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Family Relationships and Adolescent Psychosocial Outcomes: Converging Findings From Eastern and Western Cultures

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This study investigated the role of parent–adolescent relationships in mediating the association between family-related negative life events and adolescent depressive symptoms and problem behaviors among 1,696 eleventh graders from the United States ($n = 201$), China ($n = 502$), Korea ($n = 497$), and Czech Republic ($n = 496$). Results indicated that perceived parental involvement and parent–adolescent conflict mediated the link between family-related life events and adolescent depressed mood. The path from family-related life events to adolescent problem behaviors was mediated by perceived parental involvement, parent–adolescent conflict, and perceived parental sanctions of adolescent misconduct. With the exception of minor cross-cultural differences in the magnitude of associations among variables, this study revealed considerable similarity in the association of family factors with adolescent internalizing and externalizing symptomatology. The findings contribute to the growing literature on culture-general developmental processes.

Because the family is such an important context of adolescent development, a considerable amount of research has focused on family-related negative life events and family processes during this period. Family-related negative life events (e.g., parental job loss or divorce) put

tremendous strain on all family members and present a risk for adolescent depressive symptomatology and problem behavior (Compas, 1987; Compas & Wagner, 1991; Deater-Deckard, Dodge, Bates, & Pettit, 1998; Formoso, Gonzales, & Aiken, 2000; Greenberger, Chen, Tally, & Dong, 2000). Exposure to relatively minor, episodic stressful life events such as family financial difficulties have only a short-term impact on adolescent well-being (Suh, Diener, & Fujita, 1996); however, exposure to more serious negative circumstances may have long-lasting effects. For example, a large number of studies (see Amato, 2000, for a review) have identified long-term negative effects of parental divorce on adolescent psychosocial adjustment, and these effects of divorce appear to extend into young adulthood (Chase-Lansdale, Cherlin, & Kiernan, 1995).

Parent–Adolescent Relationships as Mediators of the Link Between Family-Related Negative Life Events and Adolescent Psychosocial Adjustment

Family-related negative life events have a potential negative effect on adolescent adjustment. Previous studies (e.g., Conger et al., 1992; Conger et al., 2002) have shown that family relationships mediate this association. In this article we focus on the three aspects of parent–adolescent relationships as potential mediators of the links between family-related negative life events and adolescent outcomes. Specifically, we investigate the mediating role of parental involvement, parent–adolescent conflict, and perceived parental sanctions of adolescent misconduct.

Parental involvement. Results of a recent study by Stattin and Kerr (2000) indicate that parental knowledge of adolescent activities and parental warmth may be conceptually related inasmuch as adolescents who perceive their parents as warm and accepting are more likely to disclose information about their activities to parents. These two variables are good indicators of the overall level of parental involvement in adolescent life (Stattin & Kerr, 2000).

Both parental warmth and parental knowledge of adolescent activities influence adolescents' overall psychological adjustment. Numerous studies have shown that adolescents whose parents convey warm and caring attitudes toward their children tend to have lower levels of depressed mood (Greenberger & Chen, 1996; Greenberger et al., 2000; Steinberg, Mounts, Lamborn, & Dornbusch, 1991). The first two studies, respectively, included samples of European American and Asian American junior high school and college age students (Greenberger & Chen, 1996) and high school students from China (Greenberger et al., 2000). Parental warmth is

also negatively related to a variety of adolescent problem behaviors, such as antisocial behavior, school misconduct, and status violations among adolescents of various ethnic and cultural backgrounds (e.g., African Americans, Asian Americans, Hispanic Americans, European Americans, and Chinese; see Jessor et al., 2003; Steinberg et al., 1991).

Several studies (Barber, 1996; Gray & Steinberg, 1999; Steinberg et al., 1991) have shown that greater parental knowledge of adolescent activities (usually conceptualized as parental monitoring) is associated with reduced adolescent problem behaviors. According to Jacobson and Crockett (2000), parental monitoring is not associated with adolescent depressive symptoms for boys but is related to both boys' and girls' misconduct. Cross-cultural findings are consistent with these results; that is, higher parental monitoring has been linked to adolescents' lower involvement in a variety of problem behaviors such as antisocial behavior, school misconduct, and status violations among adolescents from Australia, Hong Kong, and the United States (Feldman, Rosenthal, Mont-Reynaud, Leung, & Lau, 1991) and among Chinese, Chinese American, and European American adolescents (Chen, Greenberger, Lester, Dong, & Guo, 1998).

Researchers have shown that negative life events have an impact on adolescents' psychological adjustment through their negative effect on the quality of interactions between parents and adolescents (Dodge, 1990) and parental knowledge of adolescents' activities (Simons, Lin, Gordon, Conger, & Lorenz, 1999). Fauber, Forehand, Thomas, and Wierson (1990) also reported that parental rejection mediates the link between marital conflict (one measure of family-related negative life events) and adolescent problem behavior and depressed mood. Conger and colleagues (Conger et al., 1992; Conger et al., 2002) have developed and tested a family stress model that identified the quality of the parent-child relationship (measured as the combined score of parental warmth, parental hostility, and parents' child management skills) as a mediator of the link between family economic hardship and adolescents' adjustment.

