



Links Between Parenting and Internalizing and Externalizing Problems: Cross-Cultural Evidence from Ten Countries

Alexander T. Vazsonyi¹ · Albert J. Ksinan^{1,4} · Magda Javakhishvili^{1,5} · J. Melissa Scarpate² · Emily Kahumoku-Fessler³

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Abstract

The present study tested the links between perceived maternal and paternal parenting and internalizing and externalizing problems across ten cultures (China, Czech Republic, Hungary, the Netherlands, Slovenia, Spain, Switzerland, Taiwan, Turkey, and the United States). Self-report data were collected from $N = 12,757$ adolescents ($M_{\text{age}} = 17.13$ years, 48.4% female). Multigroup confirmatory factor analyses and structural equation models tested whether: (1) the six parenting processes (closeness, support, monitoring, communication, peer approval, and conflict; Adolescent Family Process, Short Form (AFP-SF, 18 items) varied across cultures, and (2) the links between parenting processes and measures of internalizing and externalizing problems varied across cultures. Study findings indicated measurement invariance (configural and metric) of both maternal and paternal parenting processes and that the parenting—internalizing/externalizing problems links did not vary across cultures. Findings underscore the ubiquitous importance of parenting processes for internalizing and externalizing problems across diverse Asian, European, Eurasian, and North American cultures.

Keywords Family process · Measurement · Cross-national · Closeness · Conflict

Introduction

Parenting, its underlying goals, values, and practices share considerable similarity around the globe [1, 2]. However, little is known about whether parenting operates consistently across cultures. Most theoretical models developed on parent-adolescent relationships reflect limited cultural considerations, in part due to the bulk of previous work having been carried out in North America [3, 4]. More and more parenting scholarship is conducted in different cultures [5] as well as cross-culturally, calling for more nuanced tests of the degree to which parenting dimensions vary across cultures and whether they are generalizable [6, 7]. Previous research has been limited by a modest number of parenting constructs

or by focusing on maternal parenting only; the present study addresses these limitations. The current study employed Steinberg and Silk's [8] conceptual framework to inform the operationalization of parenting and tested its cross-cultural applicability by examining the links between both perceived maternal and paternal parenting processes and measures of adolescent internalizing and externalizing problems. This framework should be understood as an organizational heuristic, based on previous empirical work on the quality of and effects produced by the parent-adolescent relationship [9, 10], that is efficiently captured by three overarching dimensions, namely autonomy, harmony, and conflict.

Steinberg and Silk [8] mapped out three primary parenting domains, namely harmony, autonomy, and conflict, which efficiently capture and summarize most theoretical formulations about the parenting behaviors as well as the parent-adolescent relationship quality [see also 11]. Harmony refers to the affective dimension of the relationship and includes constructs such as closeness, intimate communication, and warmth [7]. Autonomy describes balancing growth and independence through connectedness and boundary-setting; it includes monitoring, restrictiveness, peer approval (parents' approval of the adolescent's friends),

✉ Alexander T. Vazsonyi
vazsonyi@uky.edu

¹ University of Kentucky, Lexington, USA

² Texas A & M University, San Antonio, San Antonio, USA

³ University of Houston-Clear Lake, Houston, USA

⁴ Masaryk University, Brno, Czech Republic

⁵ The City University of New York (CUNY), New York, USA

and support. Finally, the conflict dimension refers to existing tensions between the parent and adolescent, from mundane disagreements to more serious conflict [see also 12, 13]. The salience of several different parenting constructs, corresponding to each of the dimensions, was tested in the present study; these included closeness, support and communication (harmony dimension), monitoring and peer approval (autonomy dimension), and conflict (conflict dimension). Research has shown that harmony measures of parenting are negatively associated with both internalizing and externalizing problems, whereas the research on the autonomy dimensions is less straightforward; behavioral overcontrol results in more externalizing problems, while positive monitoring results in fewer such problems. On the other hand, intrusive, overprotective or psychological controlling parenting is associated with more internalizing problems. Finally, despite the fact some level of disagreement or conflict may have a functional significance, and therefore, is important for the parent-adolescent dyad, excessive conflict has been shown to be positively associated with more behavior problems, both internalizing and externalizing [8].

Some previous empirical tests of this framework have been carried out outside of North America. In a 5-wave longitudinal Dutch study of two adolescent cohorts (ages 12 to 16, and 16 to 20 years), Hadiwijaya et al. [5] used the three key dimensions (support, negative interaction and power/autonomy) to establish four distinct parent-adolescent profiles (labeled as turbulent, harmonious, authoritative, and uninvolved), each characterized by noticeable changes over time. In a related work, Hadiwijaya et al. [14] showed that adolescents in the “turbulent” relationship type were more likely to experience high levels of generalized anxiety, whereas those in the “harmonious” relationship type reported low generalized anxiety [15].

Rather than focusing on parent-adolescent relationship profiles or data-driven typologies though, the current study takes a somewhat different, multidimensional approach to assure more direct interpretation of the tested relationships [16]. In the context of cross-cultural comparative research, in particular, this might be an advantage, for it allows for a more nuanced understanding of how each of the parenting processes is associated with dependent measures. Also, despite some common variance shared by different parenting dimensions, they can still be readily discriminated, both conceptually and empirically [7, 17, 18].

One previous cross-cultural study that is particularly relevant for the present investigation was carried out by Vazsonyi et al. [7] who tested the links between six perceived maternal and paternal parenting processes assessed by the Adolescent Family Process [7] measure and internalizing as well as externalizing problems across four countries (Hungary, the Netherlands, Switzerland, and the United States). They found that these links were in fact invariant

across cultures. The present effort builds on and extends this work by testing the applicability of Steinberg and Silk's [8] framework of these maternal and paternal parent-adolescent relationship processes and their importance for explaining variability in both internalizing and externalizing problems across ten cultures, namely China, Czech Republic, Hungary, the Netherlands, Slovenia, Switzerland, Taiwan, Turkey, and the United States.

Links Between Parenting and Internalizing/ Externalizing Problems

A number of meta-analyses have focused on the associations between parenting and adolescent internalizing and externalizing problems. Pinquart [19, 20] showed that two parenting variables of interest, parental warmth and monitoring, significantly predicted internalizing ($r = -.20$ and $-.09$, for warmth and monitoring, respectively) and externalizing problems ($r = -.18$ and $-.19$ for warmth and monitoring, respectively) [see also 21]. Weymouth, Buehler, Zhou, and Henson [22] focused on the conflict dimension and found that whether it was operationalized as disagreement or hostility, parent-adolescent conflict was positively associated with a variety of indicators of poor adjustment, including internalizing and externalizing as well as academic problems (see also [23] for a study on a multicultural sample of rural youth). Finally, Rueger et al.'s [24] meta-analysis found that paternal (lack of) support was a salient predictor of depression throughout childhood and adolescence, both for boys and for girls [see also 25]. It is also important to note that research has repeatedly shown that behavioral control, parental knowledge, or monitoring, reduce the likelihood of adolescent externalizing problems and problem behaviors [11, 26–28].

In sum, research has supported the protective role of harmony (warmth) and autonomy (behavioral control) parenting dimensions, but also the deleterious effects of conflict on adolescent social competence, as well as on measures of internalizing and externalizing problems. A relatively modest number of direct cross-cultural comparisons have been conducted in this area, briefly reviewed next.

