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Typologies of coparenting in Chinese families and adolescents' adjustment

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Abstract

The significance of coparenting has been demonstrated for a variety of adolescents' adjustment outcomes. The current study examined the associations between coparenting patterns and adolescents' adjustment by adopting a person-oriented perspective. The Coparenting Relationship Scale was used to investigate both fathers' and mothers' perceptions of coparenting in 1707 intact Chinese families. Adolescents ($M_{age} = 11.04$) reported their emotional (subjective well-being, loneliness), behavioral (pathological gaming, aggression), and academic adjustment (attitudes toward learning, academic performance) through a series of questionnaires. Three distinct coparenting typologies were identified using latent profile analysis: cooperative coparenting, conflictual coparenting, and mixed coparenting. Within the three typologies, gender differences between parents in coparenting dimensions also emerged. Adolescents in cooperative coparenting families reported the most positive adjustment outcomes, whereas those in mixed coparenting families reported the most negative. These findings provided valuable insights into how coparenting characteristics may relate to adolescents' outcomes. Implications for research and practice were discussed.

Keyword Coparenting · Chinese families · Adolescent adjustment · Latent profile analysis

Coparenting is defined as interactions between the two parental figures to ensure the well-being of their children (Margolin et al., 2001). Unlike parenting that indicates vertical interplay between parent and child, coparenting refers to horizontal dynamics between the two parents, including mutual support, endorsement, or conflicts in parenting roles (Feinberg, 2003). Coparenting has received growing research attention over recent years. Numerous studies showed that cooperative coparenting is associated with more secure parent–child attachment, fewer problematic behaviors, and enhanced academic performance (e.g., Cabrera et al., 2012; Riina et al., 2020; Zemp et al., 2018).

Although the associations between coparenting and adolescent adjustment are well-established (for a review, Teubert & Pinquart, 2010a), there is still uncertainty regarding these associations. Coparenting is a multidimensional construct with positive (i.e., support) and negative (i.e., conflict) dimensions. The traditional variable-oriented approach to the study may ignore the interrelated nature of different aspects of coparenting (Perez-Brena et al., 2015). Moreover, grounded on Family Systems Theory, family members are interdependent, in which individual perceptions may uniquely contribute to the functioning of family subsystems (Cox & Paley, 2003; Minuchin, 1974). In this sense, fathers and mothers may have discrepant views of how coparenting functions in the family (Teubert & Pinquart, 2010b). However, most studies focused on maternal roles or average and observational data (e.g., Davies et al., 2004; Mallette et al., 2019). To fill these gaps, the current study utilized the person-centered analysis to identify typologies of coparenting based on mother- and father-report of different dimensions of coparenting and examined the extent to which adolescents' adjustment differs in different coparenting typologies in Chinese families.

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Coparenting dimensions

Coparenting has been conceptualized as a multidimensional construct (Feinberg, 2003; Teubert & Pinquart, 2010a). During the past four decades, many researchers have developed frameworks of coparenting (e.g., Ahrons, 1981; Feinberg, 2003; McHale, 1997; Stright & Bales, 2003). Ahrons (1981) and Stright and Bales (2003) defined coparenting as positive and negative counterparts. Margolin et al. (2001) proposed a three-factor model of coparenting: cooperation, conflict, and triangulation. McHale's coparenting model included four domains: family integrity, disparagement, conflict, and reprimand (McHale, 1997). In the ecological model of coparenting, Feinberg noted that coparenting included four domains: childrearing agreement, coparental support/undermining, division of labor, and joint management of family dynamics (Feinberg, 2003).

Through theoretical reviews and empirical studies on coparenting, cooperation, conflict, and childrearing agreement were three dimensions that have received much attention from researchers. Cooperation refers to positive interactions between parents, such as parents' mutual support, respect for their partner's parenting role, and closeness that coparenting may enhance the intimacy of the couple's relationship. Accordingly, cooperation is similar to the cooperation dimension of Margolin et al. (2001), coparental support in Feinberg's (2003) model, or support, closeness, endorse partner's parenting in Feinberg et al.'s (2012) seven domains coparenting measurement model. Conflict can be defined as negative interactions such as criticizing, disparaging, or blaming their partner regarding their parenting. This negative counterpart of coparenting may combine Margolin et al.'s (2001) coparenting conflict and Feinberg's (2003) coparenting undermining. The additional vital counterpart of coparenting is the childrearing agreement. Childrearing agreement refers to parents' agreeing on parenting values and practices (Feinberg et al., 2007). Parents may encounter more overt or covert conflicts with less consensus in expectations, childrearing beliefs, or actual parenting behaviors. Unlike the general positive and negative counterparts of coparenting, low levels of childrearing agreement might not definitely lead negative outcomes (Feinberg, 2003). For example, disagreement is inevitable in many situations, and "agree to disagree" might help maintain a positive coparenting relationship.

Though different aspects of coparenting are interrelated, it should not be assumed that the presence of a high level of cooperation and childrearing agreements indicated less conflict in coparenting. Indeed, researchers have noted that the positive (e.g., cooperation, support) and negative (e.g., conflict, undermining) counterparts of coparenting are not always the opposite sides but have their distinct characteristics and different functions in family dynamics (Cowan & McHale, 1996). For example, "disconnected families" may exist in which both positive and negative counterparts of coparenting score relatively low (McHale, 1997). A study by Riina and Feinberg (2018) also found coparenting support and conflict differ in their stability across early adolescence. Therefore, given the multidimensional nature of coparenting and the interplay of different dimensions of coparenting in a particular family, it is vital to understand coparenting characteristics by examining different patterns of coparenting are identified in certain families. In contrast to variable-oriented approaches, person-oriented analytic strategies classify individuals into homogeneous subgroups characterized by a similar pattern of associations among variables (Howard & Hoffman, 2018), thus making it possible to look deep into the typologies of coparenting.