Parent-adolescent conflict. Adolescence is a period of life during which autonomy-related changes are negotiated between parents and adolescents, and parent-child conflict increases (Paikoff & Brooks-Gunn, 1991). The level of conflict varies among families as a function of prior family relationships, family structure, and individual parent and child characteristics (Montemayor, 1986; Silverberg & Steinberg, 1987; Small, Eastman, & Cornelius, 1988). Much has been written about the dynamics of conflict in the lives of adolescents and their parents (Collins, 1990; Smetana, 1988). Several studies have shown that high parent-adolescent conflict is related to adolescent problem behaviors (e.g., Ary et al., 1999;

Chen et al, 1998; Maggs & Galambos, 1993). Conflict also has been linked to adolescent depressed mood for Chinese, Chinese American, and European American adolescents (Greenberger & Chen, 1996; Shek, 1997). Forkel and Silbereisen (2001) reported that family climate—in particular, family cohesion and low conflict—mediated the relation between the family's economic hardship and adolescent depressed mood. Similarly, Wadsworth and Compas (2002) found that family conflict mediated the link between economic strain and adolescent adjustment.

Parental sanctions of adolescent misconduct. Whereas parental knowledge of their adolescents' activities indicates the degree to which parents are generally aware of or try to "keep on top of" their adolescents' activities and potential involvement in problem behaviors, parental disapproval, or sanctions, of problem behaviors represent a disciplinary aspect of parental control. This component of parental control is also related to adolescent problem behavior, with adolescents' perception of parental disapproval of misconduct being related to lower involvement in problem behaviors (Beam, Gil-Rivas, Greenberger, & Chen, 2002; Greenberger, Chen, & Beam, 1998).

The Proposed Model

Based on the family stress model (Conger et al., 1992), we constructed a model of associations among family-related negative life events, parent-adolescent relationships, and adolescent outcomes (Figure 1). As indicated in Figure 1, we proposed that parental involvement and parent-adolescent conflict mediate the association between family-related negative life events and adolescent depressed mood. The three aspects of parent-adolescent relationships (i.e., perceived parental involvement, parent-adolescent conflict, and perceived parental sanctions [disapproval] of adolescent misconduct) were expected to mediate the link between family-related negative life events and adolescent problem behavior. We also examined whether the links from family-related negative life events to adolescent outcomes were completely or partially mediated by perceived parental involvement, parent-adolescent conflict, and perceived parental sanctions (disapproval).

We tested our model across samples of adolescents in four countries: the United States, China, Korea, and the Czech Republic. These four countries are diverse with respect to their degree of cultural orientation toward individualism-collectivism, as well as their social and economic development. A recent study of 68 countries (Suh, Diener, Oishi, &

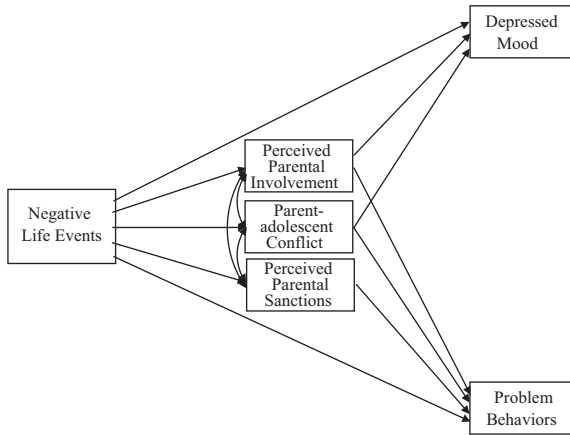


FIGURE 1 Hypothesized relations between family factors and adolescent outcomes.

Triandis, 1998) established that the United States was the most individualistic country, with an individualism–collectivism score of 9.55 on a 10-point scale ranging from 1 (*most collectivist*) to 10 (*most individualistic*). The Czech Republic (combined with Slovakia) had an individualism score of 7.00, South Korea had an individualism score of 2.40, and China had an individualism score off 2.00; that is, China and South Korea, in that order, were the most collectivistic. The four countries also vary in their political systems, from a communist state in China to a federal republic with strong democratic traditions in the United States. At the time of data collection, in 1996 and 1997, the Czech Republic was undergoing a major shift from a socialist political and economic system toward parliamentary democracy. Korea for some time has been experiencing a shift toward a Western lifestyle and social norms. Economic differences among these countries are also substantial, as illustrated by the national product per capita in 1994: \$24,700 for the United States, \$2,200 for China, \$9,500 for Korea, and \$7,200 for the Czech Republic (Central Intelligence Agency, 1994).

