

Typologies of Post-divorce Coparenting and Parental Well-Being, Parenting Quality and Children's Psychological Adjustment

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Abstract The aim of this study was to identify post-divorce coparenting profiles and examine whether these profiles differentiate between levels of parents' well-being, parenting practices, and children's psychological problems. Cluster analysis was conducted with Portuguese heterosexual divorced parents ($N = 314$) to yield distinct post-divorce coparenting patterns. Clusters were based on parents' self-reported coparenting relationship assessed along four dimensions: agreement, exposure to conflict, undermining/support, and division of labor. A three cluster solution was found and replicated. Parents in the high-conflict coparenting group exhibited significantly lower life satisfaction, as well as significantly higher divorce-related negative affect and inconsistent parenting than parents in undermining and cooperative coparenting clusters. The cooperative coparenting group reported higher levels of positive family functioning and lower externalizing and internalizing problems in their children. These results suggested that a positive coparenting alliance may be a protective factor for individual and family outcomes after parental divorce.

Keywords Coparenting · Divorce · Externalization · Internalization · Parenting

Introduction

Parental divorce is a major risk factor for internalizing and externalizing problems in children and adolescents [1, 2]. Cross-sectional and longitudinal studies show that children of divorced parents report more psychological maladjustment than children of married parents [3]. A large body of research has revealed that children of divorced parents exhibited a heightened prevalence of conduct problems [4], anxiety and depression symptoms [5], and academic difficulties [6].

Although the association between parental divorce and children's psychological problems is well-established [7], theoretical formulations suggest that it is not divorce per se (i.e., the dissolution of marital subsystem) that triggers children's mental health problems but rather pre and post-divorce family processes are considered as the major risk mechanisms [7]. Family and child abnormal psychology scholars have traditionally focused their research on understanding how parenting practices and divorce-related inter-parent conflict account for post-divorce children maladjustment [8, 9]. However, coparenting is emerging as a key family process in predicting family functioning and family members' psychological well-being in all types of families regardless of their structure [10]. Prior research with married, divorced, and never-married parents has demonstrated that coparenting mediates or moderates associations between marital relationships and children's psychological adjustment [11], marital relationships and parenting [12] and parenting and children's psychological adjustment [13].

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In post-divorce families, coparenting may assume a key role in the prediction of children's psychological adjustment. However, little is empirically known about post-divorce coparenting profiles and how family and children's outcomes may vary according to these profiles. Pattern-based approaches—e.g., cluster-analytic procedures—can identify qualitatively distinct typologies. Therefore, the main goal of this study is extending previous literature by identifying post-divorce coparenting profiles and examining the extent to which parenting, parents' well-being, family functioning, and children's psychological adjustment differ as function of coparenting profiles.

Coparenting

Coparenting is defined by the reciprocal and conjoint involvement of both parents in education, childrearing and planning of children's life decisions [14]. Coparenting entails efforts by each coparent in supporting the other coparent's parenting practices [15]. In addition, coparenting describes parents' expectations, beliefs, attitudes and behaviors regarding the dynamic interplay with the other parent in the caregiving of a specific child (parent–parent interactions) [14, 16]. Accordingly, successful coparenting is not equivalent to the non-existence of overt and covert coparenting conflict, but also encompasses a proactive and cooperative coparenting alliance and a shared commitment to childrearing [17].

Thus, coparenting is a multidimensional construct by nature [13, 14]. For example, in his ecological model of coparenting, Feinberg [14] proposed four main coparenting components: childrearing agreement (the extent to which coparents agree on the child-related issues); division of labor (how the coparenting dyad shares and coordinates childcare duties and responsibilities); support/undermining (validation of the other parent's efficacy as a parent and respect and promote the other's parenting practices; overt and covert conflict, such as sabotage of other's parenting practices with hostility, criticism, disparagement, blame, and competition); and, finally, joint family management (how parents regulate family members' roles and set boundaries among family subsystems—including the extent to which they expose children to overt conflict) [36].

Moreover, in Feinberg's conceptual model, coparenting assumes a crucial role in family structure and functioning. Coparenting is conceptualized as exerting, on the one hand, direct influence on children's outcomes (e.g., by jeopardizing coparents' positive coordination in daily childrearing duties and by exposing the child to interparental conflict) and, on the other hand, indirect influence by affecting parents' adjustment and parenting practices, which in turn have impact on children's adjustment. This conceptual hypothesis has been supported by a body of

empirical work [13, 18–20]. For example, Umemura et al. [20] found that competitive coparenting directly predicted externalizing and somatic symptoms in school-aged children, whereas Jones et al. [19] found the association between coparenting conflict and children's internalizing and externalizing problems was partially mediated by parenting.

In non-divorced families, children's internalizing and externalizing problems have been predicted by coparental childrearing disagreement [21], undermining [22], and joint family management [10]. Furthermore, a recent meta-analysis study found that coparenting domains (coparenting cooperation, conflict, and triangulation) longitudinally predict changes in children's social functioning and both externalizing and internalizing symptoms [13].

Post-divorce Coparenting and Children's Adjustment

For the majority of former married couples who have children together, contact is largely related to coparenting tasks and responsibilities. Therefore, effective coparenting relationships between ex-spouses may be favorable for children's psychological adjustment, since they reduce children's exposure to conflict [23], increase parents' cooperation in childrearing [24], promote positive parenting and involvement of the nonresidential parent [25], and contribute to positive parental psychological adjustment [26]. Previous research has shown that post-divorce coparenting cooperation is positively associated with marital adjustment during marriage [27], low levels of parental gatekeeping beliefs and behaviors [28], and easy child temperament [17]; and negatively linked with divorce litigation [23], a parent's new intimate relationship [29], parental depression and anxiety [30], and time since divorce [31].

