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ORIGINAL ARTICLE



Keeping your coparent in mind: A longitudinal investigation of mindfulness in the family system

Karissa DiMarzio¹ | Virginia Peisch² | Juliana Acosta¹ | Chelsea Dale¹ | Jennifer Gutierrez¹ | Justin Parent¹

Correspondence

Justin Parent, Center for Children and Families, Florida International University, 11200 S.W. 8th Street, AHC1 CCF, Miami, FL 33199, USA.

Email: jparent@fiu.edu

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Abstract

Recent studies have increasingly focused on mindfulness as it relates to interpersonal processes. In particular, cross-sectional research has shown that parents' dispositional mindfulness is associated with increased mindful parenting and coparenting, as well as improved coparenting relationship quality. The current study replicates and extends such work, representing the first longitudinal investigation of mindful coparenting. A sample of 449 parents (60% mothers) of children between the ages of 3 and 17 years were recruited online through Amazon's Mechanical Turk (MTurk) as part of a larger study on the assessment of parenting. Parents reported on their dispositional mindfulness, mindful coparenting, and coparenting relationship quality at three time points across an 8-month period. Results from a cross-lagged panel model using maximum likelihood estimation suggested that higher levels of parental mindfulness at baseline were related with higher levels of mindful coparenting at 4 months, which, in turn, were related to higher quality coparenting relationship at 8 months. Support for this model was found for both mothers and fathers and across all examined child age groups (i.e., early childhood, middle childhood, and adolescence), highlighting the robust nature of these effects. Overall, findings suggest that

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¹Center for Children and Families, Florida International University, Miami, Florida, USA

²Department of Psychological Science, University of Vermont, Burlington, Vermont, USA

increasing mindfulness at an individual level can promote meaningful change within a family system, specifically through improvements in coparenting and parent-child interactions.

KEYWORDS

Coparenting, Mindful coparenting, Mindfulness

INTRODUCTION

Mindfulness is the intentional, non-judgmental awareness of one's moment-by-moment experiences (Kabat-Zinn, 2003). According to Kabat-Zinn (2003), a sense of well-being can be achieved when one recognizes that a current experience will pass and accepts the corresponding feelings and thoughts within that moment. An impressive body of knowledge documents various positive outcomes that are associated with higher levels of mindfulness, including better coping and emotion regulation abilities (Brown & Ryan, 2003; Brown et al., 2007; Keng et al., 2011). Further, mindfulness-based interventions have been shown to reduce anxiety, depression, and stress (Khoury et al., 2013). In fact, mindfulness-based interventions have comparable effectiveness to well-established evidence-based treatments, demonstrating superior effects to no treatment and specific active controls (see Goldberg et al., 2018 for a systematic review and meta-analysis). As such, the field has seen considerable growth in the interest in mindfulness research over the last few decades, particularly in how mindfulness practices might be applied to other notable domains of functioning.

Mindfulness in parenting

Mindfulness is also believed to impact interpersonal interactions, including those that occur within the family system. Specifically, Duncan et al. (2009) outline a model of mindful parenting that includes five dimensions along which parents can act in a mindful manner (i.e., listening, non-judgmental acceptance, emotional awareness, self-regulation, and compassion). For example, parents can remain non-judgmental and aware of their emotional experiences, as well as those of their child. By doing so, parents are more likely to make conscious decisions on how to manage difficult interactions instead of engaging in reactive behaviors that could undermine parenting practices (Duncan et al., 2009). In a similar vein, Dumas' (2005) mindfulness-based model of parent training outlines how parental mindfulness can shape parenting behaviors, reduce automaticity, and promote healthy parent—child interactions. According to his model, parents with higher levels of mindfulness will be less likely to follow automatic—and potentially maladaptive—parenting practices, referred to as "automatized transactional procedures" (e.g., habitual interactions), and instead respond with more awareness and sensitivity in their interactions with children (Dumas, 2005).

Mindfulness in coparenting interactions

The view that an individual's dispositional mindfulness might influence his or her interpersonal relationships is consistent with family systems theory (Cox & Paley, 1997; Minuchin, 1985). Family systems theory suggests that individual family members fundamentally influence one another, as they are all part of a "complex, integrated whole" (Minuchin, 1988, p.