Typologies of coparenting in Chinese families

Several studies have identified some patterns of coparenting in two-parent intact families based on different conceptualizations of coparenting, different samples across cultures, and different analytic methods. There are two common typologies of coparenting that were identified in previous studies. The first is the cooperative type, also named cohesive, supportive, or high-functioning families (Davies et al., 2004; Mallette et al., 2019; McHale, 1997; McHale et al., 2000; Teubert & Pinquart, 2010b; Zimmermann et al., 2020). The cooperative type of family is characterized by the high quality of coparenting functioning, with high levels of mutual support, agreement in childrearing issues, respect for parent roles, and less conflict or undermining. By contrast, the second typical coparenting pattern is the conflictual type of oppositional, distressed families (Mallette et al., 2019; McHale, 1997; McHale et al., 2000; Zimmermann et al., 2020). Parents in this group manifest high levels of conflict and undermining while showing fewer positive interactions of coparenting.

In addition to the two common coparenting patterns in line with our general knowledge, some studies also identified other types. These studies generally focused on the positive and negative counterparts of coparenting and found: the third type, mixed or compromising families, in which had both high levels of cooperation and conflict (Mallette et al., 2019; McHale, 1997; Repond et al., 2019; Zimmermann et al., 2020). Moreover, the disengaged or disconnected type, in which parents involve less in the coparenting process in the family, with both levels of cooperation and conflict (Davies et al., 2004; Mallette et al., 2019; McHale, 1997; McHale et al., 2002).

The above-mentioned four coparenting patterns may also emerge in Chinese families, though they might with unique characteristics in Chinese contexts. Firstly, under Chinese traditional cultural values, the ultimate goal of marriage is to execute the cultural assignment of continuation of the vertical lineage of family or clan (Lu & Lin, 1998). In this sense, the parental role may be more emphasized than the spousal role in Chinese families (Chang et al., 2004; Liu & Wu, 2018). Some other evidence showed that Chinese parents might be more concerned with their children, such as having more "child-centered" beliefs (Ng et al., 2014). Chinese parents may be actively involved in parenting and the coparenting process to achieve specific parenting goals. In this sense, the disengaged coparenting pattern may not be typical or prominent in Chinese families. Secondly, the issues of childrearing agreement may have unique characteristics in Chinese parents' coparenting functioning. As traditional Chinese culture values "strict father, warm mother," fathers were expected to be aloof and distant to children, with different parenting practices from mothers (Ho, 1993; Wilson, 1974). Even in modern Chinese families, there is still a prevalence of "Red Face and White Face" (*Hong Lian* and *Bai Lian*) belief in how parents may cooperate in parenting. Under this belief, one parent should be strict to better discipline children, while the other parent should give warmth to compass empathy for children (Wang et al., 2018). Otherwise, the parents may not control their children (two parents congruently strict may be too harsh for children, while two parents congruently warm may spill children). Therefore, the issues of childrearing agreement may bring different meanings in Chinese families compared with the western contexts. The current study includes childrearing agreement as an essential dimension in interpreting the typologies of coparenting in Chinese families.

According to Family Systems Theory, individuals within the family system are interdependent (Cox & Paley, 2003), making it possible that perceptions of coparenting may be discrepant between parents. However, most of the studies mainly utilized results from mothers (e.g., Mallette et al., 2019), average scores or observational data (e.g., Davies et al., 2004; McHale et al., 2000; Repond et al., 2019), which limit the possibility to capture the discrepant views of coparenting when considering the coparenting patterns. Indeed, there is preliminary evidence that the discrepancy of coparenting perceptions may characterize coparenting patterns. For example, by using coparenting perceptions of adolescents and both parents, Teubert and Pinquart (2010b) identified four typologies of coparenting: high functioning, congruent-negative, positive-discrepant, and negative-discrepant families. In Zimmermann et al.'s (2020) study, they found that in more than half of families, parents' and adolescents' reports of coparenting were in the same identified coparenting group, thus with discrepancy of the patterns from different informants. Portes et al. (2020) also found a discrepancy in coparenting perceptions of fathers and mothers regarding several coparenting aspects. Therefore, in the current study, dyadic data from both father and mother perceptions of coparenting were utilized. We hypothesized that different aspects of coparenting and the discrepancy of coparenting perceptions from two parents might interact in the typologies of coparenting.

Typologies of coparenting and adolescents' adjustment

Previous studies utilized a variable-oriented approach to examine the extent of different aspects of coparenting (e.g., cooperation, conflict, and childrearing agreement) or coparenting relationship as a whole are related to adolescents' adjustment. Findings were consistent that cooperative coparenting and a high level of childrearing agreement were associated with children's less internalizing and externalizing problems (e.g., Riina et al., 2020), while conflictual coparenting brought adverse outcomes of adolescents (e.g., Zemp et al., 2018). However, previous studies showed mixed findings regarding the associations between coparenting typologies and adolescent adjustment with the person-oriented perspective. Theoretically, a cooperative or cohesive coparenting family is a protective factor for adolescents' adjustment, with fewer internalizing and externalizing behaviors (Feinberg, 2003; Teubert & Pinquart, 2010a). For empirical support, several studies found that in cooperative coparenting families, adolescents had lower emotional symptoms and fewer internalizing and externalizing problems (Davies et al., 2004; Teubert & Pinquart, 2010b). However, in Repond et al.'s (2019) study of stepfamilies, there were nonsignificant discrimination effects of coparenting patterns on adolescents' emotional, behavioral, and peer problems. Lee et al.'s (2020) study also found that children's emotional regulation ability had no significant differences regardless of equal-division of high coparenting quality or mother taking full charge with low coparenting quality.