Surprisingly, although coparenting is a well-studied family process in families with divorced parents, the majority of these studies have not been informed by a conceptual model of coparenting, and instead assess coparenting as an unidimensional construct. The measures used in previous research treat coparenting as a composite dimension that prevents examination of which coparenting components are associated with specific children's psychopathological problems. Additionally, a substantial number of the published studies focus on the effects of post-divorce coparenting quality on nonresidential parents' involvement [29] and few studies examine the contribution of coparenting to children's adjustment. Since past studies have employed similar conceptual labels to describe different constructs, we will use Feinberg's model of coparenting components to organize previous literature findings.

Past research has suggested that post-divorce children's externalizing problems are primarily associated with poor joint family management (i.e., exposure to coparenting conflict, triangulation) [13, 32]. Previous studies also reveal that externalizing problems are predicted by coparenting undermining and low support [28]. In the case of internalizing problems, empirical studies demonstrate that undermining/support may be the coparenting dimensions most strongly associated with children's internalizing problems [32, 33]. Other studies indicate a moderate association between difficulties in joint family management and internalizing or emotional problems [34, 35]. On the other hand, positive division of labor and coparenting agreement were negatively associated with children's social difficulties [36].

To our knowledge, few published studies have created post-divorce coparenting typologies based on interparental relationship variables [31, 37] and only Amato et al. [31] examined whether adolescents' adjustment outcomes varied across coparenting groups. In order to develop post-divorce coparenting patterns, Maccoby et al. [36], factor-analyzed the coparenting-related items of their interview and two coparenting components emerged: discord (characterized by sabotage practices of the other parent's parenting and recurrent arguing) and cooperative communication (childrearing agreement and positive communication about children). Finally, dichotomization of these two components yielded four types: dyads who scored high on communication and low on discord were labeled as *cooperative*, while those who scored low on communication and high on discord were labeled as *conflicted*. The third group, *parallel* dyads, was characterized by low scores on both components, whereas *mixed* dyads had high scores on both dimensions. However, that study did not use children's well-being measures [36].

Recently, Amato et al. [31] developed a three-group post-divorce coparenting typology: cooperative coparenting, parallel coparenting, and single parenting. Cooperative coparenting (29 % of the sample) was characterized by high-contact between parents, high scores on satisfaction with the other parent, low interference of the other parent in one's parenting, moderate conflict, and positive child-nonresidential parent relationships (children talking to, visiting, staying overnight with nonresident parents). Parallel coparenting (35 % of the sample) was characterized by moderate contact between children and nonresidential parents, and low interference and support in childrearing issues. Finally, the single parenting cluster (36 % of the sample) was characterized by low involvement of nonresidential parents in their children's lives. Among the six indicators used to examine adolescents' adjustment, Amato found that adolescents with cooperative parents

significantly reported lower levels of behavior problems than adolescents with parents in the other two groups.

Despite being the first study to examine differences in adolescents' adjustment as a function of their parents' post-divorce coparenting profile, the Amato study had some conceptual and methodological limitations. First, with exception of the coparenting conflict dimension, coparenting domains were assessed with one item. The coparenting items were not factor-analyzed and limited conceptual background was provided to choose which items to measure coparenting. On the other hand, adolescents' adjustment was not assessed using psychometric validated measures that limit the validity of these findings for child and family clinical psychology.

Additionally, according to Feinberg's model and recent empirical studies, coparenting exerts influence on parents' well-being, parenting quality and global family functioning. However, past post-divorce typology studies have not examined whether parents' well-being, parenting practices and family functioning differ by the post-divorce coparenting profile. The current study used subscales from the Coparenting Relationship Scale-Brief version [38] to create post-divorce coparenting clusters. Developed to assess Feinberg's coparenting components, CRS-Brief subscales cover coparenting agreement, support and undermining and practices of division of childcare labor and joint family management. Therefore, CRS-Brief subscales may be valuable in clustering coparenting cooperative and conflicted profiles.

The Current Study

The current study had three aims. The first aim was to identify post-divorce coparenting profiles through cluster analysis. Based on past literature, we hypothesized three coparenting profiles: a cooperative coparenting profile (high division of childcare labor, coparenting support and agreement, and low undermining and overt-conflict coparenting), a conflictual coparenting profile (high undermining and overt-conflict coparenting, and low division of childcare labor and coparenting support and agreement), and a non-involved coparenting profile (low scores in all coparenting dimensions). The second aim was to examine whether the post-divorce coparenting clusters differed on parental well-being, parenting, and family functioning. Specifically, our second hypothesis was that divorced adults in the cooperative coparenting profile (high agreement, support and division of labor and very low undermining and joint family management difficulties) would report greater psychological well-being (life satisfaction and regulation of negative affect), less inconsistent parenting, greater positive parenting, and more satisfaction with post-divorce family functioning than the other two

profiles. Finally, the third aim was to assess differences between the coparenting profiles on children's psychological adjustment. We hypothesized (Hypothesis 3) that parents in the cooperative coparenting profile would report the lowest levels of children's internalizing and externalizing symptoms, while parents in the conflictual coparenting profile would report the highest levels of children's internalizing and externalizing symptoms.

Method

Participants

Participants were 314 divorced adults (aged 24–65 years, $M = 42.7$, $SD = 7.9$) who had Portuguese nationality and were living in Portugal at the time of data collection. Socio-demographic data are summarized in Table 1. On average, participants reported having divorced 5.19 years before entering the study ($SD = 5.01$). Seventy percent of the participants reported to have had a separation period before the legal act of divorce (average of the separation period in days = 124.7, $SD = 288.5$). Divorce was litigious for 30 participants (9.6 %) and was mutually consented to among 284 (90.4 %). Average age of the child at the time of data collection was 11.6 years ($SD = 5.1$, range 4–16).