Because of increasing evidence that demonstrates cross-cultural similarities in developmental processes and the fundamental structures of parent–adolescent relationships, the proposed model was expected to fit the data for all four countries (Chen, Lee, & Stevenson, 1996; Greenberger & Chen, 1996; Rowe, Vazsonyi, & Flannery, 1994; Steinberg, 2001; Vazsonyi, Hibbert, & Snider, 2003). However, some cross-cultural differences in the magnitude of associations were expected. Specifically, perceived parental involvement and parent–adolescent conflict were expected to be more strongly related to depressed mood in the collectivist

cultures (China and Korea) because of their stronger emphasis on the interdependent self and social harmony (Triandis, 1995). Perceived parental sanctions were expected to have a weaker association with problem behaviors for youths from China and Korea because of greater involvement of other individuals and social institutions (e.g., teachers, the media) in expressing and reinforcing a common ideology about correct behavior in these collectivist societies (Chen et al., 1998).

Finally, gender differences were explored within each cultural group. In view of previous research (Peterson, Sarigiani, & Kennedy, 1991; Steinberg, 1999), we expected that girls would report on average higher levels of depressed mood and lower levels of involvement in problem behaviors. We did not expect gender differences in the degree of model fit or in the magnitude of association among the variables in the model.

METHOD

Participants

Participants were 1,696 eleventh graders from major cities in the United States ($n = 201$), China ($n = 502$), Korea ($n = 497$), and the Czech Republic ($n = 496$; see Table 1). They attended public schools in working-class through middle-class urban neighborhoods in Los Angeles, United States; Tianjin, China; Seoul, Korea; and Brno, Czech Republic. To ensure as best as we could the comparability of the samples, we selected schools in which students' achievement scores were average for their respective cities. The decision to focus on 11th graders further improved comparability inasmuch as none of the participants was in the middle of a school transition (e.g., from middle school to high school). Such transitions occur at different times in the four countries. The Chinese adolescents were on average 1 year older than their counterparts in the rest of the countries because Chinese youths begin their elementary school education 1 year later than students in the United States, Korea, and Czech Republic.

The ethnic composition of each of the samples was approximately representative of its country's or region's diversity. For the U.S. sample, 48% of participants were of European descent, 12% were Latino/Latina, 9% were African American, 10% were Asian, and 21% were of mixed ethnic origin. The ethnic proportions reflect the diversity of many Southern Californian urban areas. Consistent with Tianjin and Seoul population statistics, the Chinese sample was 94% Han Chinese, and close to 100% of Korean participants were of Korean descent. The majority of youths (87%) from the Czech Republic were of Czech ethnic descent, compared to

TABLE 1
Summary Statistics for Demographic Variables

<i>Variable</i>	<i>U.S.</i>	<i>China</i>	<i>Korea</i>	<i>Czech Republic</i>
Sample size	201	502	497	496
Age (years)				
<i>M</i>	16.65	17.64	16.47	16.86
<i>SD</i>	0.57	0.60	0.56	0.75
Gender				
% female	53.2	48.4	49.8	50.2
% male	46.8	51.6	50.2	49.8
Marital status of biological parents (%)				
Married to each other	58	94	88	71
Divorced or separate	29	3	4	21
Other (not married, widowed, or other)	13	3	8	8
Father's education (5-point scale)				
<i>M</i>	2.84	2.15	2.99	2.90
<i>SD</i>	1.03	1.09	1.33	0.92
Mother's education (5-point scale)				
<i>M</i>	2.69	1.81	2.31	2.70
<i>SD</i>	0.97	0.99	1.12	0.85
Father's (stepfather's) employment (%) ^a				
No	8	6	2	6
Yes, part-time	6	20	9	3
Yes, full-time	86	75	85	87
Mother's (stepmother's) employment (%) ^a				
No	22	20	54	8
Yes, part-time	20	22	10	8
Yes, full-time	59	58	34	83

^aPercentages for father's and mother's education do not add up to 100% because not all of the participants were living with a father/stepfather or mother/stepmother.

the national estimate of 81% reported for 1994 (Central Intelligence Agency, 1996).

Not surprising, family structure varied significantly across the four samples, $\chi^2(6, n = 1,693) = 189.33, p < .001$ (see Table 1). However, marital status of our participants' parents was close to representative of the national statistics for respective countries. Percentage of 35- to 44-year-olds who were married during 1990 was 70% in the United States, 95% in China, 93% in Korea, and 82% in the Czech Republic (United Nations, 1990).

On average, parents in all countries (except for Chinese mothers) had between a high school (coded as 2) and some college or vocational school (coded as 3) level of education. Levels of parents' educational attainment varied across countries: father's education, $F(3, 1607) = 56.37, p < .001$, and mother's education, $F(3, 1650) = 75.47, p < .001$. Chinese fathers had on average one-half unit and Chinese mothers, close to a whole unit, lower mean level of education than parents in each of the other countries (all Scheffé tests significant, $p < .001$, for comparisons between China and other countries). More Korean mothers than U.S., Chinese, and Czech mothers were not employed, $\chi^2(6, n = 1,587) = 344.66, p < .001$. These cross-cultural differences in parental education and maternal employment can be explained by the varying educational and employment opportunities in these countries (Chen et al., 1998), as well as by cross-cultural differences in traditional gender roles.