Cross-Cultural Tests of the Parenting Processes-Adjustment Links

Almost two decades ago, Vazsonyi and colleagues [7] identified the great need for and importance of conducting cross-cultural comparative research that tests the links between parenting processes and measures of adolescent adjustment. Yet, rigorous efforts that test the multidimensional nature of both maternal and paternal parenting, consistent with Steinberg and Silk's framework, remain relatively scarce. In their study, they tested the consistency of the links between six

maternal and paternal parenting dimensions measured by the Adolescent Family Process scale (AFP) [7] and internalizing and externalizing problems across four country samples and found that closeness, support, monitoring, communication, and peer approval were negatively, whereas conflict was positively, associated with adolescent internalizing and externalizing problems. These observed links were largely invariant across cultures. Related work, using at least part of the same parenting measure, has been carried out in other countries. Özdemir [29], for instance, used the communication subscale to predict adolescent self-esteem in Turkey, where results supported the positive role of parent-adolescent communication in adolescent self-esteem. Seiffge-Krenke et al. [30] used the support subscale to predict adolescent externalizing and internalizing symptoms across samples from France, Germany, Turkey, Greece, Peru, Pakistan, and Poland, providing complementary evidence. Caparrós [31] completed psychometric work that validated the multidimensional structure of the AFP measure among adolescents ($N=276$, ages 14 to 16 years, $M_{\text{age}}=14.94$) from Peru.

Other cross-cultural comparative efforts on the parenting and adjustment links among youth have shown that there is a similarity in the protective effects of parental acceptance and monitoring against misconduct among Australian, Chinese, and US adolescents [32], as well as between Chinese and Korean youth [33; for similarly consistent effects by warmth, see 34]. Furthermore, Barber, Stolz, Olsen, Collins, and Burchinal [35, see also 36] provided support for largely invariant associations between perceived parental support, psychological and behavioral control, and measures of depression and externalizing behaviors, based on samples from Bangladesh, China, India, Bosnia, Germany, Palestine, Colombia, and the United States, as well as three distinct ethnic groups in South Africa.

Eichelsheim et al. [37] tested the relationships between parenting measures and adolescent aggression and delinquency among Dutch and Moroccan youth. No differences were found either by ethnicity or by sex in either primarily high SES or “at risk” samples, where parental support, autonomy, and disclosure were negatively associated, and negativity was positively associated, with adolescent externalizing problems. Buist et al. [38] tested whether Dutch and Indian early adolescents ($N=274$ and 236 , $M_{\text{age}}=10.8$ and 10.9 years) differed concerning sibling and parent-child relationship quality and externalizing and internalizing problems. Indian adolescents reported more sibling warmth and parental negative interaction (i.e. conflict) than Dutch adolescents; however, the associations between sibling and parent-child relationship quality and externalizing and internalizing problems were similar.

Still other comparative studies have focused on autonomy granting. In a sample of youth from the United States, China, Mexico, and India (total $N=1017$), Supple, Ghazarian,

Peterson, and Bush [39] found that autonomy granting was associated with greater social competence (operationalized as academic achievement orientation) across countries albeit to a varying extent. Interestingly, the same autonomy granting measure negatively predicted achievement orientation in Latin American adolescent samples from Chile and Ecuador ($Ns=245$ and 185 , for Chilean and Ecuadorian samples, respectively; age range 11–18 years) [40], suggesting potential cultural differences in the effects of autonomy granting. Both parental warmth and autonomy granting positively predicted adolescent self-esteem and psychological well-being in Chinese and Mexican adolescents [41, 42], and also in a comparative study of Russian and U.S. adolescents [43].

In conclusion, cross-cultural comparative research on parent-adolescent relationship constructs and their associations with adolescent development and with adjustment provides evidence of protective effects of parental support, communication, warmth, and (some) behavioral control or monitoring. It should be noted that most of these studies tested the role of parenting characteristics that describe two broad dimensions of Steinberg and Silk’s [8] framework, namely harmony and support, but not the third domain, conflict. The present study included six perceived parent-adolescent relationship quality measures, both maternal and paternal, that more fully represent the three domains, and it tested their unique links with several measures of both internalizing and externalizing problems.

The Current Study

The adolescent samples of the current investigation came from distinct cultural, geographic, and national settings with different characteristics in demographic, economic, political, and social indicators (e.g., differences in income, poverty level, crime rate, alcohol and drug consumption, legal policies, divorce and teen birth rates, etc.) [44–47]. The goal of the present study was to test the applicability of Steinberg and Silk’s conceptualization of parenting using the multidimensional AFP measure across adolescent samples from diverse socio-cultural backgrounds. These included tests of measurement invariance of parenting variables as well as the similarity or difference in the links with internalizing and externalizing problems across adolescent samples from China, Czech Republic, Hungary, the Netherlands, Slovenia, Spain, Switzerland, Taiwan, Turkey, and the United States.

More specifically, the study tested six maternal and paternal subscales of perceived parenting and their associations with measures of internalizing and externalizing problems, namely depressive symptoms, anxiety symptoms, low well-being, and deviance, using multi-group confirmatory factor analyses (CFAs) and structural equation modeling (SEM). Although the main focus of the study was on the links

Table 1 Descriptive statistics of demographic variables by country samples

	Age		Sex (%)		Family structure (%)		College degree or higher (%)		Family income	
	Mean	SD	Male (%)	Female (%)	Two parent (%)	Other (%)	Mother (%)	Father (%)	Mean	SD
China (<i>N</i> =915)	16.20	1.17	47.0	53.0	86.7	13.3	4.8	10.1	2.44	1.00
Czech Republic (<i>N</i> =795)	17.53	1.27	54.7	45.3	73.7	26.3	19.4	19.1	2.45	1.05
Hungary (<i>N</i> =844)	16.52	1.22	67.9	32.1	86.9	13.1	20.7	22.6	3.08	1.10
Netherlands (<i>N</i> =1274)	16.11	1.14	46.8	53.2	91.5	8.5	27.2	47.2	2.97	1.12
Slovenia (<i>N</i> =1092)	16.81	1.26	37.0	63.0	82.2	17.8	11.0	11.4	2.03	0.99
Spain (<i>N</i> =803)	17.65	0.98	36.7	63.6	86.4	13.6	14.2	20.9	2.67	0.99
Switzerland (<i>N</i> =3530)	17.86	1.14	63.3	36.7	86.7	13.3	15.5	22.0	3.19	1.10
Taiwan (<i>N</i> =920)	16.51	1.72	58.9	41.1	82.9	17.1	3.5	6.1	2.30	1.15
Turkey (<i>N</i> =961)	16.51	1.32	39.4	60.6	93.3	6.7	11.0	23.6	1.73	0.98
USA (<i>N</i> =1623)	17.64	1.64	42.6	57.4	81.5	18.5	56.6	66.3	3.65	1.12

Percentage from valid responses. Family income was scored on a 5-point scale from low (1) to high (5)

between parenting dimensions and measures of internalizing and externalizing problems across cultures, as a first step, measurement invariance of maternal and paternal parenting dimensions needed to be established. Based on previous research, it was hypothesized that:

H1 Metric invariance would be found tenable for 6 maternal and 6 paternal perceived parenting subscales across ten country samples (i.e., China, Czech Republic, Hungary, the Netherlands, Slovenia, Spain, Switzerland, Taiwan, Turkey, and the United States).