For disengaged families and mixed families, the evidence of if they were associated with adolescents' adjustment was scarce, or the effects were limited (Davies et al., 2004; Repond et al., 2019). As for whether the "Red Face and White Face" may benefit adolescents in China, Wang et al. (2018) found that this kind of behavior might function similarly with coparenting conflict that was positively correlated to children's emotional and conduct problems at the variable level. However, they also found that "Red Face and White Face" behaviors positively correlated to children's prosocial behaviors, making it complex to interpret. The current study extended the previous research in examining how different types of coparenting might differ in adolescents' adjustment in the Chinese cultural contexts.

As for whether the discrepancy of coparenting perceptions may be related to adolescents' adjustment, Teubert and Pinquart found that for adolescents' emotional symptoms, the negative-discrepant group scored the highest, while the high functioning (comparable to cooperative or supportive) group scored the lowest. No significant differences were found in congruent-negative and positive-discrepant families (Teubert & Pinquart, 2010b). Taken together, there are inconsistent findings in the extent of how typologies of coparenting may relate to adolescents' adjustment. These inconsistent results may depend on different samples or indicators of adolescents' outcomes. To get a comprehensive view of this problem, the current study further examined the association of coparenting patterns and various indicators of adolescents' adjustment (i.e., emotional, behavioral, and academic) in Chinese families.

The current study

The primary goals of the current study were twofold. Research Question 1 was to examine whether coparenting typologies of Chinese families could be identified from coparenting characteristics reported by both fathers and mothers. Research Question 2 was to explore the associations between typologies of coparenting and adolescents' adjustment (i.e., emotional, behavioral, and academic adjustment).

Method

Participants

Participants in this study were approached using a cluster sampling method in 11 primary schools in two cities in China. A total of 2,064 families participated. Considering the purpose of the study, we applied selection criteria based on demographic characteristics to get the final sample: (a) parents were legally married and were biological parents of their children (23 families in which adolescents did not live with their biological parents were excluded), (b) parents lived together with their children at the time of our study (in 325 families, adolescents lived with only father or mother), (c) data were available for either mother or father from one family (in 9 families, data from neither father nor mother were available). The selecting procedure resulted in a final sample of 1707 families, including parents of 826 boys (48.4%) and 881 girls (51.6%). 1,015 families (59.5%) had only one child, while 692 families (40.5%) had more than one child. At the time of the study, the target adolescents were between the age of 10 and 13 (M_{age} = 11.04). In terms of the parent's educational level, 64.3% of fathers and 59.1% of mothers had a bachelor's degree or higher.

Procedure

The institutional review board of the study's home institution approved both the study and the procedure. With the consent of the school administrators and teachers, researchers presented the study to students in classes and parents through parent meetings. Consent forms were given to the adolescents and their parents separately. All of the participants were informed about the purpose of the study. After obtaining approval, the students completed questionnaires in class units with a trained experimenter during school visits. Parents completed questionnaires at home separately and were brought back to the school by students. To ensure the confidentiality of the data, questionnaires were sealed in an envelope and were collected by researchers in classes. If there were more than one child in the family, only issues of coparenting toward the target child were measured. The procedures in the two provinces were generally the same.

Measures

Coparenting Coparenting was assessed using the Chinese adaption of the Coparenting Relationship Scale (Feinberg et al., 2012; Ju et al., 2022). The Chinese version comprising 27 items that covered six dimensions of coparenting, including three items for the Coparenting Agreement (e.g., "My partner and I had the same goals for our children"), three items for the Coparenting Closeness (e.g., "My relationship with my partner is stronger now than before we had a child"), five items for the Exposure to Conflict (e.g., "I argue with my partner about my child, in the child's presence"), six items for the Coparenting Support (e.g., "When I'm at my wits end as a parent, partner gives me extra support I need"), six items for the Coparenting Undermining (e.g., "My partner sometimes makes jokes or sarcastic comments about the way I am as a parent"), and four items for the Endorsement of Partner's Parenting (e.g., "I believe my partner is a good parent"). Responses were given on a 7-point scale (0 = not true of us to 6 = very true of us). We calculated the mean score of each dimension. To get a sum score of the overall coparenting relationship, the mean score was calculated after recoding the reverse-meaning items. In this study, the Cronbach's αs for mothers and fathers were between 0.70 and 0.94.

Subjective well-being Adolescents' subjective well-being was assessed using the 9-item Subjective Well-being Scale from the National Children's Study of China (Dong & Lin, 2011), adapted from Campbell (1976). Responses were given on a 7-point scale divided into two dimensions: overall life satisfaction was measured by one item (e.g., "In general, are you satisfied with your life over the past six months?"), and a question asked about general affect with eight pairs

of feelings as responses (e.g., "How do you feel about your life over the past six months; 1 = boring, 7 = interesting"). Overall life satisfaction was calculated as a separate dimension with a weight of 1.1, and 8 items of general affect were calculated as a dimensional mean score with a weight of 1. The total scores on this scale ranged from 2.1 to 14.7, higher scores indicated higher levels of well-being. The Chinese version of the Subjective Well-being Scale showed good reliability and validity in previous studies (Ye et al., 2021). In the present sample, Cronbach's α was 0.92.

Loneliness The loneliness was assessed using the Chinese version of the 16-item Children's Loneliness Scale from the National Children's Study of China (Dong & Lin, 2011), which was adapted from Asher et al. (1984). Responses were given on a 4-point scale, ranging from 1 (Not true at all) to 4 (always true). We reversed the scores of negative items and produced a total score of loneliness. Example questions included, "I have nobody to talk to". Higher scores indicated higher levels of loneliness. The Chinese version of the Children's Loneliness Scale showed good reliability and validity in previous studies (Liu et al., 2015). In the present sample, Cronbach's α was 0.89.