8). Accordingly, it is conceivable that an individual's dispositional mindfulness could exert an effect on dyadic relationships that occur within the system. For example, coparenting, which describes the joint caretaking of a child (Feinberg, 2003), could be influenced by each parent's dispositional mindfulness. The concept of mindful coparenting arose from this idea and involves parents maintaining present-moment awareness during coparenting interactions, demonstrating non-judgmental receptivity to the articulation of thoughts and emotions by their coparent, and regulating reactivity to their coparent's behavior (Parent, McKee, Anton, et al., 2016). Evaluating this concept from a family systems lens, an individual's dispositional mindfulness could impact the coparenting dynamic by promoting less negative reactivity and more mindful interactions, thus enhancing the quality of the relationship. In fact, a budding area of research has begun to yield support for this theoretical model.

In the broader literature base, mindfulness has been associated with couples' relationship quality and satisfaction (see McGill et al., 2016 for a meta-analysis). Prior work has shed light upon underlying processes by documenting that increases in dispositional mindfulness improve couples' levels of relationship satisfaction, autonomy, relatedness, and closeness (Carson et al., 2004, 2007). More specifically, the positive associations between mindfulness and marital outcomes (e.g., satisfaction, autonomy) appear to be at least partially mediated by "partners' sense that they were participating in exciting self-expanding activities together" (Carson et al., 2007, p. 517). Other potential mechanisms posed in the literature have been individuals' ability to respond more constructively to relationship stress and to engage in higher quality communication with partners (Barnes et al., 2007). To date, few studies have explored the influence of mindful coparenting on coparenting relationship quality; however, what does exist provides similar support, with a significant positive cross-sectional association being observed between the two constructs (Parent et al., 2014; Parent, McKee, Anton, et al., 2016). Of note, cross-sectional data also suggests that the strength of this association is similar across child developmental stages (Parent, McKee, Anton, et al., 2016). If such a finding were to hold up in prospective examinations, it would speak to the robust effect of mindful coparenting on couples' relationship quality, both across child development and regardless of the unique challenges associated with each developmental stage. Overall, the studies described above provide a viable foundation on which this research can continue to be built, as previous findings support the idea that mindfulness can have significant implications for relationship functioning and quality.

Despite the benefits of increasing mindfulness in the family system, there is evidence that mothers and fathers differ with regard to both their practice of mindful parenting and their receptivity to mindfulness-based interventions. Specifically, mothers appear to exhibit higher levels of mindful parenting compared to fathers (Gouveia et al., 2016; Medeiros et al., 2016). Research has shown that women, on average, tend to be more empathetic than men, a difference that is not solely explained by cultural influences (Christov-Moore et al., 2014) and that might contribute to why women are more likely to engage in mindful parenting practices with their children. Further, Moreira and Canavarro (2015) found that fathers report higher levels of attachment-related avoidance as well as lower abilities to recognize and respond to the needs of their children, potentially adding to this explanation. However, when fathers are able to engage in mindful parenting, they are less likely to exhibit non-supportive practices of emotion socialization (e.g., dismissal, criticism, and punishment) with their children—an association found to be, in fact, stronger for fathers than for mothers over time (McKee et al., 2018). Given these findings, it is not surprising that research has observed more pronounced treatment effects for fathers participating in mindfulness-based interventions compared to mothers (Coatsworth et al., 2015). Considering the previously highlighted relationship between mindful parenting and improved parenting behaviors, these gender differences have important implications for youth outcomes and overall family functioning, thus warranting further exploration.

The current study

Although the cited work has advanced our knowledge in important ways, these studies include several limitations. For example, a majority of research to date has examined mindfulness as it relates to one domain of functioning (e.g., parenting behaviors, coparent and relationship quality). In accordance with family systems theory, it is important to consider mindfulness as it relates to multiple domains in order to paint a comprehensive picture of the extent and nature of its impact. Further, many of the prior studies used cross-sectional designs, thereby limiting the degree to which causal inferences can be made. The present study sought to fill existing knowledge gaps by replicating a prior cross-sectional study by Parent, McKee, Anton, et al. (2016). Specifically, the current study examined the prospective association between parental dispositional mindfulness, mindful coparenting, and coparenting relationship quality across three waves. The primary aim of this study was to test this conceptual model, thereby shedding light onto underlying mechanisms. We hypothesized that our results would replicate findings of the cross-sectional investigation, in that parent dispositional mindfulness would be indirectly related to coparenting relationship quality through mindful coparenting. A secondary aim of the current study was to examine moderators of the conceptual model to ascertain for whom the associations are strongest. Given that prior research suggests significant gender differences in mindful parenting, parent gender was included in this study as a potential moderator and we hypothesized larger mediation effects for fathers compared to mothers. Similarly, and based on research indicating that child age shapes parenting behaviors (Locke & Prinz, 2002), child age was also tested as a potential moderator. Previous cross-sectional results (Parent, McKee, Anton, et al., 2016) support the impact of mindful coparenting on coparenting relationship quality being similar across child developmental stages. Thus, we hypothesized that child age would not moderate the indirect effect of parent mindfulness on coparenting relationship quality.