Procedure

An anonymous self-report questionnaire was completed by students during a regular class period. Active parental and student consent was obtained for the U.S. participants. Of the 300 11th-grade students enrolled in the U.S. school, 241 were present at school on the day of survey administration, and 201 (83% of those present) had acquired the necessary consent to participate. For Chinese, Korean, and Czech students, the authority to give consent was vested in the school. Almost all of the students present on the day of the survey completed it.¹

Measures

Bilingual developmental researchers, as opposed to regular translators, translated the survey to ensure that each of the scales addressed the

¹ Although U.S. students participated at a lower rate than students in other countries, the U.S. sample was nonetheless representative of the high school from which it was drawn. Based on the two indicators available (California Department of Education, 1999), ethnic composition and parental educational attainment, our sample was similar to the school as a whole. With respect to ethnicity, the figures for our sample and the school, respectively, were 48% versus 47% European American, 12% versus 25% Latino/Latina, 9% versus 15% African American, and 10% versus 11% Asian American. The discrepancy in the proportion of Latinos in our sample compared with the school is due in part to our inclusion of a mixed ethnicity category (21%) on our survey form. Sample and schoolwide figures for parental educational attainment, presented in that order, are as follows: 6% versus 6% less than a high school diploma, 24% versus 22% high school graduate, 37% versus 32% some college, 25% versus 32% 4-year college graduate, and 8% versus 8% graduate degree.

construct in question and each of the items was clearly phrased. Researchers from each country discussed the appropriateness of each of the items of the questionnaire and approved the translated version of the final survey.

Perceived parental involvement was measured with the Perceived Parental Warmth scale (Greenberger & Chen, 1996) and the Parental Knowledge scale (Chen et al., 1998). Perceived parental warmth was assessed with 11 items such as "My parents really understand me" and "My parents make me feel like a burden" (the latter, reverse scored). The scale values ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). The scale had adequate internal consistency: $\alpha = .88$ for the United States, $\alpha = .76$ for China, $\alpha = .84$ for Korea, and $\alpha = .86$ for the Czech Republic. The scale's validity was supported by significant positive correlations with the family cohesion subscale of the Moos and Moos (1984) Family Environment Scale for both European American and Asian American youths (Greenberger & Chen, 1996). The scale has cross-cultural factorial and strong factorial invariance for the U.S., Chinese, Korean, and Czech participants (Chen, Farruggia, Greenberger, & Powers, 2002). Parental knowledge was measured using a 10-item scale (Chen et al., 1998) that assessed the extent of parental knowledge of various aspects of the adolescent's life such as "where you go, when you go out at night" and "whom you spend your free time with." The scale values ranged from 1 (*never know*) to 4 (*always know*). Internal consistency of the scale was: $\alpha = .88$ for the United States, $\alpha = .80$ for China, $\alpha = .83$ for Korea, and $\alpha = .78$ for the Czech Republic. This scale also has been shown to have invariant factor structure for participants in this study (Chen, Dmitrieva, Farruggia, & Greenberger, 2002). The scores for these two scales (i.e., parental warmth and parental knowledge) were significantly correlated, with $r = .60$ for the United States, $r = .52$ for China, $r = .60$ for Korea, and $r = .53$ for the Czech Republic (all $ps < .001$). The scores for these two scales were standardized around grand mean and their average was used to create a summary Perceived Parental Involvement scale. The scores were standardized around grand mean (as opposed to group means) to enable cross-cultural mean comparisons.

Parent-adolescent conflict was assessed using an 11-item scale that measured frequency of parent-adolescent conflict in the past month about issues such as schoolwork, friends, and chores (Greenberger & Chen, 1996). The scale values ranged from 1 (*never*) to 4 (*almost everyday*). Internal consistency of the scale was: $\alpha = .85$ for the United States, $\alpha = .75$ for China, $\alpha = .82$ for Korea, and $\alpha = .86$ for the Czech Republic. This scale's validity was demonstrated by a positive correlation with Moos and Moos's (1984)

measure of conflict of the Family Environment Scale for adolescents of European and Asian American background (Greenberger & Chen, 1996).

Perceived parental sanctions (disapproval) of adolescent misconduct were assessed using an 11-item scale (Greenberger et al., 1998) that measured parental disapproval of various problem behaviors with items such as "How would your parents feel if you cut classes?" or "... smoked cigarettes frequently?" The scale values ranged from 1 (*would not care*) to 3 (*would be very upset*). The scale had adequate internal consistency: $\alpha = .84$ for the United States, $\alpha = .82$ for China, $\alpha = .80$ for Korea, and $\alpha = .76$ for the Czech Republic.

Family-related negative life events were measured with a 7-item checklist consisting of items typical of research on adolescent stressful life events (Compas, 1987; Wills, Vaccaro, & McNamara, 1992), such as exposure to death of a family member, parental divorce, conflict between the parents, and family financial difficulties. Cronbach's alpha is not reported for this scale because negative life events are not assumed to form a structure consistent with an underlying latent variable.

Adolescent depressed mood was measured with the 20-item Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). Adolescents reported the frequency of depressive symptoms over the past month with values ranging from 1 (*never*) to 4 (*almost every day*). This scale has been widely used and shown to be appropriate for use with adolescents (Radloff, 1991). Recent research (Tally, 2000) has demonstrated that the CES-D had an invariant factor structure for adolescents from the four samples included in this study. The scale had high internal consistency: $\alpha = .89$ for the United States, $\alpha = .85$ for China, $\alpha = .87$ for Korea, and $\alpha = .87$ for the Czech Republic.