H2 Perceived maternal and paternal closeness, communication, monitoring, support, and peer approval would be negatively associated, and conflict would be positively associated with adolescent internalizing (depressive symptoms, anxiety symptoms, low well-being) and externalizing problems (deviance). It was expected that these links would not vary by cultural developmental context.

Methods

Sample and Procedures

Anonymous self-report data were collected as part of the International Study of Adolescent Development and Problem Behaviors (ISAD) [48, 49]. The purpose of the ISAD was to study adolescent development utilizing large samples from different cultures. Data were collected from middle and late adolescents in medium-sized cities in China, Czech Republic, Japan, Hungary, the Netherlands, Slovenia, Spain,

Switzerland, Taiwan, Turkey, and the United States.¹ The study and data collections were approved by a University Institutional Review Board; in addition, local ethics reviews and approvals were obtained. Although most of these countries are currently considered economically developed democracies (more recent for some countries), they differ in a number of important respects from each other—legally, politically, economically, and socially [50, 51] (see Appendix A). Data were collected using anonymous in-school paper-and-pencil surveys during a one to two-hour class period. The same procedure for administration was used across all study locations, which included standard, brief instructions and assurances of anonymity. The survey was translated from English into each of the target languages and back-translated by bilingual translators. Surveys were examined by additional bilingual translators, and when translation was difficult or ambiguous, consensus was used to produce the final translation. Middle and late adolescents who were between 14 and 19 years old were selected for the current study. The final number of participants was *N* = 12,757 (mean age = 17.13 years, 48.4% female). The descriptive information for the final sample by country is presented in Table 1.

Measures

Participants were asked to complete a questionnaire that included questions on demographics (e.g., age, sex, family structure, and SES), perceived maternal and paternal parenting behaviors as well as measures of externalizing and internalizing behaviors.

¹ The Japanese subsample (*N* = 355) was collected from college students, as were some of the data in the Czech Republic, Slovenia, and the United States; these latter data were not included in the current study which focuses on middle and late adolescents.

Age

Age of the participants was measured by a single item where students indicated the month and year in which they were born, which was subtracted from the month and year of data collection in each sample.

Sex

Sex of the participants was measured by a single item: “What is your sex?” (1) *male* or (2) *female*. For the analyses, this was recoded into female (0 = *male*, 1 = *female*) for the ease of interpretation.

Family Structure

Adolescents were asked, “Which of the following home situations best applies to you?” Responses include (1) *biological parents*, (2) *biological mother only*, (3) *biological father only*, (4) *biological mother and stepfather*, (5) *biological father and stepmother*, (6) *biological parent and significant other*, and (7) *other*. The variable was dummy coded for analyses (0 = *not living with two parents*, 1 = *living with two parents*).

Socioeconomic Status (SES)

SES was computed as a standardized index of highest attained maternal education, paternal education, and annual family income. Income level was measured in each country in the local currency by the following question: “Please pick one of the following choices describing your family’s approximate total annual income” (1) *\$20,000 or less* (2) *\$20,000 to \$35,000*, (3) *\$35,000 to \$60,000*, or (4) *\$60,000 to \$100,000 or more*. Levels of income in each country were provided that matched typical local income distributions, rather than converting the dollar amounts shown. This resulted in comparable overall income distributions used in analyses, rather than an evaluation of purchasing power parity, for instance.

Parenting/Family Processes

Perceived parenting efforts as rated by adolescents were measured by the Adolescent Family Process measure (AFP) [7]. This 25-item measure assesses *closeness* (6 items), *support* (4 items that are reverse-coded), *monitoring* (4 items), *conflict* (3 items), *communication* (5 items), and *peer approval* (3 items; for item wording of all items, see Appendix B). It is important to note that monitoring in this study consists of “parental knowledge” items rather than control and surveillance items [52]. Responses were given on a five-point Likert scale, ranging from (1) *strongly disagree* to (5)

strongly agree for closeness, support, and monitoring and from (1) *never* to (5) *very often* for communication, conflict, and peer approval. The model fit of the AFP was tested in the current study and adjustments were made, resulting in a shortened AFP-SF version (see below). Table 2 includes reliability estimates of each AFP-SF maternal and paternal subscale by country.

Internalizing Problems

Depressive symptoms (7 items), anxiety symptoms (8 items), low emotional well-being (LWB; 7 items), and low self-esteem (LSE; 7 items) were measured by the Weinberger Adjustment Inventory [53]. All items were answered on a 5-point Likert-type scale ranging from *False* (1) to *True* (5) or *Almost never* (1) to *Almost always* (5). The reliability of depressive symptoms was $\alpha = .72$, anxiety symptoms $\alpha = .72$, LWB, $\alpha = .77$, and LSE, $\alpha = .71$ (based on the total sample across countries).

Externalizing Problems

Deviance was assessed by the 10-item Normative Deviance Scale, Short Form (NDS-SF10 [52] see [48] for full scale). Items were rated on a 5-point Likert-type scale ranging from *never* (1) to *more than 6 times* (5). This scale assessed “lifetime” norm-violating behaviors during adolescence in a culture-free manner to capture a broad spectrum of deviant behaviors, from less serious forms to assault. The items of the short form tap into the seven subscales from the full scale, namely vandalism, alcohol, drugs, school misconduct, general deviance, theft, and assault. The items were chosen based on the size of their loadings obtained from forced one-factor Principal Component Analysis of individual subscales. Item contributions to subscale consistency, their mean (distance from the Likert scale center), standard deviation, and corrected item-total score (subscale) were also considered. Sample items are: (Have you ever) “Got drunk just for the fun of it (at any age)?”, “Stayed out all night without informing your parents about your whereabouts?”, “Hit or threatened to hit another person?” The scale showed adequate internal consistency, $\alpha = .87$, based on the total sample across countries.

Plan of Analysis

First, descriptive statistics were computed for demographic variables as well as for AFP scales in each country. Following this, a series of confirmatory factor analyses (CFAs) were conducted for maternal AFP, paternal AFP, externalizing problems (deviance), and internalizing problems. All CFA models were estimated as configural (loadings, covariances, means, and intercepts free to vary across groups)