Pathological gaming The pathological gaming was assessed using the 11-item pathological-gaming scale from Gentile (2009). Example questions included, "Over time, have you been spending much more time thinking about playing video games, learning about video game playing, or planning the next opportunity to play?" Responses were given on a 3-point scale. Participants were allowed to respond "yes," ''no,'' or ''sometimes'' to each item. The total scores of all items were calculated, with higher scores indicating higher levels of pathological gaming. The Chinese version of the Pathological gaming questionnaire showed good reliability and validity in previous studies (Li et al., 2022). In the present sample, Cronbach's α was 0.85.

Aggression The aggression was assessed using the 10-item Aggression Behavior Questionnaire from the National Children's Study of China (Dong & Lin, 2011), which was adapted from the National Longitudinal Survey of Children and Youth of Canada (Statistics Canada, 2008). These ten items were divided into two dimensions, including body aggression (e.g., "I physically attack people.") and indirect aggression (e.g., "When I am mad at someone, I say bad things behind his/her back."). The participants indicated their responses using a 4-point scale, ranging from 1 to 4, representing "never" to "usually." The average score of all items was calculated, and higher scores indicated higher levels of aggressive behavior. The Chinese version of the Aggression Behavior Questionnaire showed good reliability and validity in previous studies (He et al., 2019). In the present sample, Cronbach's α was 0.86.

Attitudes toward learning Attitudes toward learning were assessed using the 4-item learning attitudes subscale of the School Attitudes and Learning Attitudes Scale from the National Children's Study of China (Dong & Lin, 2011), which was based on the School Liking and Avoidance Scale developed by Ladd (1990) and adapted by Qu et al. (2004). Attitudes toward learning referred to students' persistent internal response tendency to study, whether positive or negative (e.g., "I study very hard at school"). Responses were given on a 5-point scale, ranging from 1 (Not true at all) to 5 (always true). The average score of all items was calculated, and higher scores indicated more positive attitudes toward learning. The Chinese version of this questionnaire showed good reliability and validity in previous studies (Zou et al., 2007). In the present sample, Cronbach's α was 0.78.

Academic performance The academic performance was assessed using the self-reported scale with three items. Among these three items, students were asked about their relative performance in Chinese, mathematics, and English courses compared to other students in their class (e.g., "Compared with other students in the class, which of the following categories do you think your *Chinese* scores belong to"). Responses were given on a 5-point scale, ranging from 1 (worst) to 5 (best). Higher scores indicated better academic performance.

Demographic variables Demographic characteristics were measured using background information questionnaires. Parents' questionnaires included parental education level, gender, adolescent age, children number, and family co-residents. Adolescents' questionnaires included adolescents' gender and age.

Strategy of analyses

Epidata software was used to input and manage data. SPSS 22.0 and M*plus* 8.0 were used for data preprocessing and further analysis. Data were not missing completely at random (Little's missing completely at random test: $\chi^2 = 994.14$, $df = 713$, $p < 0.01$). Therefore, we used Full Information Maximum Likelihood to handle missing data (Muthén et al., 1987).

For Reasearch Question 1, Latent Profile Analysis (LPA) was utilized to examine whether different patterns could be identified from coparenting characteristics reported by both fathers and mothers in our samples (Muthén & Muthén, 2017). To determine the appropriate number of latent profiles, an increasing number of profile solutions from 1 to 4 were analyzed and compared using five fit indices: AIC (Akaike Information Criterion), BIC (Bayesian Information Criterion), aBIC (sample size adjusted Bayesian

Information Criterion), Entropy, and LMRT (Lo-Mendell-Rubin likelihood ratio Test). Generally, models with lower values on AIC, BIC, and aBIC were considered to display a better fit to the data (Nylund et al., 2007). Models having entropy statistics closer to 1 indicated higher certainty in classification, and generally, higher than 0.80 were acceptable (Collier & Leite, 2017). Moreover, the significant LMRT also indicated a better-fitted model (Lo et al., 2001). Additionally, all typologies had to cover at least 5% of the sample to make meaningful comparisons (Tein et al., 2013). After typologies were determined, one-way ANOVA was conducted to investigate whether identified typologies were significantly different in coparenting domains. All significant ANOVAs were followed by Tukey–Kramer post hoc tests to examine significant differences between typologies. For Research Question 2, one-way ANOVA tests were conducted (with Tukey–Kramer post hoc tests) to examine relationships between coparenting typologies and adolescents' adjustment outcomes.

Results

Preliminary analysis

Descriptive statistics for dimensions of coparenting, adolescents' adjustment, and correlations between these variables were shown in Table 1. Besides no significant correlation between adolescent aggression and father-reported coparenting support, adolescents' adjustment variables were all correlated with coparenting dimensions reported by both fathers and mothers.

The results of paired-sample *t*-tests showed significant differences between parents' gender in the dimensions of coparenting. Fathers reported lower levels of coparenting agreements than mothers ($t_{1609} = -3.71$, $p < 0.001$), while scored higher in other dimensions (*t*s ranging from 3.86 ~ 10.96, *p*s < 0.001).

Research question 1: latent profile analysis for typologies of coparenting

LPA models including 1 to 4 profiles were estimated separately using the six dimensions of coparenting reported by both fathers and mothers as indicators. To determine the best-fitting solution, the statistical-fit information was assessed (see Table 2).

The results showed that information-theoretic methods of model fit (AIC, BIC, aBIC) continued to decrease when comparing a 3-profile to a 4-profile solution, but the entropy value increased and then decreased, reaching a maximum of 0.897 at the 3-profile solution. In addition, the likelihood ratio statistical test (LMRT) of a 4-profile solution was not significant. According to the statistical criteria, the three-profile model was the best-fitted model.