Measures

Coparenting was assessed using the CRS-Brief [38]. The original CRS-Brief is comprised by 14 items divided in seven subscales (two items per subscale) that measure the four coparenting components of Feinberg's model.¹ According to the authors of the CRS-Brief, the coparenting agreement component is assessed by the Coparenting Agreement and Endorsement of Partner's Parenting subscales, the support/undermining components are assessed by the Support and Undermining subscales, the division of labor component is measured by the Division of Labor subscale, and the joint family management component is assessed by the Exposure to Conflict subscale [38]. Each item is answered on a 7-point scale (from "not true of us" to "very true of us"). As no Portuguese version of CRS-Brief was available, we translated then items and tested construct validity (see "Appendix" for statistical procedures). Confirmatory Factor Analyses revealed that the final model of the Portuguese version showed an excellent

fit, Comparative Fit Index (CFI) = .98, Tucker–Lewis Index (TLI) = .97, Root Mean Square Error of Approximation (RMSEA) = .04. The Portuguese final version of the CRS-Brief is comprised by 12 items divided into four subscales: Coparenting Agreement/Support (six items; e.g., 'My ex-partner and I have the same goals for our child'), Division of Labor (two items; e.g., 'My ex-partner does not carry his or her fair share of the parenting work'), Coparenting Undermining (two items; e.g., 'My ex-partner undermines my parenting'), and Exposure to Conflict (two items; e.g., 'One or both of you say cruel or hurtful things to each other in front of the child?'). Internal consistency (Cronbach's α) in the current sample for Coparenting Agreement/Support, Coparenting Undermining, Division of Labor, and Exposure to Conflict subscales was .89, .72, .62 and .85, respectively.

Satisfaction with life was measured using the Satisfaction with Life Scale [39]. SWLS is a 5-item measure that assesses the sense of general satisfaction with one's life. Life satisfaction is conceptualized as the cognitive dimension of subjective well-being. Each item is rated on a 7-point scale (from "strongly disagree" to "strongly agree") with higher scores representing greater life satisfaction. Internal consistency (Cronbach's alpha) was .86 in the current sample. The Portuguese version of the SWLS showed very good psychometric properties [40].

Negative affect related to divorce was assessed using the Lonely-Negativity subscale of the Psychological Adjustment to Separation Test [30]. This subscale examines the existence of negative emotions, affect regulation difficulties and feelings of loneliness triggered by divorce experience. The Portuguese version of this scale is comprised by ten items that are answered in a 7-point scale (from "very poorly" to "very well"). Higher scores indicate higher divorce-related negative affect. The Portuguese version of the PAST revealed excellent psychometric properties [41]. Reliability was found in the present sample to be very good (Cronbach's $\alpha = .87$).

Positive parenting and inconsistent parenting were assessed using two subscales of the short version of the Alabama Parenting Questionnaire [42]. Positive parenting subscale measures parent's positive rewards toward child's adequate behavior as well as the frequency of positive interactions between the parent and the child. Inconsistent parenting assesses the parent's inability to manage/extinguish the child's undesirable behaviors. Each subscale has three items. Participants are asked to rate the typical frequency of various parental and child behaviors on a 5-point scale (from "never" to "always"). As no construct validity was available in the Portuguese language, a Confirmatory Factor Analysis (CFA) was conducted to test construct validity of the APQ's positive parenting and inconsistent parenting scales in the current sample. CFA revealed an

¹ Original CRS-Brief also entails an additional subscale labeled as 'Coparenting Closeness'. Items of this subscale were not included in this study since they do not assess any coparenting component of the Feinberg's ecological model [14] and they are not applicable to divorced coparents either.

Table 1 Description of sample (N = 314), n (%) for categorical variables and M (SD) for continuous variables

	Value	
	N	%
Gender		
Female	224	71.3
Male	80	28.7
Employment status		
Employed full/part-time	258	82.2
Unemployed	28	8.9
Other	28	8.9
Divorce initiator status		
Divorce initiator	190	60.5
Divorce non-initiator	56	17.8
Divorce mutually initiated	68	21.7
New intimate relationship status		
Yes	96	30.6
No	218	69.4
	<i>M</i>	<i>SD</i>
Years of education	1.8	.89
Income (€)	1625	1162
Time since divorce (months)	62.9	58.1
Number of children	1.5	.6

excellent fit: CFI = .99, TLI = .98, RMSEA = .05. Internal consistency (Cronbach's α) in the current sample for positive parenting and inconsistent parenting subscales, respectively, was .72 and .73.

Overall family functioning was assessed by the General Functioning subscale of the Family Assessment Device [44], which measures general healthy functioning of familial relationships. This 12-item subscale emphasizes six dimensions of family functioning: communication, problem solving, affective involvement, affective responsiveness, roles, and behavior control. Participants rate each item on a 4-point scale (from "strongly agree" to "strongly disagree"). Higher scores represent poorer family functioning. An excellent internal consistency was found in the current sample (Cronbach's α = .91). The Portuguese version of the FAD was used in the current study [45].

Children internalizing and externalizing problems were measured using the Strengths and Difficulties Questionnaire—Parent Form SDQ [46]. We used the four SDQ subscales that cover children and adolescents mental health problems: emotional symptoms, conduct problems, hyperactivity-inattention, and peer problems. Each subscale is comprised of five items with a 3-point response scale (from "not true" to "certainly true"). Consistent with Goodman et al. [47], a total internalizing problems score (sum of the

scores of the emotional symptoms and peer problems subscales) and a total externalizing problems score (sum of the conduct problems and hyperactivity-inattention subscales scores) were computed [47]. Internal consistency coefficients in the present study were .76 for internalizing problems and .80 for externalizing problems.