Table 2 Descriptive statistics for maternal and paternal subscales

	Closeness			Support			Monitoring			Communication			Conflict			Peer approval		
	α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>
Maternal AFP-SF																		
China	.77	3.60	0.89	.64	3.07	0.88	.65	3.34	0.86	.76	2.87	0.97	.80	2.74	0.92	.64	2.93	0.90
Czech Rep.	.82	3.89	0.96	.78	3.63	1.07	.76	3.47	1.06	.81	3.22	0.99	.82	2.58	0.89	.77	3.59	0.95
Hungary	.79	4.24	0.75	.61	3.77	0.81	.73	3.64	0.88	.73	3.40	0.85	.73	2.37	0.76	.75	3.19	0.92
Netherlands	.71	4.21	0.71	.65	3.77	0.89	.73	3.50	0.92	.74	3.38	0.90	.80	2.51	0.82	.70	3.79	0.95
Slovenia	.75	4.10	0.86	.72	3.79	0.98	.70	3.67	0.95	.73	3.51	0.89	.76	2.59	0.79	.72	3.75	0.87
Spain	.72	4.30	0.76	.69	4.05	0.90	.66	3.64	0.89	.76	3.57	0.94	.82	2.60	0.89	.78	4.16	0.84
Switzerland	.72	4.38	0.72	.67	4.13	0.86	.77	3.52	1.02	.75	3.45	0.90	.76	2.50	0.78	.75	4.18	0.77
Taiwan	.78	3.74	0.85	.62	3.20	0.90	.71	3.75	0.89	.79	2.94	0.94	.76	2.70	0.83	.72	3.06	0.94
Turkey	.78	4.30	0.85	.67	3.69	1.02	.72	4.10	0.93	.81	3.42	1.08	.78	2.41	0.85	.73	3.35	1.00
USA	.79	4.29	0.84	.76	3.98	1.02	.77	3.66	0.98	.81	3.59	1.05	.83	2.59	0.93	.83	3.97	0.92
Paternal AFP-SF																		
China	.80	3.47	0.91	.61	3.30	0.86	.78	2.93	0.98	.81	2.65	1.03	.80	2.54	0.97	.74	2.77	0.97
Czech Rep.	.86	3.51	1.09	.79	3.61	1.05	.90	2.91	1.22	.88	2.75	1.09	.89	2.47	1.05	.87	3.26	1.12
Hungary	.84	3.84	0.94	.63	3.69	0.84	.83	3.18	1.01	.80	3.03	0.95	.77	2.33	0.84	.78	2.96	0.96
Netherlands	.77	4.02	0.80	.66	3.79	0.90	.85	2.64	1.05	.79	3.06	0.97	.86	2.43	0.94	.81	3.58	1.11
Slovenia	.83	3.72	1.05	.74	3.79	1.01	.81	3.27	1.10	.82	2.99	1.06	.78	2.48	0.95	.78	3.37	1.04
Spain	.79	3.90	0.97	.72	3.94	0.96	.82	3.08	1.09	.84	3.09	1.06	.86	2.44	0.97	.84	3.91	0.99
Switzerland	.79	4.06	0.89	.69	4.08	0.87	.86	2.83	1.13	.82	3.13	1.00	.82	2.47	0.88	.83	4.00	0.92
Taiwan	.82	3.53	0.95	.71	3.37	0.96	.84	3.04	1.11	.86	2.54	1.07	.86	2.34	0.98	.79	2.85	1.02
Turkey	.78	4.11	0.92	.69	3.68	1.05	.81	3.64	1.08	.83	3.01	1.13	.81	2.37	0.97	.78	3.18	1.08
USA	.84	4.03	0.98	.75	4.00	0.99	.87	3.07	1.12	.87	3.27	1.19	.86	2.38	1.01	.87	3.74	1.06

The α stands for reliability measured by Cronbach's alpha. Czech Rep. = Czech Republic

unless otherwise noted. The deviance model was estimated as unidimensional factor with 10 items as indicators. Covariates between residual variances of four pairs of items were added to the model, as these pairs of items consisted of items that were part of the same subscale in the original full NDS version and, therefore, contained some level of covariance. The internalizing problems model was indicated by a unidimensional factor with 4 subscales (LWB, depressive symptoms, anxiety symptoms, LSE) as indicators created by averaging across their items. The residual variances of depressive symptoms and anxiety symptoms subscales were permitted to covary.

The AFP models were specified and tested as a six-factor CFA with 25 items loading onto their respective parenting dimension, namely closeness, support, monitoring, conflict, communication, and peer approval. Covariances among the residuals of several items were added similarly to previous work [7]. As the primary focus of the current study is to compare parental behaviors cross-culturally, a test of metric invariance (invariance in factor loadings) was employed. The model fit of the constrained or metric model (with invariant factor loadings) was compared to model fit of the freely estimated or configural model. Then, correlations among study

variables were computed to analyze bivariate associations among variables of interest.

In the second part of analyses, these CFA models were extended to a structural model with paternal and maternal AFP, respectively, predicting deviance or internalizing behaviors. There, to test whether the predictive paths from the six AFP subscales were invariant across the cultures, these six paths were set to equality (meaning that corresponding paths were constrained to be equal across all 10 samples). This constrained model was compared with the original model where paths were freely varying. These models also included control variables (i.e., age, sex, family structure, SES). The predictive effects of the focal variables were then estimated.

To assess the absolute, as well as the relative model fit, several fit indices were employed. Since the χ^2 statistic is known to be affected by large sample sizes, alternative fit indices were employed for estimating model fit. For absolute model fit, the cut-off values of CFI > .90 and RMSEA < .08 were considered [54], as well as 90% confidence intervals of RMSEA. Similarly, to compare relative change in model fit, the cutoff values of Δ CFI < .01 and Δ RMSEA < .01 were used [55, 56]. The models were estimated in *Mplus* 7.4 [57]

using maximum likelihood with robust standard errors for estimating missing data (MLR).

The rate of missingness varied based on the variable, but it was generally quite low, averaging 1.86% for reports about mother’s parenting (range 0.38–5.0%), 3.71% for reports of father’s parenting (0.55–6%), 2.41% for externalizing behaviors (0.55–8.76%), and 1.16% for internalizing behaviors (0–4.19%). Given the use of the MLR estimator, the difference between models does not follow a chi-square distribution [58]. To compare models using χ^2 , a Satorra–Bentler (S–B) corrected χ^2 was employed.

Results

Descriptive Statistics: Background Variables

Table 1 provides information on the descriptive variables for each country, namely age, proportion of males/females, percentage of mothers and fathers with a college degree or higher, and mean family income. The mean ages across the samples were very similar and varied from 16.11 to 17.86 years of age, representing middle adolescence. The sex proportion was imbalanced for several samples; males were more prevalent in the Hungarian sample (67.9%), the Swiss sample (63.3%) and the Taiwanese (58.9%). On the other hand, girls were more frequent in the Spanish sample (63.6%), the Slovenian sample (63%), and the Turkish sample (60.6%). More than four fifths of adolescents lived with two parents, with a range from 73.7% (Czech Republic) to 93.3% (Turkey). The proportion of parents who had a college degree or above varied widely, from 3.5% (Taiwan) to 56.6% (USA) for mother, and from 6.1% (Taiwan) to 66.3% (USA) for father. Lastly, family income measured on a 1–5 scale generally varied around the middle value of 3, with the range of 1.73 (Turkey) to 3.65 (USA).