Figure 1 presents a visual depiction of the resultant three-profile model. Father- and Mother-reported coparenting were generally consistent in all dimensions. Profiles 1, 2, and 3 were named *conflictual coparenting* ($n = 500$, 30% of the sample), *cooperative coparenting* ($n = 1057$, 61% of the sample), *mixed coparenting* ($n = 150$, 9% of the sample), respectively. To further characterize the three typologies of coparenting, one-way ANOVA tests were used to examine the differences across three typologies in the total score and six dimensions' mean scores of coparenting (see Table 3).

Profile 1, *conflictual coparenting* showed the lowest levels of the overall coparenting relationships in three profiles. Specifically, this profile indicated the lowest values on the total score and some positive dimensions (Endorsement of Partner's Parenting, Coparenting Closeness, and Coparenting Support), but relative to the moderate level of negative dimensions (Exposure to Conflict, Coparenting Undermining) and Coparenting Agreement. In addition, fathers reported higher levels of Coparenting Closeness ($t_{460} = 7.69$, $p < 0.001$), Coparenting Support ($t_{460} = 8.14$, $p < 0.001$), Coparenting Undermining ($t_{462} = 2.32$, $p < 0.05$), and Endorsement of Partner's Parenting ($t_{462} = 10.19$, $p < 0.001$) than mothers in this profile.

Profile 2, *cooperative coparenting* showed the highest values on the total score and positive dimensions of coparenting as well as the lowest values on negative dimensions of coparenting. In addition, fathers reported higher levels of Coparenting Closeness ($t_{1008} = 3.65$, $p < 0.001$), Exposure to Conflict ($t_{1000} = 2.38$, $p < 0.05$), Coparenting Undermining ($t_{1007} = 5.41$, $p < 0.001$), Endorsement of Partner's Parenting ($t_{1007} = 5.40$, $p < 0.001$), while lower levels of Coparenting Agreement ($t_{1007} = -2.54$, $p < 0.05$) than mothers.

Profile 3, *mixed coparenting* showed the middle levels of the overall coparenting relationships of three profiles. There were no significant differences from profile 2 in three positive dimensions (Endorsement of Partner's Parenting, Coparenting Closeness, and Coparenting Support), whereas it showed the highest values on Exposure to Conflict, Coparenting Undermining, and the lowest value on Coparenting Agreement. In this profile, fathers reported higher levels of Exposure to Conflict Coparenting ($t_{141} = 4.32$, $p < 0.001$), Coparenting Undermining ($t_{139} = 7.28$, $p < 0.001$), but lower levels of Coparenting Agreement ($t_{139} = -5.90$, $p < 0.001$) than mothers.

Research question 2: typologies of coparenting and adolescents' adjustment

As presented in Table 3, ANOVA tests with the coparenting typology serving as the factor and adolescents'

Table 1 Descriptive statistics and correlations between coparenting dimensions and adolescents' adjustment

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Coparenting Agreement-M	1																	
2. Coparenting Closeness-M	.16***	1																
3. Exposure to Conflict-M	-.42***	-.22***	1															
4. Coparenting Support-M	.22***	.74***	-.28***	1														
5. Coparenting Undermining-M	-.69***	-.13***	.51***	-.19***	1													
6. Endorse Partner Parenting-M	.20***	.69***	-.26***	.72***	-.14***	1												
7. Coparenting Agreement-F	.40***	.13***	-.28***	.15***	-.34***	.13***	1											
8. Coparenting Closeness-F	.14***	.41***	-.16***	.36***	-.16***	.27***	.09***	1										
9. Exposure to Conflict-F	-.28***	-.15***	.49***	-.17***	.32***	-.18***	-.41***	-.18***	1									
10. Coparenting Support-F	.14***	.39***	-.18***	.44***	-.13***	.33***	.12***	.72***	-.20***	1								
11. Coparenting Undermining-F	-.37***	-.15***	.33***	-.12***	.43***	-.16***	-.70***	-.10***	.52***	-.12***	1							
12. Endorse Partner Parenting-F	.12***	.28***	-.18***	.29***	-.17***	.21***	.10***	.66***	-.22***	.65***	-.12***	1						
13. Subjective Well-Being	.13***	.13***	-.10***	.09***	-.12***	.12***	.10***	.09**	-.11***	.06*	-.10***	.08**	1					
14. Loneliness	-.14***	-.12***	.10***	-.09***	.15***	-.12***	-.08**	-.09***	.11***	-.08**	.12***	-.14***	-.59***	1				
15. Aggression	-.11***	-.09***	.08***	-.05**	.11**	-.09**	-.08**	-.09***	.10***	-.04	.09***	-.09***	-.29***	.45***	1			
16. Pathological Gaming	-.14***	-.11***	.09*	-.07**	.16***	-.10**	-.10***	-.13***	.12***	-.10***	.12***	-.15***	-.29***	.47***	.62***	1		
17. Attitudes toward learning	.12***	.14***	-.09***	.13***	-.12***	.13***	.08**	.11***	-.15***	.10***	-.11***	.13***	.48***	-.54***	-.41***	-.44***	1	
18. Academic performance	.19***	.13***	-.11***	.07***	-.21***	.10***	.13***	.11***	-.14***	.07*	-.20***	.13***	.25***	-.36***	-.25***	-.35***	.42***	1
M	3.86	4.38	0.67	4.15	1.39	4.39	3.71	4.66	0.79	4.39	1.68	4.80	12.20	24.87	0.49	1.69	3.16	3.55
SD	1.44	1.38	0.95	1.42	1.27	1.32	1.52	1.24	1.09	1.23	1.36	1.08	2.70	8.92	0.52	1.93	0.83	0.80