Procedure

Data for the current study were derived from the Portuguese National Study about Divorce Experience (PNSDE). PNSDE was an online-design survey divided in three sections: socio-demographic variables, adults' individual divorce experience, and family processes after divorce. The third section of the survey (family, parenting and child's adjustment measures) was only available to those adults who reported in the socio-demographic section to have had a heterosexual marriage and at least one child. Participants were asked to answer this section regarding their youngest child, in case they had more than one child with the former spouse. The survey was accessible on a Portuguese internet research portal for divorce research from June to October 2010. Participants were recruited through notices in the media (e.g., national newspapers) and electronic announcements (e.g., e-mails to institutional public entities web accounts, and announcements on national web forums and websites dedicated to family issues). No financial compensation was provided. To guarantee data quality, standard methodological and ethical guidelines for internet-based research were followed [48], such as application of informed consent procedures (Kraut et al. [48]), design of a parsimonious plan for participants' recruitment and application of protection procedures against potentially biased samples. From the 460 PNSDE's participants with validated protocols, 118 participants reported to have had no child with the ex-spouse. From the remaining 342 participants, 28 participants were removed from the current analyses because their children did not meet SDQ's age criteria (from 4 to 16 years).

Analytic Strategy

Cluster analytic procedures were conducted in order to identify post-divorce coparenting profiles. The four subscales of the Portuguese version of the CRS-Brief were used to perform the cluster analysis. Initially, a Ward's agglomerative hierarchical cluster analysis (Standardized Euclidian Distance method) was conducted in order to establish the number of clusters. The visual inspection of the hierarchical cluster analysis outputs (e.g., dendrogram analysis, Euclidian distance plot, and agglomeration scheme) was used to determine the optimal clustering solution. To confirm this solution, cases were then

clustered performing a *K*-means analysis with squared Euclidean distance as index of similarity (*z*-scores of the CRS-Brief subscales were employed). The comparison of the results of the *K*-means analysis with those obtained in the hierarchical cluster analysis was performed using Cohen's Kappa coefficient as an agreement measure [49]. The final cluster solution was selected based on kappa values and theoretical interpretation.

Stability of the cluster solution was tested using a cross-validation procedure [50]. After randomly splitting the overall sample in two subsamples, a *K*-means analysis was conducted on both subsamples and the agreement between the two solutions was calculated using Cohen's Kappa coefficient. This procedure was replicated ten times [49]. Stability of the cluster solution was additionally examined by performing a MANOVA on the coparenting dimensions using the clusters as a fixed factor. Finally, follow-up ANOVAs (with Bonferroni correction for multiple testing) were conducted to examine whether clustering variables were significantly different across clusters.

One-way analyses of variance and Chi square tests were conducted to test differences between the coparenting groups in socio-demographic and divorce variables. Finally, differences between profiles in parental well-being, parenting variables, and children's internalizing and externalizing problems were tested using ANOVAs. All significant ANOVAs were followed by the Tukey–Kramer post hoc test to identify significant differences between groups.

Results

Aim 1: Examination of Post-divorce Coparenting Profiles

An analysis of dendrogram analysis, Euclidian distance plot, and agglomeration scheme from the Ward's agglomerative hierarchical cluster analysis indicated the adoption of three clusters as an optimal solution. As a confirmatory analysis, the comparison of the results of the *K*-means analysis with those obtained in the hierarchical cluster analysis revealed substantial agreement ($\kappa = .81$). The analyses of cross-validation for examination of the clusters solution stability revealed a substantial agreement for the three-cluster solution ($\kappa = .77$, range .51–.94). Additional MANOVA demonstrated that coparenting dimensions (clustering variables) significantly differed between the clusters, Wilks's λ , $F(8, 616) = 174.3$, $p < .001$, $\eta^2 = .69$. Follow-up Bonferroni-corrected ANOVAs revealed that all clustering variables were significantly different across the three clusters.

Defining Profiles

The means and standard deviations for coparenting variables for each cluster, as well as the cluster-by-cluster differences, are presented in Table 2. The three groups were labeled based on the most salient coparenting dimensions. Cluster 1 (13 % of the sample) reported low scores on the SCR-Brief Coparenting Agreement/Support subscale, elevated scores on the Coparenting Undermining subscale, the lowest score on the Division of Labor subscale, and the highest scores on the Exposure to Conflict subscale. Taking into account that the most salient coparenting features reported by the participants of this cluster were high covert (undermining coparenting) and overt (exposure to conflict) coparenting conflict strategies, it was labeled the high-conflict coparenting group (HCC). Cluster 2 (39 % of the sample) reported low average scores on the CRS-Brief Coparenting Agreement/Support, Division of Labor and Exposure to Conflict subscales and high scores on the Coparenting Undermining subscale. Since the most salient coparenting dimension in this cluster was undermining (i.e., covert conflict strategies: use of hostility, criticism, and blame in the coparenting relationship), it was labeled the undermining coparenting group (UC). Finally, Cluster 3 (48 % of the sample) revealed the highest average scores on the Coparenting Agreement/Support and Division of Labor subscales and the lowest average scores on the Coparenting Undermining and Exposure to Conflict subscales. As the participants in this group reported the characteristics of successful coparenting described in literature, this cluster was labeled as cooperative coparenting group (CP).

Tukey–Kramer post hoc tests revealed that, when compared with the other profiles, HCC profile exhibited higher scores on the Exposure to Conflict subscale and lower scores on the Division of Labor subscale. When compared with the HCC and UC profiles, parents of the CC profile reported higher scores on the Coparenting Agreement/support and Division of Labor subscales. UC profile showed higher scores on the Division of Labor subscale than HCC profile. No significant statistical differences between HCC and UC profiles on the Coparenting Agreement/support and the Coparenting Undermining subscales were found.