CFAs and Invariance Tests: AFP

Results from CFAs and invariance tests are presented in Table 4. First, confirmatory factor analysis was run as a configural multigroup model on the 25-item maternal and paternal AFP. The fit of the maternal model was acceptable, χ^2 (2520) = 8009.277, CFI = .939, RMSEA = .041, 90% RMSEA CI [.040, .042], as was the fit of the paternal AFP, χ^2 (2510) = 8147.978, CFI = .951, RMSEA = .042, 90% RMSEA CI [.041, .043]. Although the fit of both the paternal and maternal 25-item AFP model was acceptable, there were several items that had low loadings on their primary factor (i.e., $\lambda < .40$) or showed substantial cross-loadings (i.e., $\lambda > .30$) when the model was specified in exploratory factor analysis (EFAs). In addition, items with

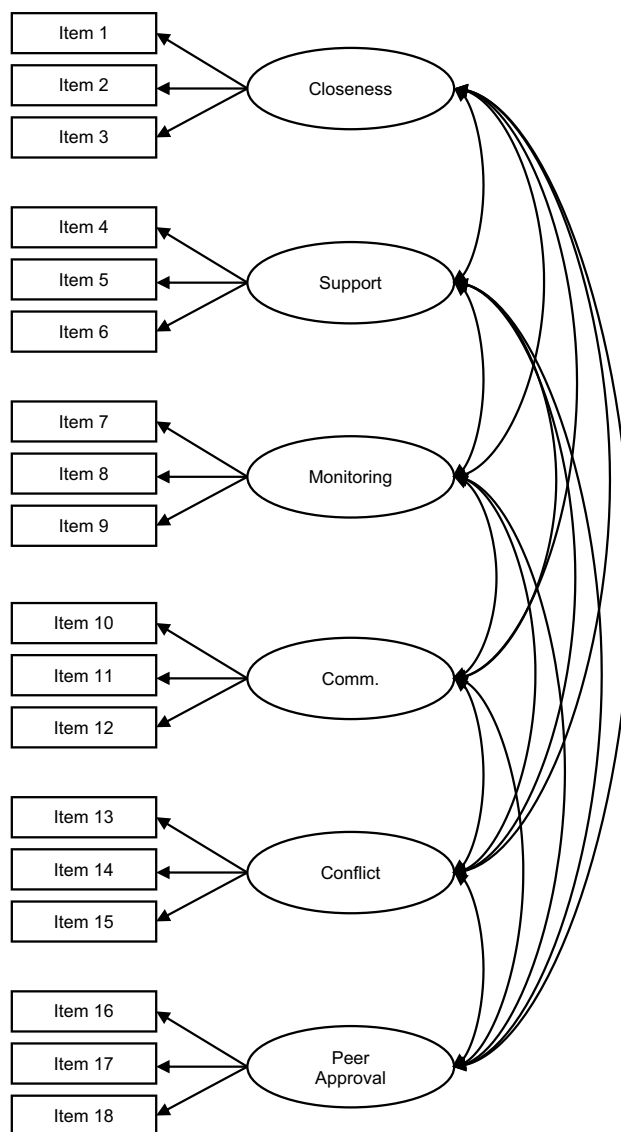


Fig. 1 The 18-item AFP-SF

previously defined covariances among residuals were also further scrutinized.

For these reasons, the model was re-specified by dropping these items. This led to a revised and shortened 18-item measure of the AFP scale, both for maternal and paternal items, the AFP-SF. This short form showed several advantages over the original one, namely the same number of items for each subscale (three), and no covariances specified among the residual variances of the items (see Fig. 1). More importantly, this scale had a statistically significant improvement in model fit as compared to the original scale, S-B $\Delta\chi^2$ (1320) = 4881.145, $p < .001$, with the following fit for the maternal configural model: χ^2 (1200) = 3146.581, CFI = .967, RMSEA = .036, 90% RMSEA CI [.034, .037]. Similarly, a statistically

Table 3 Correlation matrix of study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age															
2. Sex (female)	-.05***														
3. SES	.08***	-.02													
4. FS (two parents)	-.03***	.01	.11***												
5. Closeness	.10***	.07***	.13***	.08***											
6. Support	.16***	.04***	.15***	.04***	.52***										
7. Monitoring	-.10***	.22***	.08***	.08***	.32***	.09***									
8. Communication	.08***	.18***	.14***	.04***	.53***	.37***	.33***								
9. Conflict	-.05***	.08***	-.02	-.03***	-.34***	-.46***	-.07***	-.17***							
10. Peer Approval	.19***	.07***	.21***	.03***	.49***	.44***	.16***	.44***	-.18***						
11. Depression	-.07***	-.07***	-.20***	-.05***	-.26***	-.38***	.03***	-.16***	.28***	-.26***					
12. Anxiety	-.03	.21***	-.13***	-.03***	-.06***	-.18***	.13***	.04***	.20***	-.07***	.58***				
13. LWB	-.03	-.04	-.14***	-.04***	-.37***	-.26***	-.13***	-.28***	.13***	-.33***	.43***	.27***			
14. LSE	-.13***	.15***	-.20***	-.01	-.30***	-.31***	-.03***	-.22***	.19***	-.26***	.60***	.38***	.54***		
15. Deviance	.18***	-.31***	.11***	-.08***	-.16***	-.10***	-.30***	-.13***	.17***	-.04***	.02***	-.07***	.03***	-.05***	

The correlations for maternal AFP-SF are below the diagonal, whereas paternal AFP-SF is above the diagonal. Part of the matrix above diagonal is left blank as the estimates are duplicates of information from below the diagonal (dependent measures)