M Mother-report; *F* Father-report

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

Table 2 Fit indices for Latent Profile models

Model	AIC	BIC	aBIC	Entropy	LMRT	BLRT	CP
1	65873.74	66004.36	65928.12				
2	62397.03	62598.41	62480.86	0.851	3466.88***	-32912.87***	0.34/0.66
3	**60774.27**	**61046.40**	**60887.55**	**0.897**	**1631.90****	**-31161.52*****	**0.30/0.61/0.09**
4	59953.23	60296.11	60095.97	0.889	838.37	-30337.14***	0.18/0.17/0.58/0.07

The bolded model indicates the best-fitted model. *AIC* Akaike Information criterion; *BIC* Bayesian Information Criterion; *aBIC* sample size adjusted Bayesian Information Criterion; *LMRT* Lo-Mendell-Rubin adjusted likelihood Ratio Test; *BLRT* Bootstrapped Likelihood Ratio Test; *CP* Classification Probabilities. *$p < .05$; **$p < .01$; ***$p < .001$

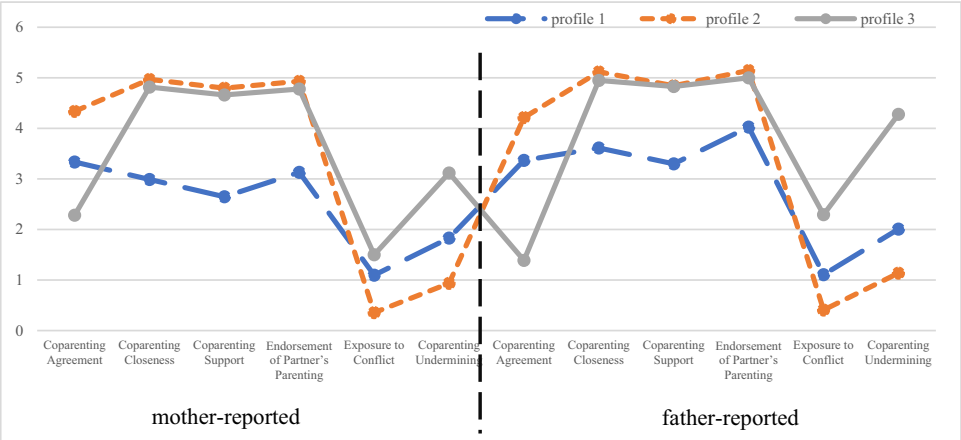

Fig. 1 Three latent profiles across six dimensions of coparenting

adjustment variables as dependent variables were significant. Tukey–Kramer post host tests revealed that adolescents in the cooperative coparenting group reported significantly higher subjective well-being, better attitudes toward learning, and better academic performance, while lower loneliness, lower levels of pathological gaming, and less aggressive behaviors than other groups, suggesting the best adjustment outcomes. Adolescents in the mixed coparenting group reported significantly more aggressive behaviors and worse academic performance than the conflictual coparenting group. There were no significant differences in other adjustment variables between the mixed coparenting group and the conflictual coparenting group.

Supplementary analysis

In order to ensure the validity of classification, three additional series of LPA were conducted (in which data for fathers, for mothers, and fathers and mothers as a whole). Results showed similar three coparenting typologies: cooperative coparenting, which scored high in positive and low in negative counterparts; conflictual coparenting, which scored low in positive and moderate in negative counterparts; mixed coparenting, which scored low in coparenting agreement and high in other positive and negative counterparts. These results could be found in supplementary materials for brevity in the presentation and interpretation of the results.

Discussion

Guided by Family Systems Theory, coparenting serves an essential role in adolescents' adjustment. Previous studies have shown how supportive and cooperative coparenting might benefit various aspects of adolescents' well-being (e.g., Teubert & Pinquart, 2010a). By using the person-centered analysis based on both fathers' and mothers' perceptions of coparenting, the current study extends previous studies in examining how coparenting typologies may relate to adolescents' adjustment in Chinese intact families.

Typologies of coparenting in Chinese families

Latent Profile Analysis was used to identify the typologies of coparenting based on the perceptions of both fathers and mothers. Three distinct typologies were identified in our sample. 61% of the families were classified as having a supportive and cooperative coparenting relationship, referred to as "cooperative" coparenting families. Parents in these families were characterized by having high levels of positive aspects and low levels of negative aspects of coparenting, which resembled cohesive or high functioning

Table 3 ANOVA testing the differences in coparenting dimensions and adolescents' adjustment across three coparenting typologies