Adolescent problem behaviors were measured with a 45-item scale that assessed frequency of adolescent involvement in problem behaviors over multiple domains including risk taking, substance use, status offenses, physical aggression, vandalism, theft, and other forms of problem behavior in the past 6 months (adapted from Chen et al., 1998). Response values were 1 (never), 2 (once or twice), and 3 (more often) during the past 6 months. The scale had high internal consistency: $\alpha = .94$ for the United States, $\alpha = .89$ for China, $\alpha = .92$ for Korea, and $\alpha = .91$ for the Czech Republic.

Demographic information included students' age and gender. Family structure was coded into three categories: married, divorced, or other. Adolescents also reported mother's and father's education using five response categories ranging from junior high school to master's or professional degree and indicated their parents' employment status (full-time, part-time, or none).

RESULTS

Because we collected data from relatively large samples from China, Korea, and the Czech Republic, a conventional .05 level of significance could be sensitive to detecting chance differences among the samples. Therefore, all cross-cultural comparisons are reported using a $p < .01$ level of significance.

Mean Differences

Although mean comparisons are not central to this study, it is instructive to examine them briefly as a prelude to the core analyses of this study. A series of analyses of variance (ANOVAs) were performed to examine mean cross-cultural differences on key study variables (Table 2). Cross-cultural mean differences were found for each of the outcome variables of the study. Chinese adolescents reported significantly lower levels of involvement in problem behaviors than did youths from the other countries ($p < .001$ for Scheffé tests), and Korean adolescents reported significantly lower problem behavior than did youths from the Czech Republic and the United States ($p < .01$ for Scheffé tests). Reported levels of depressed mood also varied significantly across the cultural groups, with Korean and Czech adolescents reporting significantly higher levels of depressed mood than youths from the United States and China ($p < .001$ for Scheffé tests). Mean levels of the proposed explanatory variables also revealed significant cross-cultural differences. Most of the group differences were consistent with the literature. Chinese adolescents reported significantly lower parent-adolescent conflict than did the other groups ($p < .001$ for Scheffé tests). Chinese adolescents had the highest scores for perceived parental involvement and their scores were significantly higher than those for Korean youths ($p < .001$ for Scheffé test). In terms of adolescents' reports of perceived parental sanctions (disapproval), the scores were the lowest in Czech Republic and the highest in China ($p < .001$ for Scheffé tests comparing these groups). With the exception of problem behaviors, mean differences across cultures were in a practical sense trivial (see Table 2 for effect sizes).

Correlates of Problem Behaviors and Depressed Mood

Table 3 shows zero-order correlations among the study variables. All of the significant correlations were in the expected direction. There were three cross-cultural differences in the correlations between depressed

TABLE 2
Means (Standard Deviations) for the Explanatory and Outcome Variables With Associated Analyses of Variance

Variable	U.S.	China	Korea	Czech Republic	F	η^2	Scheffé ($p < .01$)
Outcome variables							
Problem behaviors	1.49 (0.32)	1.22 (0.17)	1.42 (0.40)	1.53 (0.49)	145.41***	.21	Cz, US, K > Ch, US > K
Depressed mood	1.94 (0.49)	1.96 (0.47)	2.17 (0.40)	2.10 (0.49)	23.22***	.04	K, Cz > Ch, US
Explanatory variables							
Perceived parental involvement	0.08 (1.05)	0.79 (0.82)	-0.14 (0.90)	-0.08 (0.85)	6.49***	.01	Ch > K
Perceived parental sanctions (disapproval)	2.71 (0.32)	2.78 (0.27)	2.76 (0.26)	2.61 (0.28)	34.04***	.06	Ch, K, US > Cz
Parent-adolescent conflict	1.87 (0.58)	1.43 (0.37)	1.74 (0.45)	1.75 (0.54)	62.33***	.10	US, Cz, K > Ch
Negative life events	1.19 (1.40)	0.84 (1.32)	0.96 (1.20)	1.01 (1.32)	3.54	.01	

Note. Cz = Czech Republic; US = United States; K = Korea; Ch = China.