Coparenting Group Comparisons on Socio-demographic and Divorce Variables

A difference between the groups in parents' age was found, in which parents of the UC group ($M = 40.4$ years, $SD = 8.0$) reported a statistically significant (all $ps < .05$) lower average age than HCC ($M = 43.9$, $SD = 5.9$) and CC ($M = 44.3$, $SD = 7.8$) groups, $F(2, 313) = 9.45$,

Table 2 Average scores on subscales of the CRS-Brief for the coparenting groups

CRS-Brief subscales	Coparenting groups						Group differences tests		
	High-conflict coparenting (<i>n</i> = 40)		Undermining coparenting (<i>n</i> = 124)		Cooperative coparenting (<i>n</i> = 150)		<i>F</i> (2,311)	η^2	Group contrasts ^a
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Coparenting agreement/support	12.55	7.46	12.68	6.60	25.48	7.85	120.1	.44	CC > UC, HCC
Coparenting undermining	7.10	3.72	7.15	3.28	2.39	1.69	118.6	.43	HCC, UC > CC
Division of labor	1.55	2.32	2.69	2.20	7.45	2.51	181.1	.54	CC > UC > HCC
Exposure to conflict	8.75	2.84	2.05	1.15	1.95	1.58	336.5	.68	HCC > UC, CC

ANOVA tests of overall group differences were significant at $p < .001$ for all CRS-Brief subscales. ANOVAs were Bonferroni-corrected for multiple comparisons

HCC High-conflict coparenting, *UC* undermining coparenting, *CC* cooperative coparenting

^a Significant group differences at $p < .05$ using Tukey–Kramer test

$p < .001$. ANOVAs also revealed no significant differences between the groups in average years of education, monthly income, number of children with ex-spouse, focal child age, period of separation before the legal act of divorce, and time since divorce (all $ps > .05$). Chi square tests showed that no significant differences between groups in parents' gender, new intimate relationship status, divorce initiator status, and focal child gender (all $ps > .05$). A significant group difference was found for type of divorce, with a higher proportion of those in the HCC group (30 %) reporting a litigious divorce as compared with those in the UC (10 %) and CC (4 %) groups, $\chi^2(2, 314) = 24.71$, $p < .001$, Cramer's $V = .28$, $p < .001$.

Aim 2: Differences Between Coparenting Profiles on Parents' Psychological Well-Being, Parenting and Family Variables

Before the examination of the differences between post-divorce coparenting profiles on outcomes variables, preliminary bivariate correlations were conducted in order to determine the association between main study variables (Table 3). Overall, associations among study variables were in the expected direction. Coparenting variables were all correlated between each other. Internalizing problems were low associated with all coparenting variables (with exception of coparenting agreement/support), while externalizing problems were low to moderate associated with all coparenting subscales. Surprisingly, positive parenting was only correlated with inconsistent parenting and children's externalizing problems.

As presented in Table 4, when compared with the other two coparenting groups, HCC group exhibited significantly lower scores of life satisfaction, $F(2, 313) = 6.17$,

$p < .01$, as well as significantly higher scores of divorce-related negative affect, $F(2, 313) = 6.11$, $p < .001$, and inconsistent parenting, $F(2, 313) = 6.46$, $p < .001$. Additionally, the CC group, when contrasted with HCC and UC groups, reported significantly higher levels of post-divorce family functioning, $F(2, 313) = 9.14$, $p < .001$. There were no significant differences between the three groups in positive parenting, $F(2, 313) = .47$, *ns*. No significant differences between UC and CC groups were found on the parents' psychological well-being and the parenting variables (Table 4), family functioning being an exception, in which UC reported lower level of family functioning (and not statistically different from HCC group) than CC group.²

Aim 3: Differences Between Coparenting Profiles on Children's Psychological Adjustment Problems

Scores of the SDQ Emotional Symptoms and Peer Problems subscales were summed to create an Internalizing Symptoms index [47]. ANOVA test with the three-cluster solution serving as the factor and the Internalizing Symptoms index as dependent variable was significant, $F(2, 313) = 5.96$, $p < .001$ (Fig. 1a). Tukey–Kramer post hoc tests revealed that parents of the CC group reported significantly lower internalizing problems compared with the

² Since age differences may be expected, we divided the overall sample into two subsamples based on children's age: 4–10 years subsample ($N = 96$) and 11–16 year-old subsample ($N = 218$). After running the three-cluster solution separately on the two subsamples, all significant and non-significant results found on both subsamples replicated those obtained in the overall sample in the associations between coparenting profiles and the outcomes variables (parents' psychological adjustment, parenting, family functioning, and children's psychological adjustment).

Table 3 Bivariate correlations between main study variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Coparenting agreement/support									
2. Coparenting undermining	.59***	–							
3. Division of labor	.15**	.24***	–						
4. Exposure to conflict	–.14**	–.17***	–.24***	–					
5. Life satisfaction	.21***	.19***	–.11	–.14**	–				
6. Negative affect	–.02	.001	.16**	.20***	–.58***	–			
7. Inconsistent parenting	–.04	–.19***	–.05	.21***	–.27***	.25***	–		
8. Positive parenting	.02	.11	–.04	–.05	.09	–.07	–.15**	–	
9. Internalizing problems	–.08	–.14**	–.20***	.12*	–.12*	.22***	–.06	–.12*	–
10. Externalizing problems	–.27***	–.31***	–.16***	.13*	–.26***	.17***	.31***	–.12*	.33***