	(1) Conflictual coparenting $N=500$ M (SD)	(2) Cooperative coparenting $N=1057$ M (SD)	(3) Mixed coparenting $N=150$ M (SD)	F	Group contrasts
Mother-reported					
Coparenting Agreement	3.33 (1.30)	4.33 (1.24)	2.28 (1.52)	220.09***	(2) > (1) > (3)
Coparenting Closeness	2.95 (1.21)	4.97 (0.95)	4.82 (1.05)	639.15***	(2) = (3) > (1)
Exposure to Conflict	1.09 (1.08)	0.36 (0.50)	1.54 (1.66)	202.38***	(3) > (1) > (2)
Coparenting Support	2.61 (1.20)	4.79 (0.92)	4.67 (1.11)	766.40***	(2) = (3) > (1)
Coparenting Undermining	1.84 (1.20)	0.94 (0.91)	3.13 (1.68)	317.69***	(3) > (1) > (2)
Endorsement of Partner's Parenting	3.11 (1.23)	4.93 (0.92)	4.77 (1.13)	521.82***	(2) = (3) > (1)
Total score	3.57 (0.72)	5.00 (0.53)	4.01 (0.74)	950.28***	(2) > (3) > (1)
Father-reported					
Coparenting Agreement	3.37 (1.32)	4.21 (1.27)	1.36 (1.15)	341.83***	(2) > (1) > (3)
Coparenting Closeness	3.59 (1.27)	5.11 (0.92)	4.97 (0.86)	363.06***	(2) = (3) > (1)
Exposure to Conflict	1.11 (1.05)	0.40 (0.54)	2.34 (1.96)	329.73***	(3) > (1) > (2)
Coparenting Support	3.28 (1.18)	4.84 (0.93)	4.85 (0.93)	404.65***	(2) = (3) > (1)
Coparenting Undermining	2.01 (1.15)	1.14 (0.91)	4.32 (1.19)	675.48***	(3) > (1) > (2)
Endorsement of Partner's Parenting	4.01 (1.24)	5.15 (0.80)	4.98 (0.93)	230.36***	(2) = (3) > (1)
Total score	3.89 (0.69)	4.99 (0.56)	3.58 (0.56)	755.39***	(2) > (3) > (1)
Adolescents' Adjustment					
Subjective well-being	11.71 (2.90)	12.49 (2.52)	11.81 (3.01)	15.44***	(2) > (1) = (3)
Loneliness	26.44 (9.43)	23.82 (8.50)	27.11 (8.92)	18.09***	(1) = (3) > (2)
Pathological gaming	2.10 (2.12)	1.42 (1.72)	2.23 (2.25)	26.72***	(1) = (3) > (2)
Aggression	0.57 (0.56)	0.45 (0.49)	0.59 (0.58)	11.65***	(3) > (1) > (2)
Attitudes toward learning	2.99 (0.87)	3.26 (0.80)	3.06 (0.89)	18.11***	(2) > (1) = (3)
Academic performance	3.42 (0.80)	3.65 (0.76)	3.23 (0.89)	26.43***	(2) > (1) > (3)

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

patterns in prior studies (e.g., McHale et al., 2000; Teubert & Pinquart, 2010b). 30% of the families were identified as having a conflictual or distressed coparenting relationship, referred to as "conflictual" coparenting families. This pattern was characterized by moderate levels of negative and low levels of positive coparenting dimensions, scoring the lowest level on the overall coparenting relationship, which could also be found in some previous studies (e.g., Mallette et al., 2019; McHale, 1997).

Besides the two typical families, 9% of the sample in our study were classified as "mixed" coparenting families. This type of family was partly similar to other studies as mixed or compromising families (e.g., Mallette et al., 2019; McHale, 1997), but also emerged characteristics in Chinese cultural contexts. Firstly, though with different characteristics in coparenting domains across studies, mixed coparenting families might be comparable to other studies. For example, in McHale's (1997) study, passionate coparenting families scored above the group mean on both positive (Family Integrity) and negative (Disparagement, Conflict) coparenting subscales. Similarly, in Mallette et al.'s (2019) study, the compromising profile was found, in which mothers reported moderate amounts of conflict and cooperation in coparenting. Secondly, the prominent characteristic of mixed coparenting families in the current study was that coparenting agreement was the lowest through the three profiles. This finding responded to the Chinese culture's belief in the "Red Face and White Face" belief. Under this belief, parents deliberately show disagreements in parenting to better discipline their children. Wang et al. (2018) noted that coparenting might have three dimensions: cooperation, conflict, and "red face and white face" in Chinese families. The related results of this study also indicated that coparenting agreement played a unique role in Chinese culture and could not be included in the positive dimension of coparenting as in western culture (Feinberg et al., 2012). Meantime, in the mixed coparenting families, the total scores of coparenting were relatively low, suggesting that though scoring high in some positive aspects, the overall coparenting was not optimistic.

The disconnected or disengaged coparenting families in previous studies (e.g., Davies et al., 2004; Mallette et al., 2019) were not found in our study, which was in accordance with our hypothesis. Chinese culture emphasizes inheritance

and even believes that children are essential in maintaining marital relationships (Chang et al., 2004). Chinese parents pay special attention to parenting within such cultural beliefs and are involved in parenting. Especially in children of primary school or adolescent age, Chinese father involves more in parenting (Li, 2020), thus contributing to the coparenting dynamics. While engaging in parenting, both positive or negative interactions in coparenting might emerge. However, since we only identified the typology that compromised over 5% of the sample by using LPA analysis (Tein et al., 2013), the disconnected or disengaged coparenting families may also exist in Chinese families, though atypical. Future studies may investigate this issue by using other methods such as observation.

Furthermore, by using perceptions of coparenting from both fathers and mothers, unlike other studies that found congruent or discrepant types of families (Teubert & Pinquart, 2010b; Zimmermann et al., 2020), gender differences were revealed across three types of families. These differences may be due to the differential parenting roles of fathers and mothers in China and other cultures. During early adolescence, the increasing trend of paternal involvement gets fathers to interact in the coparenting dynamics (Wood & Repetti, 2004). However, due to the maternal gatekeeping behaviors and fathering vulnerability hypothesis (Allen & Hawkins, 1999; Cummings & Watson O'Reilly, 1997), fathers might face more challenges, resulting in higher levels of both positive and negative counterparts in coparenting. This might especially explain that for coparenting undermining, fathers across three groups scored higher than mothers, which meant fathers perceived more barriers from mothers in parenting. Additionally, the relatively higher levels of mother-perceived coparenting agreement in cooperative and mixed coparenting families might reveal that mothers feel a greater sense of consistency toward the same parenting goal in reaction to more paternal involvement in parenting (Feinberg et al., 2007; Vaughn et al., 1988). Given that these explanations for gender differences across three groups are post hoc, future research may include multi-approaches to explore the gender difference characteristics of the three typologies of coparenting in the current study.