*** $p < .001$.

TABLE 3
Bivariate Correlations, by Country

Variable	1	2	3	4	5	6
United States						
1. Perceived parental sanctions (disapproval)	–					
2. Perceived parental involvement	.14	–				
3. Parent–adolescent conflict	–.17	–.35***	–			
4. Negative life events	–.22**	–.09	.15	–		
5. Problem behaviors	–.42***	–.36***	.45***	.36***	–	
6. Depressed mood	.03	–.33***	.37***	.08	.15	–
China						
1. Perceived parental sanctions (disapproval)	–					
2. Perceived parental involvement	.25***	–				
3. Parent–adolescent conflict	–.25***	–.30***	–			
4. Negative life events	–.15**	–.19***	.22***	–		
5. Problem behaviors	–.35***	–.30***	.40***	.23***	–	
6. Depressed mood	–.12**	–.40***	.34***	.20***	.21***	–
Korea						
1. Perceived parental sanctions (disapproval)	–					
2. Perceived parental involvement	.14**	–				
3. Parent–adolescent conflict	–.08	–.31***	–			
4. Negative life events	–.13**	–.11	.17***	–		
5. Problem behaviors	–.29***	–.40***	.44***	.22***	–	
6. Depressed mood	.06	–.37***	.32***	.08	.11	–
Czech Republic						
1. Perceived parental sanctions	–					
2. Perceived parental involvement	.18***	–				
3. Parent–adolescent conflict	–.18***	–.47***	–			
4. Negative life events	–.22***	–.20***	.36***	–		
5. Problem behaviors	–.42***	–.40***	.43***	.31***	–	
6. Depressed mood	–.04	–.32***	.42***	.19***	.23***	–

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

mood and predictor variables. Perceived parental sanctions (disapproval) were related significantly to depressed mood only in China. This correlation was significantly different from that of the Korean sample, Fisher’s r -to- z transformation yielded $z = 2.87, p < .01$. Also, the positive association between negative life events and parent–adolescent conflict was greater among Czech adolescents than among U.S. and Korean adolescents; Fisher’s r -to- z transformations yielded $z = 2.68, p < .01$ for the Czech Republic versus United States comparison and $z = 3.22, p < .01$ for the Czech Republic versus Korea comparison.

TABLE 4
Summary of Final Model Fit Across Four Countries

	$\chi^2(df^a)$	<i>p</i>	CFI	GFI	AGFI	RMSEA	$\Delta\chi^2(1)^b$
Partial Mediation Model							
United States	3.65	.161	.991	.994	.937	.064	
China	0.57	.754	1.000	1.000	.996	.000	
Korea	14.15	.001	.967	.991	.902	.111	
Czech Republic	2.84	.241	.998	.998	.980	.029	
Model With Direct Path From Negative Life Events to Problem Behaviors Removed							
United States	18.70	.000	.911	.971	.796	.162	15.05***
China	7.13	.000	.990	.995	.967	.052	6.56
Korea	22.11	.000	.949	.986	.900	.113	7.96**
Czech Republic	11.48	.009	.984	.992	.946	.076	8.65**
Model With Direct Path From Negative Life Events to Depressed Mood Removed—Final Model							
United States	3.68	.298	.996	.994	.958	.034	.02
China	5.61	.134	.993	.996	.974	.041	5.01
Korea	14.35	.002	.969	.991	.934	.087	.70
Czech Republic	3.79	.285	.999	.997	.982	.023	.95

Note. CFI = comparative fit index; GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; RMSEA = root mean square error of approximation.

^aDegrees of freedom were 2 for the partial mediation model and 3 for the rest of the models.

^bResults are as compared with the partial mediation model.

p* < .01; *p* < .001.

Path Analyses

Path analyses examining the association between family factors and adolescent outcomes were conducted using the maximum likelihood estimation method with EQS 5.7 (Bentler, 1995). Three models were tested for each sample. The partial mediation model specified both direct and mediated effects of family-related negative life events on adolescent depressed mood and problem behaviors. This model had a good to adequate fit for the U.S., Chinese, and Czech samples, as indicated by the fit indexes (see Table 4).² For the Korean sample, however, the AGFI and RMSEA

²A model is considered as having a good fit when the values of the comparative fit index (CFI), goodness-of-fit Index (GFI), and adjusted goodness-of-fit index (AGFI) are above .95 (Browne & Cudeck, 1993). In addition, a root mean square error of approximation (RMSEA) below .05 indicates a very good model fit, a value of .08 indicates an adequate fit, and a value above .10 indicates a poor model fit (Browne & Cudeck, 1993).

indexes were poor. In the two subsequent models, the direct paths from stressful life events were removed one at a time. When the direct link from family-related negative life events to depressed mood was removed, the model fit did not become significantly worse for any of the four cultural groups, indicating that perceived parental involvement and parent-adolescent conflict completely mediated the path from negative life events to depressed mood. On the other hand, model fit became significantly worse for the U.S., Korean, and Czech samples after removal of the direct path from negative life events to adolescent problem behaviors, as indicated by the significant chi-square change for the models in these countries (see Table 4). Therefore, the final model specified complete mediation of the relation between negative life events depressed mood and partial mediation of the path from negative life events to adolescent problem behaviors. This final model had a good to adequate fit in all four countries (see the fit statistics in Table 4).