METHOD

Overview

All study procedures were approved by a university Institutional Review Board. Parents were recruited online through Amazon's Mechanical Turk (MTurk) as part of a larger study on the assessment of parenting. MTurk is currently the dominant crowdsourcing application in the social sciences (Chandler et al., 2014), and prior research has demonstrated that data obtained via crowdsourcing methods are as reliable as those obtained through more traditional data collection methods for adult populations (Buhrmester et al., 2011; Casler et al., 2013; Paolacci & Chandler, 2014; Shapiro et al., 2013), as well as specifically for youth psychopathology research (Parent et al., 2017; Schleider & Weisz, 2015). On MTurk, parents responded to a study on parenting that was listed separately for three age groups to ensure roughly equal sample sizes in these three age ranges: early childhood (3–7 years old), middle childhood (8–12 years old), and adolescence (13–17 years old).

Participants

Data from 449 parents of children between the ages of 3 and 17 were included in the current study. Overall, parents were on average 36.40 years old (SD = 7.91) and approximately 60% were mothers. Participants reported the following racial/ethnic identities: White (80.2%), Black (9.8%), Hispanic (4.9%), Asian, (3.8), and Other (1.3%). Parents' education level ranged

from not completing high school (0.4%), obtaining a H.S. degree or GED (12.7%), attending some college (29.4%), earning a college degree (41.6%), and attending at least some graduate school (15.8%). A majority of parents were employed full-time (62.1%) with 18% reporting employment at a part-time level, and 19.8% reporting unemployment. Reported family income was 19.8% for <\$30,000 per year, 28.3% between \$30,000 and \$50,000, 18.7% between \$50,000 and \$70,000, 18.9% between \$70,000 and \$100,000, and 14.3% at least \$100,000. Parent marital status was organized into three categories with 6.3% reporting being single, 73.9% being married, and 19.8% being in a cohabiting relationship. Approximately half of all youth were boys (55.5%). Overall retention, as defined by completing an assessment at any wave after the 2-week follow-up, was 86.4%.

Procedure

Parents consented online prior to beginning the survey and were compensated \$4.00, \$2.00, \$4.00, \$4.00, and \$8.00 for completing the baseline, two-week, 4-, 8-, and 12-month surveys, respectively. To participate, respondents needed to be residents of the United States and have an approval rating of 95% on MTurk. A computer algorithm randomly selected one child for families who had multiple children in the target age range. All measures asked about parenting specific to the selected child and his/her behavior. Ten attention check items were placed throughout the survey. Participants were not included in the study if they had more than one incorrect response to these ten items in order to ensure that responses were not random or automated. Further, demographic questions were repeated across waves and participants were excluded if they provided more than one inconsistent response to the demographic questions. Data analyzed in the present study were from the baseline (Wave 1), 4-month (Wave 2), and 8-month (Wave 3) assessments. Attrition was approximately 31% at the 4-month follow-up and 39% at the 8-month follow-up.

Measures

Omega coefficients are provided below for each measure at the major wave of interest (i.e., parental mindfulness at Wave 1, mindful coparenting at Wave 2, coparenting relationship quality at Wave 3). For additional information on the psychometric properties of the assessments, see Parent, McKee, Anton, et al. (2016) and cross-sectional investigation.

Demographic information

Parents responded to demographic questions about themselves (e.g., parental age, race/ethnicity, education), their families (e.g., annual household income, marital status), and the target child's demographic information (e.g., gender, age).