LWB low well-being, LSE low self-esteem, FS family structure

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

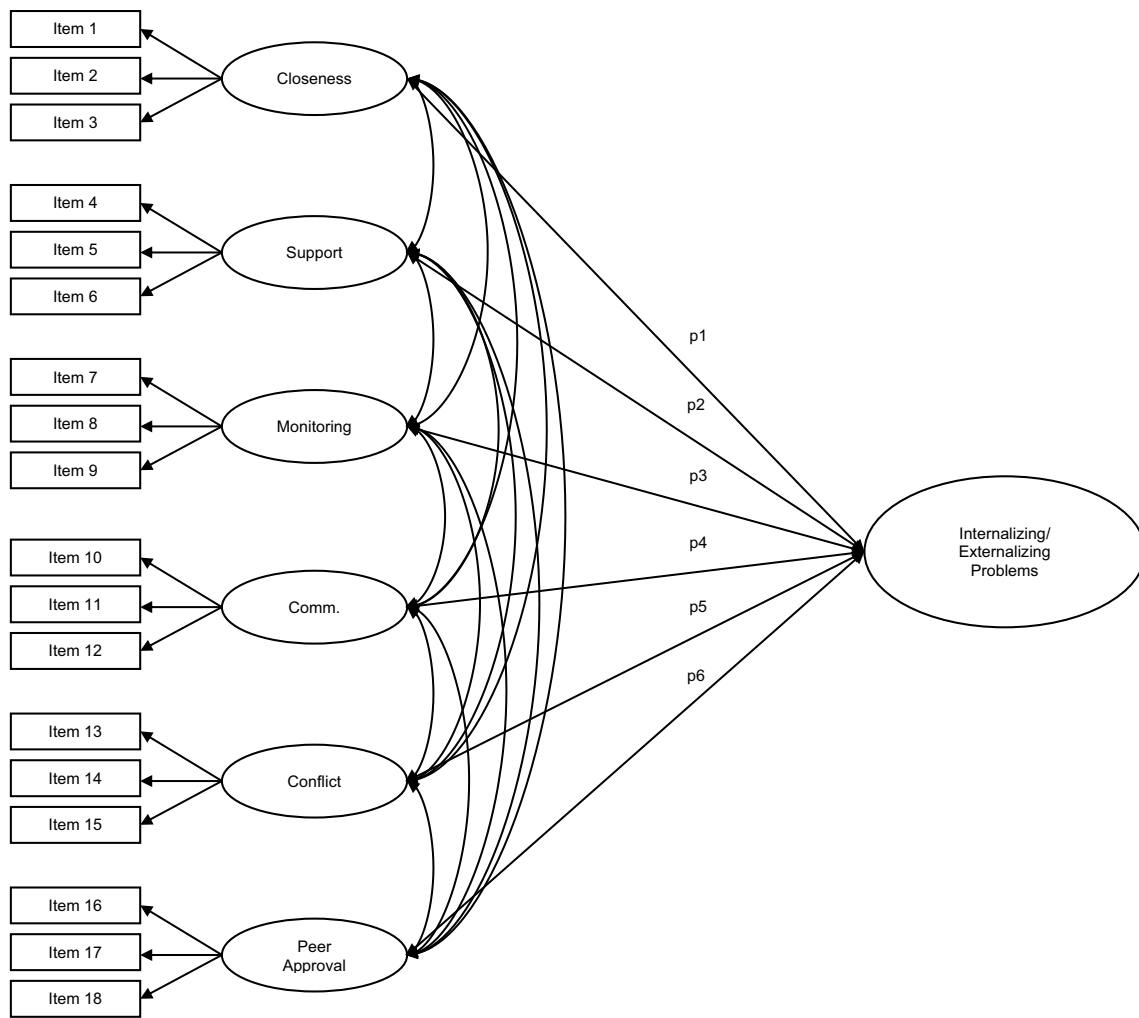


Fig. 2 The structural model with AFP-SF factors predicting externalizing/Internalizing behaviors. The path labels p1 through p6 indicate the path coefficients that were held invariant across the cultures for both dependent variables. The indicators for dependent variable not

shown: Internalizing behaviors (4 manifest variables), externalizing behaviors (10 items). Not shown here are control variables (sex, age, family structure, SES), which were covaried with the factors and predicted the dependent variable

significant improved fit was also found for the paternal scale, $\Delta\chi^2(1310) = 4877.677, p < .001$, with the following fit of the 18-item version: $\chi^2(1200) = 3279.846, CFI = .967, RMSEA = .039, 90\% RMSEA CI [.038, .041]$. For this reason, subsequent analyses focused on the 18-item AFP-SF.

Next, metric invariance was imposed on both maternal and paternal AFP-SF to evaluate whether the loadings of items on respective factors varied substantially across the 10 countries. Invariance (meaning no significant differences in factor loadings between the countries on either maternal or paternal items) was supported for the maternal AFP-SF, $\Delta\chi^2(108) = 678.949, p < .001, \Delta CFI = -.010, \Delta RMSEA = -.003$ as well as for the paternal AFP-SF, $\Delta\chi^2(108) = 543.317, p < .001, \Delta CFI = -.005, \Delta RMSEA = -.002$.

CFAs and Invariance Tests: Internalizing and Externalizing Problems

Confirmatory factor analyses for the outcome variables were also tested. The Internalizing behavior configural model was specified with the four subscales as indicators of internalizing problems. The data fit this model well, $\chi^2(10) = 80.178, CFI = .994, RMSEA = .074, 90\% RMSEA CI [.060, .090]$. Fit of the one-factor externalizing problems configural model was also good, $\chi^2(310) = 1155.824, CFI = .959, RMSEA = .047, 90\% RMSEA CI [.044, .049]$. Metric invariance model tests showed slightly poorer fit for internalizing problems ($\Delta\chi^2(27) = 185.095, p < .001, \Delta CFI = .013, \Delta RMSEA = .004$) and externalizing problems ($\Delta\chi^2(81) = 508.375, p < .001, \Delta CFI = -.023,$

Table 4 Fit indices for the estimated models

	Type	χ^2	df	p	CFI	RMSEA	90% RMSEA CI	$\Delta\chi^2$	Δdf	p	ΔCFI	$\Delta RMSEA$
AFP-SF maternal configural	CFA	3146.581	1200	< .001	.967	.036	[.034, .037]					
AFP-SF maternal metric	CFA	3825.530	1308	< .001	.957	.039	[.038, .040]	678.949	108	< .001	-.010	-.003
AFP-SF paternal configural	CFA	3279.846	1200	< .001	.972	.037	[.036, .039]					
AFP-SF paternal metric	CFA	3823.163	1308	< .001	.967	.039	[.038, .041]	543.317	108	< .001	-.005	-.002
Internalizing problems configural	CFA	80.178	10	< .001	.994	.074	[.060, .090]					
Internalizing problems metric	CFA	264.260	37	< .001	.981	.070	[.062, .078]	185.095	27	< .001	-.013	.004
Externalizing problems configural	CFA	1155.824	310	< .001	.959	.047	[.044, .049]					
Externalizing problems metric	CFA	1705.140	391	< .001	.936	.052	[.049, .054]	508.375	81	< .001	-.023	-.005
Maternal AFP-SF → Internalizing problems configural	Path	7615.459	2470	< .001	.939	.040	[.039, .041]					
Maternal AFP-SF → Internalizing problems metric	Path	7770.028	2524	< .001	.937	.040	[.039, .041]	154.569	54	< .001	-.002	< -.001
Paternal AFP-SF → Internalizing problems configural	Path	7448.694	2470	< .001	.951	.040	[.039, .041]					
Paternal AFP-SF → Internalizing problems metric	Path	7558.431	2524	< .001	.950	.040	[.039, .041]	109.737	54	< .001	-.001	< -.001
Maternal AFP-SF → Externalizing problems configural	path	10469.632	4090	< .001	.939	.035	[.034, .036]					
Maternal AFP-SF → Externalizing problems metric	Path	10655.950	4144	< .001	.938	.035	[.034, .036]	178.810	54	< .001	-.001	< -.001
Paternal AFP-SF → Externalizing problems configural	Path	10585.479	4090	< .001	.947	.035	[.034, .036]					
Paternal AFP-SF → Externalizing problems metric	Path	10752.830	4144	< .001	.946	.035	[.035, .036]	165.146	54	< .001	-.001	< -.001

$\Delta RMSEA = -.005$), thus, there was acceptable evidence of invariance for internalizing problems, and both acceptable and unacceptable decrements in model fit for externalizing problems [54–56]. A decision was made that the evidence was sufficient to proceed with subsequent model tests.

Descriptive Statistics and Correlations: Scales

Table 2 provides information about means, standard deviations, and Cronbach alphas for maternal and paternal subscales of the AFP-SF by country. All subscales had adequate or good reliability. Table 3 includes bivariate correlations among the main study variables based on the total sample. Conflict was negatively correlated with the other subscales; the remaining five subscales were positively correlated. Associations between both maternal and paternal parenting processes and measures of internalizing and externalizing problems were generally consistent with expectations; some important sex differences also emerged, where sex was weakly associated with internalizing measures (not with anxiety, more strongly with low self-esteem), and with externalizing problems.

Predictive Model Tests

In the next step, the 6-factor AFP-SF model was extended to a structural model where the six parenting factors served as a predictor of an outcome variable (internalizing/externalizing

problems), resulting in a total of four models (maternal/paternal AFP predicting internalizing/externalizing problems). These models (see Fig. 2, Table 4) also included control variables (age, sex, family structure, SES) as covariates of the six factors as well as predictors of the dependent variable. In the first step, these models were freely estimated (i.e., with no equality constraints). In the second step, the six predictive paths (p1 to p6, see Fig. 2) from AFP-SF factors to a dependent variable were constrained to equality across countries and this nested model was compared to a model with freely varying paths. The results showed culturally invariant relationships of the six AFP-SF subscales and both dependent variables—internalizing and externalizing problems. Although the $\Delta\chi^2$ was statistically significant (most likely due to sample size), alternative fit indices provided evidence of minimal differences between groups. For maternal AFP predicting internalizing problems, the model change was $\Delta\chi^2(54) = 154.569$, $p < .001$, $\Delta CFI = -.002$, $\Delta RMSEA = < -.001$; for paternal AFP, the change was $\Delta\chi^2(54) = 109.737$, $p < .001$, $\Delta CFI = -.001$, $\Delta RMSEA = < -.001$. For maternal AFP predicting externalizing problems, the model change was $\Delta\chi^2(54) = 178.81$, $p < .001$, $\Delta CFI = -.001$, $\Delta RMSEA = < -.001$; for paternal AFP, the change was $\Delta\chi^2(54) = 165.146$, $p < .001$, $\Delta CFI = -.001$, $\Delta RMSEA = < -.001$.