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

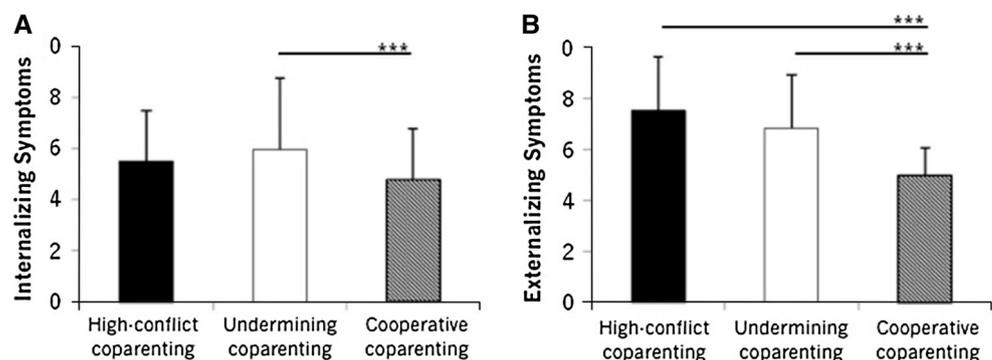
Table 4 Coparenting group differences on measures of parents' psychological adjustment and parenting

Variable	HCC ($n = 40$)		UC ($n = 124$)		CC ($n = 150$)		Group differences tests	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i> (2, 313)	Group contrasts ^a
Life satisfaction	18.10	8.25	22.03	6.80	22.24	6.41	6.17**	HCC < UC, CC
Negative affect	27.05	9.97	21.40	8.78	22.45	8.42	6.11***	HCC > UC, CC
Positive parenting	13.51	1.68	13.25	1.49	13.33	1.57	.47	<i>ns</i>
Inconsistent parenting	7.95	2.06	6.98	2.38	6.54	2.12	6.46***	HCC > UC, CC
Family functioning ^b	30.05	1.23	27.79	.71	24.84	.64	9.14***	CC < HCC, UC

HCC High-conflict coparenting, UC undermining coparenting, CC cooperative coparenting

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

^a Significant group differences at $p < .05$ using Tukey–Kramer test, ^b lower scores in FAD General Functioning subscale correspond to greater family functioning

Fig. 1 Differences among coparenting profiles on SDQ externalization and internalization (***) $p < .001$ 

UC group. Moreover, the difference in the average scores in this index between HCC and CC groups was not statistically significant. HCC and UC did not significantly differ between each other.

In addition, scores of SDQ Conduct Problems and Hyperactivity scales were summed to compute an Externalizing Symptoms index [47]. The ANOVA on the

Externalizing Symptoms index and the three-cluster solution serving as the factor revealed that externalizing problems significantly differed between coparenting groups, $F(2, 313) = 12.01$, $p < .001$. As presented in Fig. 1b, Tukey–Kramer post hoc test showed that, as contrasted with both of the other two groups, parents of the CC group reported lower overall externalizing problems.

There were no significant differences between the HCC and UC group on this index.

Discussion

Guided by prior findings and Feinberg's conceptual model that advocated coparenting as a key family mechanism in the prediction of family members' outcomes [14], we tested in a sample of Portuguese divorced parents whether there was evidence for distinct coparenting profiles and whether these profiles differentiated parents' well-being, parenting quality, global family functioning and children's externalizing and internalizing problems. Overall, results of the current research revealed that cluster analysis procedures successfully identified different configurations of coparenting relationships after marital dissolution. Furthermore, our findings assume clinical utility since they demonstrated that post-divorce coparenting profiles were distinctively associated with the outcome variables.

Using a psychometric validated measure for the Portuguese context that assesses theory-driven coparenting components [38], we identified three post-divorce coparenting profiles: high-conflict coparenting, undermining coparenting, and cooperative coparenting. Parents classified as high-conflict displayed low levels of coparenting agreement/support and division of childcare labor and high levels of both covert (assessed by the Undermining Coparenting subscale) and overt coparenting conflict (assessed by the Exposure to Conflict subscale). Parents in the undermining coparenting group exhibited low levels of agreement/support, division of childcare labor and exposure to conflict and high scores on coparenting undermining. Finally, cooperative coparents evidenced high agreement/support and division of labor with the lowest levels of undermining and children's exposure to conflict.

Although the post-divorce coparenting profiles identified in this study replicate those extracted in previous studies to some extent, there are important differences. More concretely, while the description of high-conflict coparenting profile is comparable to that which was reported previously [37], the proportion of cases of high-conflict coparenting (14 %) in our total sample is notably lower than those found by and Maccoby et al. [37] (26 % of the overall sample). Further, our results revealed an undermining coparenting profile that was not described in earlier studies and also did not identify a parallel coparenting group (characterized by low scores in all coparenting components) as described by the all other known typologies. The cooperative coparenting pattern, however, is consistent with the previous empirical work [31, 37]. Therefore, hypothesis 1 was partially supported.

Our findings suggest that the UC profile may be conceptually distinct from parallel coparenting described elsewhere. Post-divorce parallel coparenting was described in literature as emotionally disengaged, with low covert and overt conflict interactions, low communication, independent parenting practices, and little interference in the other parent's relationship with the child [25, 51]. Although our UC profile also exhibits a low level of overt coparenting conflict, low support and independent parenting practices (i.e., low division of childcare labor), parents in this profile additionally reported high covert coparenting conflict. Covert undermining coparenting includes disparaging communications to the child about the absent coparent, sabotaging the other coparent's parental authority, and negative interference in the other coparent's relationship with the child [38, 52]. Therefore, the underlying conflict strategies may differentiate these groups: although parallel coparenting found in others studies may be defined by avoidant conflict strategies [53], undermining coparenting is mainly characterized by covert and tension-inducing conflict tactics [54].