Figure 2 shows standardized regression coefficients for the final model in four countries. The final model accounted for 18% to 21% of variance in depressed mood and 26% to 40% of variance in adolescent problem behaviors. Multigroup comparisons of the path coefficients were performed to evaluate these differences.³ Compared with the constrained model, the model that allowed all path coefficients to vary across countries had a significantly better fit, $\Delta\chi^2(24) = 68.93, p < .001$, indicating that there were cross-cultural differences in the magnitude of associations among the variables. Each path was evaluated to identify the sources of these differences (see Table 5 for the chi-square difference statistic for each path). In line with our hypotheses, Chinese and Korean adolescents had a lower association between problem behaviors and perceived parental sanctions (disapproval) of adolescent misconduct. Contrary to our hypotheses, depressed mood did not have a stronger association with parental involvement and parent-adolescent conflict for Chinese or Korean adolescents. There was also an unanticipated cross-cultural difference. The association between negative life events and parent-adolescent conflict

³ As reported in the Method section, 67% of the eligible students from the U.S. school participated in the survey, as opposed to nearly 100% participation from other countries. Additional analyses were performed to evaluate potential selection bias in the U.S. sample. On the assumption that poorly performing students were overrepresented among the absentees (Rozelle, 1968), we reexamined the model using samples from China, Korea, and the Czech Republic that were potentially more comparable to the U.S. sample. Specifically, we used the subsamples of youths whose self-reported GPA fell at the top two thirds of the sample. Results indicated good model fit and estimates of the associations among the variables that are comparable to the original results (i.e., results with complete sample). This suggested that our conclusions regarding cross-cultural similarities are likely to be robust.

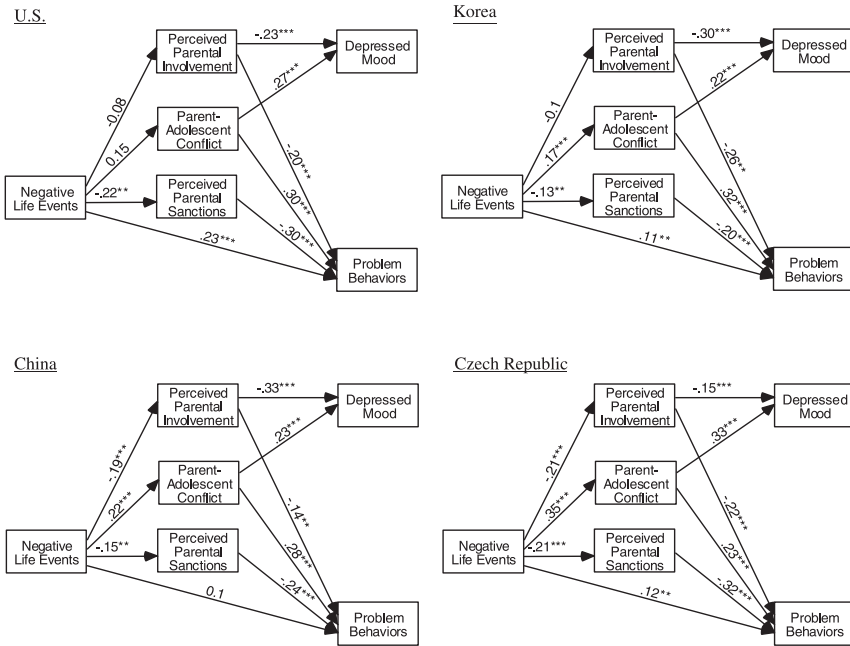


FIGURE 2 Standardized regression coefficients for the final model. ** $p < .01$; *** $p < .001$.

was significantly higher for youths from the Czech Republic than for adolescents from the rest of the countries.

Multigroup comparisons were performed to evaluate gender differences within each country. As indicated by the nonsignificant chi-square change statistic, there were no gender differences in the magnitude of associations among the variables in the model: United States, $\Delta\chi^2(9) = 16.68, ns$; China, $\Delta\chi^2(9) = 15.39, ns$; Korea, $\Delta\chi^2(9) = 11.53, ns$; and the Czech Republic, $\Delta\chi^2(9) = 19.46, ns$.

DISCUSSION

This study contributes to the literature on family relationships and adolescent behavior and mood in several ways. Because cross-cultural studies provide naturally occurring quasi-experimental designs, research on adolescent development benefits from investigation of the effects of family process variables on adolescents in different cultural contexts. Such studies can illuminate generalities and contingencies of developmental process.

TABLE 5
Unstandardized Path Coefficients

	U.S.	China	Korea	Czech Republic	$\Delta\chi^2(3)$	
Perceived parental involvement on:						
Negative life events	-.07	-.12***	-.08	-.13***	1.99	<i>ns</i>
Parent-adolescent conflict on:						
Negative life events	.07	.06***	.06***	.15***	17.10***	Ch, K, US < Cz
Perceived parental sanctions (disapproval) on:						
Negative life events	-.05**	-.03**	-.03**	-.05***	2.66	<i>ns</i>
Depressed mood on:						
Perceived parental involvement	-.11**	-.19***	-.13***	-.09**	9.48	<i>ns</i>
Parent-adolescent conflict	.23***	.29***	.19***	.30***	4.57	<i>ns</i>
Problem behaviors on:						
Negative life events	.05***	.01	.02**	.02**	7.96	<i>ns</i>
Perceived parental involvement	-.06**	-.03**	-.07***	-.07***	11.07	<i>ns</i>
Parent-adolescent conflict	.16***	.13***	.17***	.11***	3.91	<i>ns</i>
Perceived parental sanctions (disapproval)	-.29***	-.15***	-.18***	-.31***	15.86**	Ch, K < US, Cz

Note. Cz = Czech Republic; US = United States; K = Korea; Ch = China.
** $p < .01$; *** $p < .001$.