Parent dispositional mindfulness

The 15-item Mindfulness Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) assesses global and daily experiences of mindfulness, including respondents' "...awareness of and attention to actions, interpersonal communication, thoughts, emotions, and physical states" (Brown & Ryan, 2003, p. 825). Parents indicated how frequently they had the experience described in each statement (e.g., "I find it difficult to stay focused on what's happening

in the present"). Statements were scored on a 6-point Likert scale ($1 = almost \ always$; 6 = $almost \ never$). Higher scores reflected higher levels of mindfulness. The MAAS has demonstrated good internal consistency ($\alpha = 0.80-0.90$) as well as convergent and discriminant validity (Brown & Ryan, 2003). The omega coefficient at baseline was 0.92.

Mindful coparenting

The Interpersonal Mindfulness in Coparenting Scale (IMCS; Parent, McKee, Anton, et al., 2016) consists of 8 items reflecting parents' ability to maintain: (1) awareness and present-centered attention during coparenting interactions (e.g., reverse-coded: "I rush through activities with my coparent without being really attentive to him/her"); (2) non-judgmental receptivity to their coparent's articulation of thoughts and displays of emotion (e.g., "I listen carefully to my coparent's ideas, even when I disagree with them"); and (3) the ability to regulate their reactivity to their coparent's behavior (e.g., "When I'm upset with my coparent, I notice how I am feeling before I take action"). Parents responded to each item using a 5-point Likert scale (1 = never true; 5 = always true) with higher scores reflecting higher levels of mindful coparenting. The IMCS was adapted from the Interpersonal Mindfulness in Parenting Scale (Duncan, 2007) for use in the original study, which demonstrated the scale's acceptable fit and reliability (Parent, McKee, Anton, et al., 2016). Reliability for the IMCS at the 4-month follow-up was 0.82.

Coparenting relationship quality

Parents completed the brief version of the Coparenting Relationship Scale (CRS; Feinberg et al., 2012). The CRS consists of 14 items examining five domains of coparenting relationship quality: agreement (e.g., "My partner and I have the same goals for our child"), support/undermining (e.g., "My partner appreciates how hard I work at being a good parent," "My partner tries to show that she or he is better than me at caring for our child"), conflict in front of the child (e.g., "One or both of you say cruel or hurtful things to each other in front of the child"), division of labor (e.g., "My partner likes to play with our child and then leave dirty work to me"), and closeness (e.g., "My relationship with my partner is stronger now than before we had a child"; Feinberg, 2003). The brief CRS is an excellent approximation of the full CRS and has demonstrated good reliability (Feinberg et al., 2012). Items in the brief CRS were adjusted to refer to a coparent (rather than partner) to allow the measure to be applicable to parents who did not identify their romantic partner as their primary coparent. The omega coefficient at the 8-month follow-up was 0.93.

Data analytic plan

A longitudinal path analysis was conducted to evaluate prospective associations in a cross-lagged panel model (CLPM) in which all possible longitudinal paths between parental mindfulness, mindful coparenting, and coparenting relationship quality were estimated. Both the mediator and outcome variable were accounted for at baseline to strengthen interpretations from the analyses, which were conducted using Mplus 8.0 software (Muthen & Muthen, 2010). Any potential violations to the assumptions of regression were addressed using maximum likelihood estimation with robust standard errors and bias-corrected 95% confidence intervals based on 5000 bootstrapped samples. The fit statistics employed to evaluate model fit included the following: Chi-square, χ^2 : p > .05 excellent, Comparative Fit Index (CFI; >0.90 acceptable,

>0.95 excellent), Standardized Root Mean Square Residual (SRMR; <0.08 acceptable, <0.05 excellent), and Root Mean Square Error of Approximation (RMSEA; <0.08 acceptable, <0.05 excellent; Hu & Bentler, 1999). The mechanism of missingness was treated as missing at random, and full information maximum likelihood estimation techniques were used to include all available data.