Typologies of coparenting and adolescents' adjustment

The second goal of the current study was to examine whether adolescents' adjustment would differ based on the identified coparenting typologies. Our findings showed significant associations between the typologies of coparenting and adolescents' emotional, behavioral and academic adjustment. Firstly, adolescents in cooperative coparenting families had the best adaptation outcomes, in line with previous studies (e.g., Davies et al., 2004). High quality of coparenting provides a secure and cohesive family environment, enhancing positive parenting practices, thus bringing better adjustment of adolescents (e.g., Teubert & Pinquart, 2011). Moreover, according to social learning theory, spillover effects may emerge from interparental relational dynamics to adolescents' social skills or other competencies through observational processes (Bandura, 1977; Zhao et al., 2020). Conversely, in conflictual coparenting families, negative coparenting interactions may have detrimental spillover effects on the parent–child subsystem or harm adolescent intrapersonal functioning, thus bringing adolescents' maladjustment (Martin et al., 2017; Zou & Wu, 2020).

As for mixed coparenting families, our study provided new insight into how they related to adolescents' adjustment. For adolescents' aggression and academic performances, adolescents in mixed coparenting families had worse adaptation. While for other adaption outcomes (subjective well-being, loneliness, pathological gaming, and attitudes toward learning), mixed coparenting families and conflictual coparenting families indicated no significant differences. These results provided initial evidence that "Red Face and White Face" in Chinese families might bring maladjustment to adolescents (Wang et al., 2018). Firstly, since some positive aspects of coparenting (coparenting closeness, coparenting support, and endorsement of partner's parenting) in mixed coparenting families were comparable with the cooperative coparenting families, the maladjustment of adolescents in mixed coparenting families might suggest the exceptionally detrimental effects of negative counterparts of coparenting. This further illustrates the need to consider both positive and negative aspects of coparenting, as their effects on children's developmental adaptation status may differ (Stright & Bales, 2003). Secondly, for the highest aggression and lowest academic performance across three groups, the adolescents' adjustment outcomes in mixed coparenting families indicated the importance of coparenting agreement of parents. Coparenting agreement provides adolescents psychological security (Feinberg, 2003). Discrepant beliefs or behaviors may elicit arguments or conflicts between parents and confuse adolescents. Perceiving the potential of coparenting disagreements of parents, adolescents might result in more externalizing problem behaviors, transferring the "disagreement" and conflicts to their peer interactions (i.e., with more aggressive behaviors). In terms of the academic performances measured in the study, they were more of what adolescents perceived rather than standardized test scores. The effects on academic performances might be due to adolescents' low academic self-efficacy in mixed coparenting families. Since most coparenting studies focused mainly on coparenting support and undermining, more studies are needed on coparenting agreement to replicate our results.

Limitations and future directions

Though with a relatively large sample and multi-informant of coparenting, this study should note several limitations. First, the current study relied on cross-section data, limiting casual interpretations. The associations between coparenting and adolescents' adjustment may be reciprocal (e.g., Choi et al., 2019; Riina et al., 2020). Future research may conduct a longitudinal design to examine the bidirectional associations and reveal the long-term effects of coparenting typologies on adolescents' adjustment. Second, the study adopted a dyadic perspective which included perceptions of both fathers and mothers. Since coparenting could also be investigated through a triadic perspective (Cowan & McHale, 1996; Zimmermann et al., 2020), future studies might also include adolescents' data to get a comprehensive view of coparenting in the family. Lastly, the present sample consisted of only two cities in China. Though we have made certain balances in the sampling area (i.e., north and south areas, urban and rural areas), the generalization of the current results to other parts of China or other cultures awaits further empirical examination.

Implications

The current study had meaningful implications for research. Our findings reinforced that the positive and negative counterparts of coparenting were interacted with each other in a specific family and had different impacts on adolescents' adjustment. Therefore, it is vital to understand coparenting characteristics by adopting person-oriented analytic strategies and taking both positive and negative counterparts of coparenting into account in future research. In addition, our results highlighted discrepant perceptions in coparenting multi-domains between fathers and mothers, which suggested father and mother views of coparenting should both be considered in a dyadic way for future studies.

Moreover, some vital implications for practice should be noted. In line with the family systems theory, our findings supported the hypothesis that cooperative coparenting family was most beneficial to adolescents' emotional, behavioral and academic adjustment. While not all parents were able to achieve a cooperative relationship, 39% of the families in our study were identified as having a conflictual or mixed coparenting relationship. Adolescence is a crucial period to accomplish specific developmental issues, and parents play a critical role in providing essential sources for adolescents' development (Gavazzi, 2011). The high level of adolescents' exposure to conflict, low level of coparenting agreement, and other characteristics of the above ineffective coparenting patterns would not meet the needs of adolescents' growth, which resulted in negative consequences for adolescents' adjustment. This might be because of the lack of willingness, knowledge, or skills in coparenting, which would be the core of parenting interventions in the future. Additionally, the mixed coparenting pattern in our study, which showed the lowest value on Coparenting Agreement, should be interpreted based on the traditional "Red Face and White Face" belief in Chinese culture. Nevertheless, high levels of coparenting inconsistency are associated with adverse outcomes for children and adolescents, such as internalizing and externalizing behavior (Teubert & Pinquart, 2010a). Our findings also indicated that adolescents in mixed coparenting families showed the worst adaptation. These results suggested the necessity of strengthening family education guidance to reverse parents' unreasonable family education beliefs, promote parents' agreement in coparenting, and create a suitable environment for adolescents' development.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s12144-022-04049-z.

Data availability The dataset of the current study is available upon request.

Declarations

Ethics approval The study was approved by the authors' institutional rebiew board. All participants provide informed consent to participate in the present study.

Conflicts of interest The authors declare that they have no conflict of interest.

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