 1{,}036.93$, $p < .001$; CFI = .91, RMSEA = .06 (CI .05–.06); SRMR = .06.

Second, within each group and for each path, parent gender differences were tested. One-by-one comparisons of the constrained model to the unconstrained model revealed some gender differences. In low-income families, a gender difference in the actor effects from financial stress to depressive symptoms was found: $\chi^2(1) = 7.31$, $p < .001$. This result indicates that the strength of the pathways from financial stress to depressive symptoms is higher for mothers than it is for fathers (see Fig. 2). In middle-income families, a gender difference was found in the actor effects from financial stress to positive parenting: $\chi^2(1) = 5.93$, $p < .05$. This finding indicated that financial stress in fathers has a negative effect on positive parenting, whereas there is no significant actor effect between financial stress in mothers and their positive parenting (see Fig. 3). Furthermore, a gender difference was found in the effects from depressive symptoms to adolescent outcome, $\chi^2(1) = 8.26$, $p < .01$: depressive symptoms in middle-income mothers are positively associated with problem behavior in adolescents, whereas depressive symptoms in middle-income fathers are not. In addition, a gender difference was found in the effects from interparental conflict to problem behavior in adolescents: $\chi^2(1) = 8.41$, $p < .01$. This result indicates that the strength of the pathway from interparental conflict experienced by mothers to adolescent outcome is higher than that from interparental conflict