Methodological, cultural, and historical factors may explain these differences. Firstly, previous studies tended to aggregate overt (expressed-conflict strategies) and covert (undermining strategies) coparenting conflict into the same composite, which may hinder the distinction between these two groups. In addition, coparenting was assessed in different periods after divorce. Next, as all previous coparenting typologies were extracted using data from United States participants and our study used a sample of parents of a European country, sociological and legal differences across nations may explain these variations. Finally, data were collected in different historical periods (1970s–1980s in all American studies vs. 2010 in the current study). The historical evolution of divorce and the societal pressure to promote more positive post-divorce coparenting interactions may have contributed to reduce disengaged coparenting. However, more engaged post-divorce coparenting may also lead to increased conflict. Replication and refinement of these post-divorce coparenting profiles is a major question to be addressed in future research.

To address the clinical value of these patterns, we first examined how the post-divorce coparenting configurations were associated with parental psychological well-being, parenting, and general family functioning. We expected that the cooperative coparenting group would report significantly better scores on these measures as documented in prior research [55]. Interestingly, in contrast to our second hypothesis, the HCC group exhibited the lowest levels of life satisfaction and the highest levels of divorce-related negative affect and inconsistent parenting. No differences between the CC and UC profiles were found on these

outcomes. In comparing the groups' average scores on the CRS-Brief subscales, HCC and UC groups exhibited similar scores with the exception of Exposure to Conflict and Division of Labor subscales. As the HCC group reported high levels of two types of coparenting conflict (overt and covert), UC group revealed high levels of covert conflict only and CC group reported low levels of both types of coparenting conflict, it is reasonable to hypothesize that the combination of covert and overt coparenting conflict in the HCC group in an additive interaction with the other components, may play a major role in decreasing parents' adjustment and weakening parents' parenting practices [56].

Although additional empirical replication is needed, this finding does lead to plausible interpretations. First, frequent and synchronic expression of overt and covert conflict may permanently increase psychological and physiological stress and, by reducing coparenting cohesion and interdependence, may invalidate coparents' sense of competence. Since developmental theories outline that an effective coparenting alliance and competent parenting are two major developmental tasks to restore or maintain post-divorce parental well-being [57], conflicted interactions may decrease instrumental and emotional coparental support and challenge parenting roles—and in this way jeopardize parents' availability to invest in goals or activities related to personal subjective well-being (e.g., investment in new intimate relationships). In turn, some conceptualizations advocate that the distress caused by interparental conflict disrupts parenting practices (e.g., effective discipline) that require parents' psychological responsiveness. Moreover, the presence of both coparenting overt and covert conflict may exert an indirect effect on inconsistent parenting via parental psychological maladjustment. More concretely, parents with poorer overall adjustment may exhibit a lower sense of parenting efficacy and a greater likelihood to make stable and internal parent-centered causal attributions of their children's adjustment problems, which in turn may precipitate inconsistent and ineffective parenting practices [58].

Surprisingly, time since divorce of HCC group did not differ from the other two groups, as was found by Amato's study [31]. This fact, associated with the higher proportion of litigious divorces in the HCC profile, may suggest that this is a small group of parents characterized by persistent overt and covert conflict coparenting, as documented in previous longitudinal studies [26]. Due to the cross-sectional design of our study, these interpretations are speculative and should be read with caution.

As predicted by our third hypothesis, a post-divorce CC profile was associated with low levels of internalizing problems, compared to both HCC and UC profiles, and low levels of externalizing problems, compared to an UC

profile. By showing that the cooperative coparenting profile was significantly associated with lower levels of children's adjustment problems, our study does not corroborate Amato's et al. [31] conclusions. That study showed that the cooperative coparenting pattern is modestly associated with children's positive outcomes, since the authors only found a significant link between cooperative coparenting and lower levels of behavior problems among six adjustment indicators examined. However, in contrast to Amato's et al. [31] interpretation of their data, our findings are consistent with coparenting conceptual frameworks [14, 16] and with family risk-resilience perspectives [59]. In addition, considering the elevated levels of parental psychological well-being, the low scores of inconsistent parenting, the highest level of family functioning and the low levels of negative affect reported by the parents of CC group, it is plausible to hypothesize that the cooperation between the coparenting dyads may be a cumulative protector mechanism inside the family system.

Our study revealed two intriguing findings. First, the associations between UC profile and parental well-being, parenting and children's psychological problems. While UC profile reported similar levels of parental well-being and inconsistent parenting to that of CC profile (but statistically lower than those of the HCC profile), the UC profile also had similar levels of children's psychological problems as the HCC profile (but significantly higher than the CC profile). This finding may be partially explained by the differential effect of distinct types of interparental conflict on specific parenting dimensions. For example, overt destructive interparental conflict has been associated more strictly with inconsistent parenting [53], whereas undermining interparental conflict has been linked to other dimensions of parenting not measured in this study, such as parental psychological control [60]. Therefore, it is plausible to hypothesize that the UC profile is not associated with inconsistent parenting, but can be associated with other parenting and parental variables that, in turn, exert negative effect on children's psychological problems. Future research should explore the relationship between coparenting profiles and multiple family variables.