Parent, McKee, Anton, et al. (2016) evaluated several demographic variables as covariates in their cross-sectional study (including parent age, parent education level, parent race, youth gender), but found only parent gender and marital status to be significant. As such, marital status (0 = single, 1 = two-parent) was selected for inclusion as a covariate in the current study. Family income was also included as a covariate based on research highlighting how financial stress influences couples' relationship quality and satisfaction (Falconier & Epstein, 2011; Ross et al., 2017) – all factors that might, in turn, impact couples' abilities to remain mindful during coparenting interactions. Additionally, a multiple-group path analysis was conducted to determine the moderating effect of youth developmental stage and parent gender on the indirect association between parent dispositional mindfulness and coparenting relationship quality. Testing for cross-group invariance involved comparing a model with paths constrained to be invariant across groups to one where paths were freely estimated for each group. The use of the MLR estimator required the use of a scaled chi-square difference test (Satorra, 2000) for making comparisons among nested models.

RESULTS

Descriptive statistics and bivariate correlations are presented in Table 1. Standardized estimates for the observed effects in the CLPM model are provided in Table 2. Overall, the model demonstrated excellent fit, χ^2 (6, N=449) = 8.37, p=0.21, RMSEA = 0.03, 90% CI [0.00, 0.07], CFI = 1.00, SRMR = 0.01. As shown in Figure 1, findings indicate that higher levels of parent dispositional mindfulness at Wave 1 predicted higher levels of mindfulness in coparenting at Wave 2, $\beta=0.15$, 95% CI [0.02, 0.23], p=0.004, which predicted higher levels of coparenting relationship quality at Wave 3, $\beta=0.13$, 95% CI [0.00, 0.22], p=0.01. The indirect effect of parent dispositional mindfulness on coparenting relationship quality through mindful coparenting was marginally significant, $\beta=0.02$, 95% CI [-0.01, 0.04], p=0.057. Although not included in the primary conceptual model, the CLPM revealed that higher coparenting relationship quality at Wave 1 predicted higher levels of mindful coparenting at Wave 2. Lastly, of the two covariates included in the model, only the relationship between family income and parent dispositional mindfulness at Wave 2 was statistically significant (see Table 2).

Next, multiple-group path models were tested to determine whether differences in the structural parameters between groups were statistically significant. Contrary to hypotheses, all models that fixed a, b, and c' mediation paths to be equal across mothers and fathers resulted in equivalent model fit to a freely estimated across groups model, $\Delta \chi^2$ (48) = 43.95, p = .64. Similarly, though consistent with hypotheses, all models that fixed pathways to be equal across parents of children at different developmental stages (i.e., early childhood, ages 3–8; middle childhood, ages 8–12; adolescence, ages 13–17) resulted in equivalent model fit, $\Delta \chi^2$ (96) = 90.76, p = 0.63. In addition, all prospective associations were equivalent for mothers and fathers, as well as parents of children across all three developmental stages. Thus, no support for moderation was found. Overall, the CLPM supported the proposed conceptual model and extended results to show how mindful coparenting and coparenting relationship quality have reciprocal longitudinal associations.

TABLE 1 Means, SDs, and correlations for model variables

	M(SD)	1	2	3	4	2	9	7	8	6	10	11
(1) Coparenting Quality W3	70.81 (11.89)	1										
(2) Mindful Coparenting W3	26.82 (4.75)	0.50**	1									
(3) Parental Mindfulness W3	69.05 (13.44)	0.41**	0.42**	1								
(4) Coparenting Quality W2	70.69 (11.70)	0.74**	0.49**	0.38**	1							
(5) Mindful Coparenting W2	26.76 (4.42)	0.49**	0.73**	0.40**	0.52**	-						
(6) Parental Mindfulness W2	68.11 (13.47)	0.32**	0.39**	0.82**	0.33**	0.42**	1					
(7) Coparenting Quality W1	71.05 (11.69)	**69.0	0.37**	0.31**	0.73**	0.44**	0.31**	_				
(8) Mindful Coparenting W1	30.03 (4.96)	0.46**	0.70**	0.45**	0.49**	0.71**	0.40**	0.52**	1			
(9) Parental Mindfulness W1	68.17 (12.88)	0.39**	0.41**	**9Ľ0	0.36**	0.44**	0.82**	0.36**	0.49**	1		
(10) Marital Status	1	0.17**	-0.01	-0.03	0.21**	0.01	90.0-	0.19**	0.12*	0.00	_	
(11) Income	I	0.16**	0.03	-0.09	0.12*	-0.02	-0.11*	0.16**	0.05	-0.02	0.21**	1

Note: W3 = 8-month follow-up, W2 = 4-month follow-up, W1 = baseline. $^*p \le 0.05, *^*p \le 0.01.$