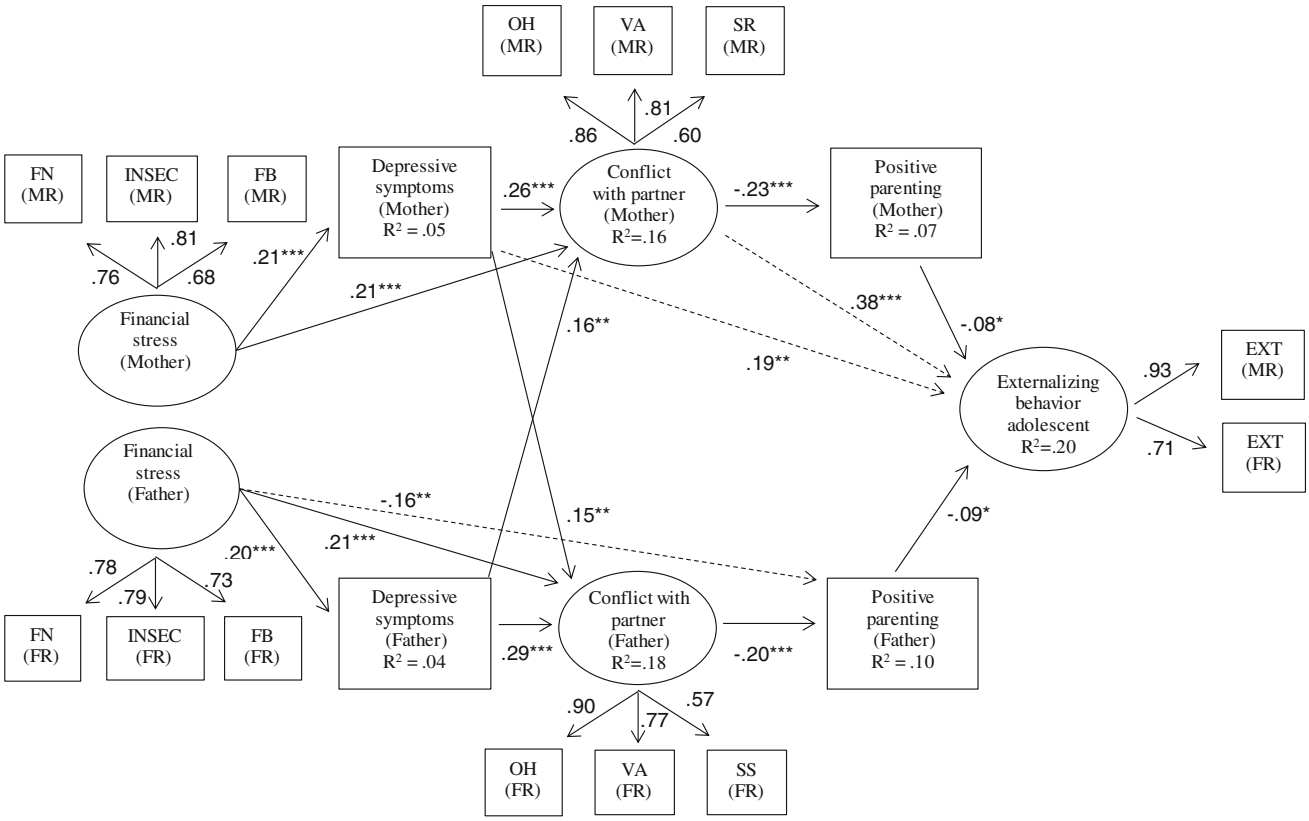

Fig. 3 Financial stress relating to adolescent problem behavior in middle-income families. *FN* financial need, *INSEC* financial insecurity, *FB* financial burden, *OH* overt hositility, *VA* verbal aggression, *RS* stress in relationship, *EXT* externalizing behavior of adolescent, *MR* mother report, *FR* father report. All reported coefficients are standardized values, adjusted for the influence of covariates. Non significant paths are not included. *Dashed lines* represent gender different pathways. *$p < .05$; **$p < .01$; ***$p < .001$

experienced by fathers. In high-income families, no differences between mothers and fathers were found. The final structural model provided a good fit, $\chi^2(584) = 1{,}010.21$, $p < .001$; CFI = .92, RMSEA = .05 (CI .05–.06); SRMR = .06.

Figures 2, 3 and 4 present the structural models for each group separately. The test results for each of my models are consistent with the family stress model in that parents' depressive symptoms, interparental conflict and parenting are mediators between parents' financial stress and problem behavior in adolescents. More specifically, financial stress is positively related to depressive symptoms and to interparental conflict, with interparental conflict being negatively associated with positive parenting and positive parenting is negatively associated with problem behavior in adolescents. The results further indicate significant partner effects from depressive symptoms to interparental conflict. However, in some respects, the models of low-income and middle-income families deviate from the original family stress model. In low-income families, the direct effects between financial stress and problem behavior in adolescents yielded significant (see Fig. 2). Furthermore, significant direct effects were found between parental depressive symptoms and problem behavior in adolescents (see Fig. 2). In middle-income families, the model deviates from the family stress model in that a significant direct effect was found between a father's financial stress and his parenting, and a significant direct effect was found between a mother's depressive symptoms and problem behavior in adolescents (see Fig. 3).

Next, between the groups and for each path, one-by-one-comparisons were made to test whether the strength of the pathways differs between parents of families with different income levels. First, differences were examined between low- and middle-income families. In low-income families, the strength of the pathway between mothers' financial stress and their own depressive feelings [$\chi^2(1) = 3.87$, $p < .05$], and both parents' positive parenting and problem behavior in adolescents [$\chi^2(1) = 6.48$, $p < .05$] was significantly higher compared to those in middle-income families, whereas the strength of the pathways between mothers' experiences of interparental conflict and problem behavior in adolescents [$\chi^2(1) = 7.68$, $p < .01$] was significantly lower. Second, differences were examined