Finally, as the previous results attest to the measurement invariance of both maternal and paternal AFP-SF structure, the constrained model was used to provide the path estimates

Table 5 Path estimates for maternal and paternal AFP predicting internalizing and externalizing problems

	Internalizing problems			Externalizing problems		
	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>
Maternal AFP-SF						
Closeness	– 0.140	0.020	< .001	– 0.043	0.037	.236
Support	– 0.155	0.021	< .001	– 0.108	0.034	.002
Monitoring	0.026	0.008	.002	– 0.216	0.015	< .001
Communication	– 0.023	0.011	.043	0.078	0.018	< .001
Conflict	0.015	0.012	.206	0.148	0.020	< .001
Peer approval	– 0.040	0.010	< .001	– 0.048	0.016	.004
Maternal AFP ΔR^2	14–27%			9–20%		
Total model R^2	20–29%			16–33%		
Paternal AFP-SF						
Closeness	– 0.097	0.014	< .001	– 0.110	0.024	< .001
Support	– 0.143	0.017	< .001	– 0.156	0.027	< .001
Monitoring	0.007	0.006	.292	– 0.080	0.010	< .001
Communication	– 0.027	0.010	.010	0.101	0.015	< .001
Conflict	0.004	0.011	.707	0.064	0.017	< .001
Peer approval	– 0.022	0.008	.009	– 0.024	0.013	.067
Paternal AFP ΔR^2	11–22%			4–14%		
Total model R^2	18–25%			13–30%		

These estimates are from the full models with sex, age, family structure, and SES included as covariates of the AFP subscales and predictors of the dependent variables

across the countries, separately for mothers and fathers. Table 5 presents path estimates for each subscale as well as the range of explained variance in the dependent variable (R^2), which differs by country because of differing effects of control variables as well as varying loadings of latent factor indicators. For internalizing problems, both maternal and paternal closeness (mother: $B = -.140$, father: $B = -.097$, both $p < .001$), support (mother: $B = -.155$, father: $B = -.143$, both $p < .001$), communication (mother: $B = -.023$, $p = .043$, father: $B = -.027$, $p = .010$), and peer approval (mother: $B = -.040$, $p < .001$, father: $B = -.022$, $p = .009$) were significant negative predictors. Further, maternal monitoring ($B = .026$, $p = .002$) was a significant positive predictor. The maternal AFP explained an additional 14% to 27% of variance in internalizing problems while paternal AFP explained an additional 11% to 22% of the total variance explained.

The results showed that for externalizing problems (deviance), both maternal and paternal monitoring (mother: $B = -.216$, father: $B = -.080$, both $p < .001$), communication (mother: $B = .078$, father: $B = .101$, both $p < .001$), support, (mother: $B = -.108$, $p = .002$, father: $B = -.156$, $p < .001$), and conflict (mother: $B = .148$, father: $B = .064$, both $p < .001$) were significant predictors in the expected direction (except for communication). Interestingly, communication was positively related to deviance, suggesting that more communication with mother/father was related to more deviant behavior. Furthermore, father but not mother closeness was also a significant predictor of deviance ($B = -.110$, $p < .001$). Maternal but not paternal peer approval was negatively related to deviance ($B = -.048$, $p = .004$). The maternal AFP itself explained from 9 to 20% of variance in externalizing problems, while paternal AFP-SF explained additional 4% to 14%.

Discussion

The present study tested the significance of maternal and paternal parenting processes and key indicators of adolescent adjustment across ten different cultures. In effect, it pitted a more traditional anthropological view of idiosyncratic differences [59] against a more panoptical view of human development [1, 2] that proposes great similarities across cultures. Based on previous research, it was hypothesized that the study would provide evidence of highly similar measurement representation of the six-dimensional maternal and paternal parenting measure across ten cultures (China, Czech Republic, Hungary, the Netherlands, Slovenia, Spain, Switzerland, Taiwan, Turkey, and the United States) as well as great similarity in the links between maternal and paternal parenting processes and measures of internalizing and externalizing problems.

Findings provided evidence that measures of both perceived maternal and paternal parenting dimensions were in

fact invariant across the ten different developmental contexts, consistent with the literature [60–62]. These findings support some measure of generalizability of these tested parenting characteristics, and thus, of the broad salience and applicability of Steinberg and Silk's conceptual framework. These findings support a shared conceptualization and measurement of maternal and paternal parenting processes across the ten cultures tested, one certainly limited by the fact that the samples were not representative in each culture, but also limited by potentially unmeasured aspects and processes of parenting. This observed commonality in the operationalization and measurement of both maternal and paternal parenting processes may in fact be based on shared biological underpinnings and heritage that might be responsible for the universal nature of developmental and psychological processes [63], effectively providing evidence of the fact that these parenting processes are simply important across cultures; at the same time, this may also be related to some extent to globalization forces that in effect consolidate adolescent life experiences by reducing or even eliminating cultural boundaries. Globalization effects are facilitated by shared milieus of social media, music, and films, for instance. There is some empirical support for this latter explanation, what amounts to the horizontal transmission of a global youth culture affecting adolescent development and behavior [59, 64]. However, the power of globalization, particularly related to how it impacts the behaviors by parents towards their children and adolescents, and thus, its perceived uniform effect, might be unduly overstated [65]; in fact, it is quite likely that what is observed here predates an era of globalization.

The present findings document consistent associations of maternal and paternal perceived parenting dimensions with measures of internalizing and externalizing problems [66, 67]. Consistent with previous research [23–25], findings also provided evidence that maternal and paternal closeness, support, communication, and peer approval were negatively associated with internalizing symptoms. Unexpectedly, maternal monitoring was positively associated with internalizing behaviors. It is possible that this latter finding was observed as monitoring may include elements or imply psychological control, thus leading to a positive association with internalizing problems. There has been conflicting neuroscientific evidence in this regard. One study [68], for example, has found that psychological control, but not emotional connection, is linked to altered brain and behavioral responses to emotional conflict, and therefore, the development of internalizing problems. Other work [69] has shown that maternal warmth and support, not behavioral control, are implicated in maladaptive brain responses. There are still questions to be answered about the role of specific parenting dimensions or characteristics and how they influence specific aspects of adolescent development and adjustment. It is also likely that

some of these relationships may not simply be linear, that for instance, there exists an optimal level of monitoring and control, and once this optimal threshold is surpassed, it leads to more deleterious consequences in terms of emotional and mental health. Future work focusing on these nuanced differences will likely provide a greater understanding and better insight into the precise mechanism(s) at play.