The present study adapted and tested the family stress model across four very different countries. Family-related negative life events were related to lower levels of perceived parental involvement and higher rates of parent-adolescent conflict. Poorer quality of parent-adolescent relationships in turn was related to higher levels of adolescent depressed mood. The association between family-related life events and adolescent problem behaviors was mediated by perceived parental involvement, parent-adolescent conflict, and perceived parental sanctions (disapproval) of adolescent misconduct.

Our results revealed substantial similarities across four cultures in the role that family factors play in adolescent depressive symptomatology and problem behaviors. Overall, the final model had a good to adequate fit for all four cultural groups (the partial mediation model had a poor fit for Korea but the final model had an adequate fit). Although there were general similarities in the structure of the associations among variables, cultural context appeared to condition the relative importance of some family process variables in adolescents' problem behavior and depressive

symptomatology. One of the three hypothesized cross-cultural differences was supported by data. As we anticipated, perceived parental sanctions (disapproval) of adolescent misconduct were less strongly associated with problem behaviors for Chinese and Korean youths than for U.S. and Czech Republic youth. Perceived parental involvement and parent–adolescent conflict, however, did not have a stronger association with depressed mood for Chinese and Korean adolescents. This lack of cross-cultural differences challenges our assumption that a strong emphasis on social harmony in Asian cultures would result in greater importance of parent–adolescent conflict and parental involvement for adolescent depressed mood in China and Korea than in the United States and Czech Republic. Globalization trends might be creating changes in social norms in Asian cultures, such that it is becoming more common and perhaps more acceptable to express individual goals and needs and, thus, to accept a somewhat greater measure of interpersonal conflict in countries such as China and Korea. Other studies (see Oyserman, Coon, & Kimmelmeier, 2002, for a review and meta-analyses) have indicated that traditionally assumed cross-cultural research differences are not always supported by data. The globalization trend may help to account for our findings of only modest cross-cultural differences in the mean levels of and associations among the key study variables.

The findings of this study are consistent with a growing research literature on culture-general developmental processes (Rowe et al., 1994; Vazsonyi et al., 2003). Our findings add support to the studies that show cross-cultural similarities in the patterns of associations among family variables and a variety of adolescent outcomes such as adolescent values, involvement in problem behaviors, and academic performance among U.S., Australian, Japanese, and Chinese adolescents (Chen et al., 1996; Feldman & Rosenthal, 1991; Feldman et al., 1991; Rosenthal & Feldman 1991) and substance use among European American and Hispanic American youths (Flannery, Vazsonyi, & Rowe, 1996).

Unanticipated cross-cultural difference was also observed. Family-related negative life events had a stronger association with parent–adolescent conflict for adolescents from the Czech Republic than for adolescents from other countries. It is important to note that although these cross-cultural differences were statistically significant, they were moderate in magnitude, and the path coefficients were in the same direction for all countries. It seems prudent not to stretch for premature interpretations of findings that, because they were not anticipated, should first be replicated.

One of the main limitations of this study is the cross-sectional nature of the data. It can be argued, for example, that adolescent depressed mood and problem behaviors have an effect on parent–child relationships and not vice

versa. Similarly, deterioration of parent-child relationships could contribute to family-related negative life events. However, several studies support our choice of the directionality of effects. Garber and Flynn (2001) reported that low maternal acceptance was predictive of adolescent depressive cognitions at a 3-year follow-up. Longitudinal data also support the idea that family-related negative life events temporally influence the quality of the parent-adolescent relationship (Shek, 1998). Similarly, in their study of bidirectional relations between stressful life events and either internalizing or externalizing behaviors, Kim, Conger, Elder, and Lorenz (2003) found a generally stronger link from stressful life events to both types of behavior, rather than from adjustment problems to stressful life events. Nonetheless, the presumed direction of associations among variables should be treated as preliminary and should be further evaluated with longitudinal data.

Another limitation of this study stems from its reliance on adolescents' reports with respect to both predictor and outcome variables. Although previous research (Chen et al., 1998; Smetana, Crean, & Daddis, 2002) has shown that reliance on adolescent report (as opposed to reports of adolescents and parents) of family relationships did not inflate the association among family variables and adolescent misconduct for Chinese, Chinese American, and U.S. adolescents, it is important to underscore that the present study evaluated the role of adolescents' perceptions of the parent-adolescent relationships. Results of this study would be strengthened if future studies using multiple sources of measurement yielded similar results.

Finally, we limited our samples to urban high school students to ensure some degree of cross-cultural comparability. Consequently, our four samples were not representative of all adolescents in their respective countries because high school attendance is not compulsory in China and the Czech Republic and because the proportion of urban populations varied among these countries. The difficulty in finding matching samples is a well-recognized problem in cross-cultural research (Stigler & Miller, 1991). Representative samples do not match and samples matched on one dimension are usually not representative of the population. However, assuming that each of our four cultural contexts is reflected among urban high school students in their respective countries, we believe that our samples allowed for cross-cultural tests of our model, which was the aim of our study.

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