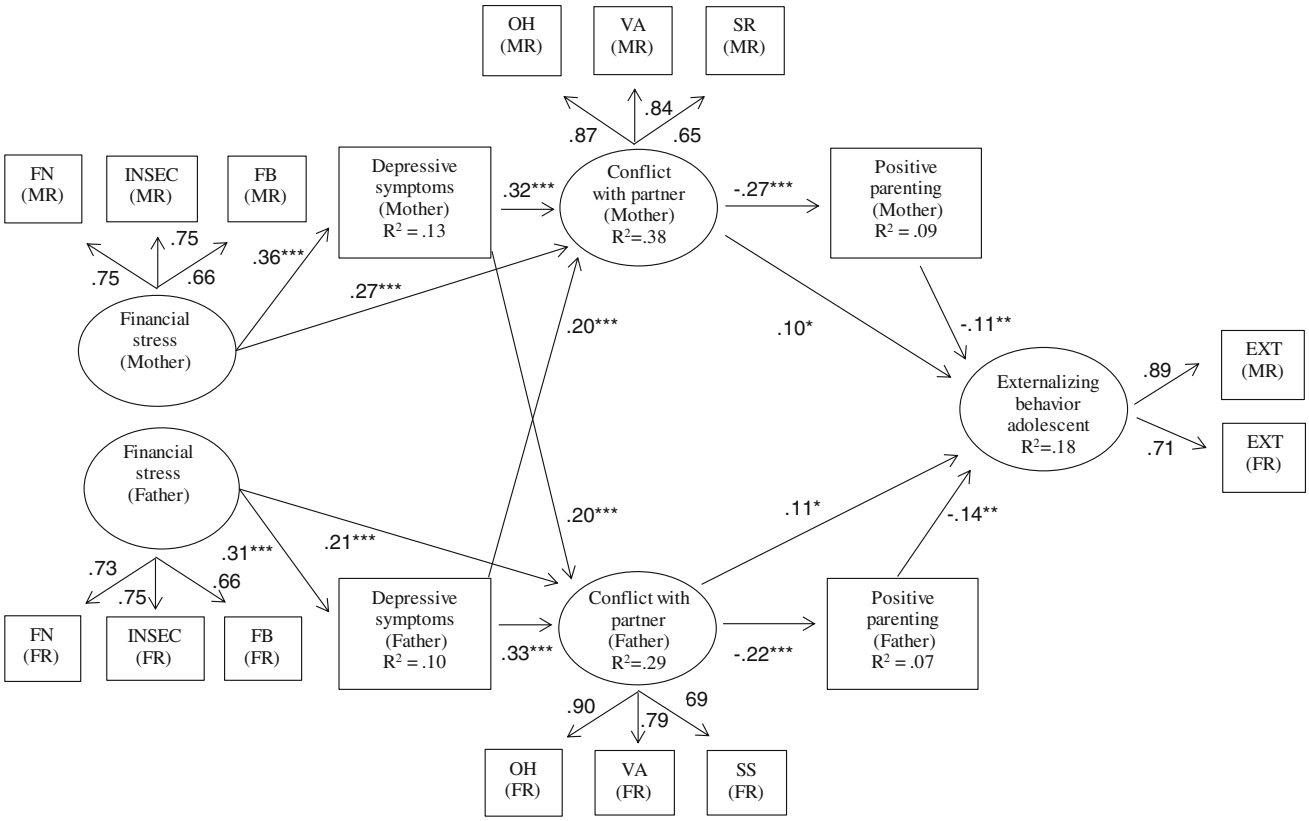

Fig. 4 Financial stress relating to adolescent problem behavior in high-income families. *FN* financial need, *INSEC* financial insecurity, *FB* financial burden, *OH* overt hositility, *VA* verbal aggression, *RS* stress in relationship, *EXT* externalizing behavior of adolescent, *MR* mother report, *FR* father report. All reported coefficients are standardized values, adjusted for the influence of covariates. Non significant paths are not included. *$p < .05$; **$p < .01$; ***$p < .001$

between middle- and high-income families. In middle-income families, the strength of the pathways between fathers' financial stress and positive parenting [$\chi^2(1) = 3.76$, $p = .05$], mothers' depressive feelings and problem behavior in adolescents [$\chi^2(1) = 4.91$, $p < .05$] and mothers' experiences of interparental conflict and problem behavior in adolescents [$\chi^2(1) = 8.87$, $p < .01$] was significantly higher than those in high-income families, whereas the strength of the pathways from both parents' financial stress and depressive feelings was significantly lower [$\chi^2(1) = 7.81$, $p < .01$]. Third, comparisons were made between low- and high-income families. In low-income families, the strength of the pathways between fathers' financial stress and personal depressive feelings [$\chi^2(1) = 9.35$, $p < .01$], and between both parents' financial stress and interpersonal conflict [$\chi^2(1) = 4.89$, $p < .05$], was significantly lower than in high-income families, whereas the strength of the pathways between both parents' parenting and problem behavior in adolescents [$\chi^2(1) = 4.57$, $p < .05$] was higher.