A second intriguing finding was that parents of the HCC group did not differ from the CC group in children's internalizing symptoms. Although we expected that the CC group would show lower levels of internalizing symptoms than the two other groups, the lack of differences between groups is corroborated by the previous research on coparenting in non-divorced families. Such research has found that overt conflict is primarily associated with externalizing problems and marginally linked to internalizing symptoms [10]. Literature on interparental relationships in general has highlighted that the association between interparental conflict and internalizing symptoms may be (partially)

mediated by parents' adjustment and parenting [61] and moderated by contextual variables [62] and children's characteristics, such as children's temperament [63], emotional insecurity appraisals [64] and psychophysiological emotional regulation [65]. For example, a previous study suggested that destructive interparental conflict was associated with high interaction and low problems with peers only for those children with high effortful control [63]. Therefore, it is not surprising that the CC group only differed in internalizing symptoms from UC group, since undermining strategies between parents have been strongly associated with children's internalizing problems [54].

Some limitations should be considered in interpreting the results of the current research. First, our findings are based on a highly-educated community sample. We should be aware that coparenting profiles and their correlates reported in this study might be different in highly-litigious or clinical samples. Second, we did not control whether participants were mothers and fathers of the same child. However, the potential bias of having both parents of the same child as participants might be diluted by the large national sample used in this study. Third, as a common limitation to all research with a cross-sectional design, the current study does not examine a longitudinal chain linking coparenting profiles and children's adjustment outcomes. Fourth, coparenting was assessed by a self-report questionnaire. Although CRS-Brief has exhibited a very good reliability and construct validity [38], additional observational methods could have contributed to a higher accuracy of coparenting clusters and also decreased possible shared method variance. Fifth, only two dimensions of parenting were assessed in the current study. Finally, children's psychological adjustment problems were only measured by parent report. Since past research has only demonstrated a moderate inter-rater reliability on the reports of children's psychopathology [66], our findings could be more accurate if a multi-informant approach had been implemented.

In conclusion, our study was, to our knowledge, the first in literature to examine the association between post-divorce coparenting profiles and parental psychological well-being, parenting and children's adjustment, using psychometric well-validated measures. Our results highlight a positive significant association between post-divorce cooperative coparenting and children's positive psychological adjustment. These findings suggest that future research should explore structural relationships between coparenting and children's outcomes by testing causal chains through which successful coparenting protects and promotes positive children's adjustment trajectories. Finally, this study supports the clinical and research utility of Feinberg's ecological model of coparenting when extended to understanding family relations and children's adjustment after marital dissolution.

Summary

Theoretically guided by the Feinberg's ecological model of coparenting, the current study evaluated whether post-divorce coparenting profiles could be found based on coparenting components proposed by Feinberg's model. This study also examine differences between these coparenting groups in parents' psychological adjustment, parenting, family functioning, and children's psychological adjustment. The sample was composed by 314 divorced parents. Parents were assessed in terms of subjective well-being, coparenting, positive parenting, inconsistent parenting, family functioning, and children's psychological adjustment. Three post-divorce coparenting profiles were found: cooperative coparenting, high-conflict coparenting, and undermining coparenting. Results showed that parents of the high-conflict coparenting profile showed lower satisfaction with life and higher divorce-related distress and inconsistent parenting, when compared with the other two profiles. Parents in the undermining coparenting profile identified more internalizing problems in their children when compared with parents in the cooperative coparenting profile. When compared with the other two profiles, parents in the cooperative coparenting profile showed higher family functioning and reported lower externalizing problems in their children. Finally, results suggested that parents of the cooperative coparenting group also identify lower internalizing problems in their children, when compared with parents of the undermining coparenting profile. Future research recommendations are also discussed.

Appendix: Confirmatory factor analyses of the CRS-Brief [38]

CRS-Brief is a recent published measure. Six of the seven subscales that comprised the American version of CRS-Brief were developed to measure the four coparenting components of Feinberg's model [14]: (1) Coparenting support/undermining component was assessed by three subscales (Coparenting Support, Endorsement of Partner's Parenting, and Coparenting Undermining); (2) The management of family relationships component was represented by one subscale (Exposure to Conflict); (3) Division of childrearing work component was examined by one subscale (Division of Labor); (4) Coparenting agreement component was assessed with one subscale (Coparenting Agreement). An additional subscale labeled as *coparenting closeness* was created to examine "the degree to which coparenting enhanced intimacy and strengthened the couple's relationship" [36, p. 7].

As no Portuguese version of the CRS-Brief is available, items were translated for the current research, using international standard procedures for psychological measures adaptation [43]. As no construct validity study was available in the Portuguese language, a CFA using a maximum likelihood method was conducted to test construct validity of the CRS-Brief in the current sample. Six subscales of the original CRS-Brief were included in the initial CFA. Coparenting closeness subscale was not included in the CFA since this subscale does not measure a coparenting component and is not applicable to divorced coparents.

Initial CFA revealed an adequate fit, CFI = .95, TLI = .92, RMSEA = .08. However, considering the high intercorrelations between Coparenting Agreement, Coparenting Support, and Endorsement Partner's Parenting subscales (from .60 to .93), two additional concurrent confirmatory models were tested.

Model 2: Items of Coparenting Agreement, Coparenting Support, and Endorsement of Partner's Parenting subscales were comprised into a single first-order factor in the confirmatory model.

Model 3: A second-order latent factor was created, where these three subscales were conceptualized as inter-correlated first-order factors.

Model 2 revealed poor fit, CFI = .89, TLI = .84, RMSEA = .12. However, Model 3 revealed an excellent fit, CFI = .98, TLI = .97, RMSEA = .04. Comparing Model 3 fit results with those obtained by the original model of the CRS-Brief, Model 3 was found as having a better fit. Therefore, we decided to combine the Coparenting Agreement, Coparenting Support and Endorsement of Partner's Parenting subscales into the same dimension labeled as Coparenting Agreement/support. Based on these CFA results, this Portuguese version of the CRS-Brief is comprised by four subscales: Coparenting agreement/support, Coparenting Undermining, Division of Labor, and Exposure to Conflict. These CRS-Brief's subscales were used in the further analyses.

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