TABLE 2 Complete effects from the final model

	Standardized estimate	95% CI	p
Direct effects			1
W1 Parental Mindfulness – W2 Mindful Coparenting	0.15	0.02, 0.23	0.004*
W1 Parental Mindfulness - W2 Coparenting Quality	0.06	-0.08, 0.14	0.27
W1 Mindful Coparenting - W2 Parental Mindfulness	-0.03	-0.15, 0.04	0.47
W1 Mindful Coparenting - W2 Coparenting Quality	0.15	0.00, 0.24	0.01*
W1 Coparenting Quality – W2 Parental Mindfulness	0.03	-0.08, 0.10	0.49
W1 Coparenting Quality - W2 Mindful Coparenting	0.11	-0.04, 0.20	0.06
W2 Parental Mindfulness – W3 Mindful Coparenting	0.07	-0.04, 0.15	0.11
W2 Parental Mindfulness - W3 Coparenting Quality	0.01	-0.13, 0.10	0.84
W2 Mindful Coparenting - W3 Parental Mindfulness	0.07	-0.04, 0.14	0.12
W2 Mindful Coparenting - W3 Coparenting Quality	0.13	0.00, 0.22	0.01*
W2 Coparenting Quality – W3 Parental Mindfulness	0.04	-0.07, 0.11	0.39
W2 Coparenting Quality - W3 Mindful Coparenting	0.05	-0.10, 0.14	0.38
Covariates			
W1 Family Income - W2 Parental Mindfulness	-0.07	-0.15, -0.02	0.03*
W1 Family Income - W3 Parental Mindfulness	-0.03	-0.12, 0.03	0.40
W1 Family Income - W2 Mindful Coparenting	-0.02	-0.11, 0.04	0.66
W1 Family Income - W3 Mindful Coparenting	0.02	-0.06, 0.08	0.46
W1 Family Income - W2 Coparenting Quality	0.01	-0.07, 0.06	0.75
W1 Family Income - W3 Coparenting Quality	0.07	-0.02, 0.13	0.06
W1 Marital Status – W2 Parental Mindfulness	-0.02	-0.09, 0.02	0.38
W1 Marital Status – W3 Parental Mindfulness	-0.03	-0.15, 0.04	0.48
W1 Marital Status - W2 Mindful Coparenting	-0.07	-0.18, 0.00	0.11
W1 Marital Status - W3 Mindful Coparenting	-0.09	-0.25, 0.01	0.14
W1 Marital Status - W2 Coparenting Quality	-0.01	-0.12, 0.05	0.76
W1 Marital Status - W3 Coparenting Quality	0.05	-0.05, 0.12	0.20
Stability paths			
W1 Parental Mindfulness – W2 Parental Mindfulness	0.82	0.75, 0.87	<0.001**
W1 Parental Mindfulness – W3 Parental Mindfulness	0.25	0.07, 0.36	<0.001**
W2 Parental Mindfulness – W3 Parental Mindfulness	0.58	0.39, 0.70	<0.001**
W1 Mindful Coparenting - W2 Mindful Coparenting	0.61	0.48, 0.69	<0.001**
W1 Mindful Coparenting - W3 Mindful Coparenting	0.32	0.15, 0.44	<0.001**
W2 Mindful Coparenting - W3 Mindful Coparenting	0.48	0.32, 0.59	<0.001**
W1 Coparenting Quality - W2 Coparenting Quality	0.64	0.50, 0.74	<0.001**
W1 Coparenting Quality - W3 Coparenting Quality	0.32	0.13, 0.44	<0.001**
W2 Coparenting Quality - W3 Coparenting Quality	0.40	0.18, 0.54	<0.001**

Note: W1 = Baseline, W2 = 4-month follow-up, W3 = 8-month follow-up; covariances among predictors were significant across waves but are not included.