Finally, as a formal test for evidence of mediation, the INDIRECT command in Mplus was used to estimate the value and significance of the product of the indirect pathways by which financial stress influences problem behavior in adolescents. Only the significant pathways were included in my analyses (see Figs. 2, 3, 4). First, the pathways between financial stress and interparental conflict were tested. In each group, the indirect effect of a mother's financial stress on interparental conflict is significant (indirect $\beta_{\text{low-income}} = .17$, $p < .001$, indirect $\beta_{\text{middle-income}} = .05$, $p < .001$, indirect $\beta_{\text{high-income}} = .13$, $p < .001$), as that of a father's financial stress on interparental conflict (indirect $\beta_{\text{low-income}} = .08$, $p < .01$, indirect $\beta_{\text{middle-income}} = .05$, $p < .001$, indirect $\beta_{\text{high-income}} = .10$, $p < .001$). As such, the results provide evidence that depressive symptoms partially mediate the relationship between financial stress and interparental conflict. Second, the indirect pathway between financial stress and positive parenting was tested. As expected, in each group, there is a significant indirect effect from financial stress in mothers to their positive parenting through their depressive symptoms and experiences of interparental conflict (indirect $\beta_{\text{low-income}} = -.11$, $p < .001$, indirect $\beta_{\text{middle-income}} = -.06$, $p < .01$, indirect $\beta_{\text{high-income}} = -.12$, $p < .001$). Similar, the indirect pathway from financial stress in fathers to their parenting, through their depressive

symptoms and experiences of interparental conflict is significant (indirect $\beta_{\text{low-income}} = -.06$, $p < .001$, indirect $\beta_{\text{middle-income}} = -.05$, $p < .01$, indirect $\beta_{\text{high-income}} = -.07$, $p < .001$). Finally, the analyses reveal that the total indirect effect from financial stress in mothers to problem behavior in adolescents is significant (indirect $\beta_{\text{low-income}} = .08$, $p < .01$, indirect $\beta_{\text{middle-income}} = .11$, $p < .001$, indirect $\beta_{\text{high-income}} = .09$, $p < .001$). Similarly, the total indirect effect from financial stress in fathers to problem behavior in adolescents is significant (indirect $\beta_{\text{low-income}} = .04$, $p < .01$, indirect $\beta_{\text{middle-income}} = .02$, $p < .05$, indirect $\beta_{\text{high-income}} = .07$, $p < .001$).

Discussion

Adolescence is considered a crucial and significant period of an individual's life (Boardman and Saint Onge 2005). The challenges that youngsters face at this stage in life may have lasting effects throughout the life-course (Wheaton and Clarke 2003). Several studies have shown that adolescents growing up in low-income families face many challenges that adolescents from more advantaged families do not (Duncan and Brooks-Gunn 2000). Nevertheless, while the effects of financial hardship and stress on adolescent's lives have been widely documented, the mechanism by which financial stress affects adolescents is less well understood (Barnett 2008), and little is known about the mechanisms of subjective financial stress in families with different income levels. The present study, therefore, wanted to examine whether processes governing the relationship between financial stress and adolescent problem behavior operate in different ways for low-, middle-, and high-income families. Applying an actor–partner interdependence approach to the family stress model, the study focused on within-group and between-group differences.

The current study tested two hypotheses. The first hypothesis was that the processes governing the relationship between financial stress and adolescent outcomes would differ in low-, middle-, and high-income families. I expected that in low-income families, both direct and indirect effects of financial stress on adolescent problem behavior would occur, while only indirect effects were expected in middle- to high-income families. Furthermore, the strength of the effects of financial stress on parents' depressive symptoms, interparental conflict, and parenting problems were expected to be higher in low-income families. The second hypothesis was that gender differences would appear in the actor and partner pathways of mothers and fathers with respect to adolescent outcomes.

Consistent with the model proposed by Ponnet et al. (2013b), the findings suggest that in each of the families the association between parents' financial stress and problem behavior in adolescents is mediated through parents' depressive symptoms, interparental conflict, and positive parenting. More specifically, more financial stress results in more depressive symptoms and more interparental conflict, with more interparental conflict in turn resulting in less positive parenting, while more positive parenting results in less problem behavior in adolescents. Furthermore, by focusing on effects within and between family members, a relational element was found, with a parent's behavior not only depending on his or her feelings of stress, but also on the stress level of the partner (Kenny et al. 2006). In each of the families, interdependencies between mothers and fathers were found, as was evidence of partner effects between depressive symptoms and interparental conflict, suggesting that more depressive symptoms result in more relationship adjustments by the partner. The latter finding underscores the importance of treating parental depressive symptoms and their ramifications at the family level. Although parents can have depressive symptoms that arise independently of the partner, these depressive symptoms have implications for other family members. Clinicians might therefore assist family members by providing information, as well as fostering communication and family problem-solving and coping skills, so that families can emerge stronger and more resourceful in meeting future challenges (Sanford et al. 2003; Riley et al. 2008). Furthermore, affirming family strengths and potential in the midst of difficulties might help family members to counter a sense of helplessness, and encourage them to take the initiative and face severe ordeals head on (Walsh 2002, 2003).