Both maternal and paternal monitoring as well as communication, support, and conflict were significantly associated with deviance, each in the expected direction except for communication. More perceived maternal and paternal communication was associated with slight increases in deviance. Although this finding was unexpected, it is not entirely inconsistent with some previous work. In particular, studies including parental communication along with other parent-adolescent relationship variables (e.g., monitoring) in predictive models, have found parental communication to be entirely unrelated to adolescent deviance (e.g., among ethnic minority youths [70]), notwithstanding significant negative bivariate associations between communication and deviance. It is also possible that the stronger the parent-adolescent communication, the higher an adolescent's openness to new experiences, which in turn may expose youth to situations associated with exposure to greater deviance. Or alternatively, youth who report better parental communication are, in general, more open with their behavioral reports, particularly with regard to deviance. Furthermore, paternal, but not maternal closeness, was also significantly and negatively associated with deviance. However, only maternal peer approval had a significant influence on deviance, above and beyond other parenting measures, which is consistent with previous cross-cultural work [7] and highlights potential differences between effects of maternal and paternal parenting.

Limitations

The current study is certainly not without limitations. They include the sole reliance on adolescent reports of their perceptions of parenting processes, the fact that the study is based on convenience samples as proxies of cultural contexts, hence limiting generalizability, and that only cross-sectional data were collected. It is often questioned whether adolescent self-reports can provide accurate descriptions of their own experiences [71], particularly when such experiences involve other individuals, in this case, parents [72, 73]. Furthermore, relying on adolescents' reports for both parenting and externalizing and internalizing behaviors presents potential for common method variance bias [74]. Certainly, incorporating parents' perceptions of the given parent-adolescent relationship dimensions might better approximate the examined parenting processes and their effects. However, research also has provided ample evidence that an

adolescent's own perceptions are most valuable, particularly related to being able to understand their own adjustment [72, 75]. Related to measurement, metric invariance tests for deviance provided some mixed evidence; it is important to acknowledge that this might have impacted study findings, where observed links between parenting processes and deviance were attenuated. Nevertheless, study findings showed that these latter links were invariant across the cultures tested, despite this issue.

Although the total sample was very large and diverse in that it included adolescents from 10 different countries, each country sample certainly was a mere approximation of the whole country rather than representative of it. Relatedly, another limitation is that vast majority of adolescents within each country lived in a two-parent family, which is higher than the population estimates for majority of these countries, and, as such, makes the samples less representative. This also means that because the data were school-based, thus excluding youth who were not attending school, and from mostly two-parent families, study participants were likely from more affluent families, and may have also been less likely to be at risk for either internalizing or externalizing problems, thus, potentially systematically biasing study findings. The same can be said about the diversity of the samples, limited to the countries that were included, as well as to the medium-sized cities where they were recruited. This did not include smaller cities or rural areas or very large cities, even though some of the countries simply do not have any or many such settings (e.g., Czech Republic, Hungary, Slovenia, or Switzerland). Thus, despite being quite varied, they were mostly developed countries, and thus, it is not clear how and whether study findings have application for youth from more traditional cultures and societies. Related to the use of cross-sectional data, clearly no conclusion can be reached about the direction of effects or causality. It is also important to note that due to high levels of statistical power, even modest relationships reached statistical significance. By extension, the total amount of variance explained by parenting processes in measures of adolescent adjustment was also relatively modest. Finally, conceptually, the AFP-SF included six operationalizations of the three main parenting dimensions, but at the same time, they do not represent all possible parenting constructs.

Summary

The present cross-cultural comparative study represents a unique effort which incrementally contributes to the existing literature on the measurement and operationalization of perceived parent-adolescent relationships as well as the relationships between perceived maternal and paternal parenting and measures of internalizing and externalizing problems

among youth. Its unique contributions include (1) testing and establishing an 18-item, six dimension maternal and paternal perceived parenting measure (18 items each) across ten cultures; (2) simultaneously testing the links between parenting measures of autonomy, harmony, and conflict dimensions, and measures of both internalizing and externalizing problems in youth from ten cultures, and finding that these links were invariant; and (3) testing the salience of both perceived maternal and paternal parenting dimensions for adolescent internalizing and externalizing problems across ten cultures, and finding that they were invariant. It is important to note

that the magnitude of the observed parenting effects on adolescent adjustment measures was rather modest, consistent with previous work. An important implication of this work and its findings for policy and prevention and intervention work is that programmatic elements targeting mental health or behavioral problems among youth, can and should share common core features that should be effective across different cultural developmental contexts.

Appendix A

	Population	Urbanization % of total population	Life expectancy years	Primary religion	Literacy age 15+ can read and write	Poverty (living below the line)
China	1,379,302,771	57.9%	75.7	Folk Religion 21.9%	96.4%	3.3%
Czech Republic	10,674,723	73%	78.8	Roman Catholic 10.4%	NA	9.7%
Japan	126,451,398	94.3%	85.3	Shintoism 79.2%	NA	16.1%
Hungary	9,850,845	72.1%	76.1	Roman Catholic 37.2%	99.1%	14.9%
Netherlands	17,084,719	91.5%	81.4	Roman Catholic 28%	NA	8.8%
Slovenia	1,972,126	49.6%	78.3	Catholic 57.8%	99.7%	14.3%
Spain	48,958,159	80%	81.8	Roman Catholic 67.8%	98.3%	21.1%
Switzerland	8,236,303	74.1%	82.6	Roman Catholic 37.3%	NA	6.6%
Taiwan	23,508,428	NA	80.2	Buddhist 35.3%	98.5%	1.5%
Turkey	80,845,215	74.4%	75	Muslim (mostly Sunni) 99.8%	95.6%	21.9%
USA	326,625,791	82%	80	Protestant 46.5%	NA	15.1%

NA not available; CIA (2017)

Appendix B

Questions are prefaced by: “*We would like to find out more about your relationship with your mother/stepmother or female caretaker (your father/stepfather or male caretaker)*”

Adolescent Family Process Measure, Short-Form (AFP-SF)

Closeness

1. My mother gives me the right amount of affection (2)
2. My mother is usually proud of me when I finish something at which I’ve worked hard (4)
3. My mother trusts me (5)

Support

4. My mother sometimes puts me down in front of other people (7)
5. Sometimes my mother won’t listen to me or my opinions (8)
6. My mother seems to wish I were a different type of person (10)

Monitoring

7. In my free time away from home, my mother knows who I’m with and where I am (12)
8. My mother wants me to tell her where I am if I don’t come home right after school (13)
9. When I am not at home, my mother knows my whereabouts (14)

Communication

10. How often do you talk to your mother about other things that are important to you (18)?
11. How often do you talk to your mother about major personal decisions (20)?
12. How often do you talk with your mother about your job plans for the future (25)?

Conflict

13. How often do you have disagreements or arguments with your mother (21)?
14. How often do you purposely not talk to your mother because you are mad at her (22)?
15. How often do you get angry at your mother (23)?

Peer approval

16. How often does your mother approve of your friends (28)?
17. How often does your mother approve of your boyfriend/girlfriend (29)?
18. How often does your mother like when you go out with your friends (30)?

*Notes. The above items are identical for fathers. The word “father” is exchanged for “mother.” Item numbers in parentheses for each item correspond to original 30 items assessed by Vazsonyi et al. (2003).

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Declarations

Ethical Standards All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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