However, in addition to these points of similarity, the analyses revealed that family stress processes operate in different ways for low-, middle-, and high-income families, thus confirming the first hypothesis. In particular, the findings indicate that in addition to a higher absolute level of financial stress in low-income families, a low-income mother's financial stress has a more detrimental impact in terms of more depressive feelings than mothers in middle-income families. Furthermore, in low-income families, financial stress experienced by mothers and fathers has significant direct and indirect effects on problem behavior in adolescents, while in middle- and high-income families only significant indirect effects were found. From a policy perspective, the findings demonstrate that families at the lower level of the income distribution do face very real consequences from having insufficient financial resources. Therefore, the provision of adequate protection against financial hardship is an important duty of any welfare state worthy of its name (Marx 2013). One way to do this would be to provide social benefits that ensure a life free from financial poverty. For example, as suggested by Marchal

et al. (2014), policymakers might support measures that benefit workers on minimum incomes, such as housing and heating allowances, as well as child benefits, additional in-kind benefits and (free) access to services.

The findings further demonstrate that both mothers and fathers in low-income families exhibit less positive parenting behaviors, but that the pathways from low-income mothers' and fathers' supportive parenting are more strongly related to less problem behavior in adolescents compared to those from mothers and fathers in middle- and high-income families. As suggested by one of the reviewers, this indicates that despite financial stressors, some families show resilience, and this resilience may be more protective than in families with fewer stressors. Furthermore, parents often want to shield their children from the stress they experience. In the case of financial difficulties, one way to do so is to avoid talking about financial matters and important purchases in front of the children. However, the focus of this study was families with adolescents, who have more spending opportunities than younger children (e.g., by going out in the evening or into town with their friends) (Otto 2013). When parents are not able to give their children pocket money or when they cannot contribute to some adolescent-related expenses, the financial difficulties experienced by the parents also become a reality for the adolescent. As such, adolescents may become aware of their family's circumstances (Delgado et al. 2013). Combined with the fact that parent–adolescent relationships are more reciprocal in nature during this period (De Goede et al. 2009), this may result in an increased susceptibility of adolescents to the warmth and support offered by parents. However, in the present study, concerns about the family's financial situation were measured at the parent level, not at the adolescent level. When focusing on families with different income levels, it might therefore be interesting for future studies to question adolescents about their perceptions of the family's financial situation and to examine the role of these perceptions in the parent–adolescent relationship and with regard to adolescent adjustment.

With respect to the second objective, namely to investigate whether the strength of the pathways differs between mothers and fathers, the results suggest that family stress processes are gendered to some extent. In low-income families, but not in middle- and high-income families, the mother's financial stress has more of a detrimental impact on her depressive symptoms than a father's financial stress has on his depressive symptoms. A possible explanation for this finding is that women have been found to use more emotion-focused strategies to cope with stressors, involving attempts to reduce distress through rumination about negative emotional states, while men seem to be more problem-focused or use denial as a strategy (Falconier and Epstein 2011). The fact that this gender difference is only present in low-income families might be a result of the higher absolute level of financial stress in these families, compared to the other two groups. However, it is interesting that women in all families reported significantly more financial stress than men. As suggested by Falconier and Epstein (2011), one reason might be that women's potential to generate more income is constrained because of the sexual division of household chores, such as childcare, and women's disadvantaged position in the labor market. In other words, because of their limited ability to resolve the family's financial difficulties, women may experience higher levels of financial stress.

The study further revealed several gender differences in middle-income families. Consistent with Ponnet et al. (2013b) and in line with the fathering-vulnerability hypothesis (Cummings et al. 2004), the financial stress experienced by fathers in middle-income families had a direct effect on positive parenting, while this was not the case for mothers. Furthermore, a mother's depressive symptoms and experience of interparental conflict resulted in significantly more problem behavior in adolescents, while a father's depressive symptoms and experiences of interparental conflict did not. It is interesting to note that these gender differences only applied to middle-income families, not to low- and high-income families. Although the findings demonstrate that family processes operate in different ways for families with different income levels, it would be interesting for future studies on family stress processes to investigate the consequences as well as the determinants of financial stress, such as whether family members believe that both mothers and fathers should contribute to the household income or household chores.

It is important to note some limitations of this study. First, the analyses were conducted on cross-sectional data, meaning that causal relationships can only be theoretically inferred. However, from a theoretical perspective and based on results from longitudinal studies on family stress processes (Linver et al. 2002; Kiernan and Huerta 2008; Mistry et al. 2008), it can be assumed that financial stress has an influence on the outcomes of children through its effects on the lives of their parents.

Second, the preliminary analyses revealed that the latent construct of financial stress was not metric invariant across the three groups, indicating that parents in high-income families ascribe a different meaning to financial stress than parents in the other groups. Thus, the findings demonstrate that the family stress model holds for low-, middle-, and high-income families, insofar as the association between financial stress and problem behavior in adolescents is mediated by parental depressive symptoms, interparental conflict, and positive parenting. However, when comparing family stress processes between different income groups, the results must be interpreted with caution: comparisons between low- and middle-income families can be made

without restriction, but when comparing high-income families and the other two groups, the interpretation of the data is complicated.

A third issue is that this study focused on the consequences of financial stress but did not take into consideration how the financial stressors emerged. However, it can be assumed that the financial stress of a high-income father who is worried about how to pay the mortgage on his house is different from that of a low-income father who is having difficulties paying the rent. While the former can reduce his financial stress, for example, by deciding to live in a smaller house, which may result in a lower mortgage or a financial cushion, the latter might have fewer opportunities to counter his financial difficulties. Furthermore, as suggested by a reviewer, financial burdens may not impact each individual to the same extent but may depend on the value attached to financial resources. These values might be culturally sensitive. Future studies on family stress processes might therefore also include information about ethnicity so that researchers can examine in what way ethnicity affects the associations between financial stress and adolescent outcomes.

A fourth limitation is that, although it was not the focus of this study, the influence of several background variables associated with the adolescent and their family should be examined in a more sophisticated way. For example, birth order and the quality of sibling relationships are important variables that are associated with both parenting and adolescent externalizing problem behavior (Slomkowski et al. 2001; Begue and Roche 2005; Meunier et al. 2011, 2012). There is also evidence that fewer financial resources often mean there is a greater need for adolescents to help out around the house and assist their families as best they can (Kiang et al. 2013). Assisting one's family and having a positive attitudes towards this have been suggested to be protective factors in adolescent development because they promote close family relationships (Kiang 2012; Fuligni and Pedersen 2002). In future studies on family stress processes, this might therefore be interesting to focus more on adolescent-related variables. Finally, the results explained between 18 % (high-income) and 25 % (low-income) of the variance in adolescent problem behavior. This indicates that there is variance in adolescent problem behavior that is not accounted for by the variables in the models. As suggested by Conger et al. (2010), research that looks beyond the family and targets other potential mediators such as peers, schools, and community characteristics may add to the explanatory power of the family stress model.

Conclusion

Growing up and living with financial hardship is detrimental to one's physical and mental health (Miller and Taylor 2012). Although the effects of financial hardship and stress on adolescent's lives are widely documented, the mechanism by which financial stress affects adolescents is less well understood (Barnett 2008; Shek 2003; Conger et al. 2010). The present study therefore examined whether processes governing the relationship between financial stress and adolescent problem behavior operate in different ways in low-, middle-, and high-income families. The study also contributed to the literature by applying an actor–partner interdependence approach to the family stress model and studying distinct pathways by which the financial stress of mothers and fathers impacts on the problem behavior of adolescents. The focus of this study was thus on within-group and between-group effects. The findings revealed that family stress processes operate in different ways in families with different income levels. Direct and indirect effects of financial stress on adolescent problem behavior were found in low-income families, while only indirect effects were found in middle- to high-income families. Furthermore, in low- and middle-income families, the processes are parent gendered to some extent. The findings underscore the importance of including multiple family members in future studies on family stress processes, and demonstrate that the level of income moderates the relationship between financial stress and adolescent adjustment.

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