DISCUSSION

Mindfulness is associated with various positive outcomes, such as increased well-being (Brown & Ryan, 2003; Keng et al., 2011) and relationship satisfaction between married (Burpee &

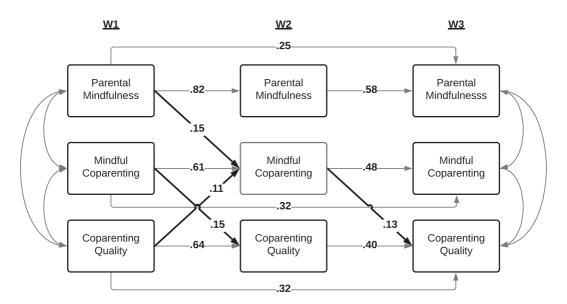


FIGURE 1 Final cross-lagged panel model. *Note*. Only statistically significant paths are depicted (p < 0.05). Covariance between all variables within W2 were included and were significant but are not depicted

Langer, 2005; Wachs & Cordova, 2007) and cohabiting couples (Parent et al., 2014), as well as more desirable parenting behaviors (Benn et al., 2012; Coatsworth et al., 2010, 2015). Despite this support, little is known about the mechanisms influencing these relationships. Expanding on prior cross-sectional work (Parent, McKee, Anton, et al., 2016), the current study examined the prospective association between dispositional mindfulness (i.e., global and daily experiences of mindfulness), mindful coparenting (i.e., present-centered attention, non-judgmental receptivity, and self-regulation during coparenting interactions), and coparenting relationship quality (i.e., agreement, support, and closeness in the relationship) across an 8-month period. By doing so, the study aimed to shed light onto underlying mechanisms and identify moderators to ascertain for whom the associations were strongest.

Overall, results largely replicated the prior cross-sectional study. Results supported our first hypothesis in that higher levels of parent dispositional mindfulness at Wave 1 were related to higher levels of mindful coparenting at Wave 2, which, in turn, were related to a higher quality coparenting relationship at Wave 3. In addition, the CLPM also extended current findings by highlighting a reciprocal longitudinal association between coparenting relationship quality and mindful coparenting. Specifically, findings suggest that higher coparenting relationship quality predicts greater use of mindful coparenting practices, which, in turn, further increases coparenting relationship quality. This association is in line with prior literature demonstrating how an individual's use of mindfulness practices within interpersonal relationships can improve relationship satisfaction and quality. Moreover, the finding also suggests that benefits of mindfulness at an interpersonal level can reinforce one's use of mindfulness practices over time.

Although fewer examinations of mindful coparenting exist, the broader literature on mindfulness may assist in conceptualizing how mindful coparenting can improve relationship quality. For example, mindfulness has been highlighted as a helpful tool in reducing parenting stress, which has been shown to increase relationship satisfaction among couples (Williams & Parra, 2019). Since mindful coparenting is characterized by improved emotional regulation and receptivity between partners, it is plausible that these benefits would lead to similar reductions in parenting stress and higher perceptions of relationship quality. Indeed, research shows that supportive coparenting significantly predicts coparenting relationship satisfaction (Durtschi et al.,

2016); however, more research is needed that is specific to the construct of *mindful* coparenting, as important distinctions can be made between the two constructs. Namely, supportive parenting entails aspects of respect and trust in one's partner, as well as mutual support and open communication. More importantly, however, supportive parenting emphasizes acts and perceptions of the coparenting relationship and process. For example, the supportive parenting scale used by Durtschi et al. (2016) asks parents to indicate how true each statement is of their coparent, including "She supports you in the way you want to raise (child)" and "You can trust (mother) to take good care of (child)." Conversely, mindful coparenting involves an individual's own experiences, particularly his or her present-centered awareness, reactivity, and receptivity to their coparent's thoughts and emotions during coparenting interactions. As such, future research is warranted to further our understanding of how mindfulness—both at an individual level and dyadic level—lends to improved functioning and relationship quality in the family system.

A secondary aim was to examine moderators to ascertain whether the association between constructs within the conceptual model differed as a function of child age and/or parent gender. We chose to evaluate the moderating effect of child age based on prior research indicating that the age of a child shapes caregivers' choice of parenting behaviors (Locke & Prinz, 2002). The current model found support across all three samples of youth (i.e., early childhood, middle childhood, and adolescence), indicating that longitudinal associations did not differ as a consequence of the unique challenges faced by parents of children at different developmental stages. This is consistent with findings from prior cross-sectional work (Parent, McKee, Anton, et al., 2016) and speaks to the robust influence of mindfulness on one's adaptive interactions within the family system. While existing coparenting programs have shown promise in improving coparents' well-being and relationship quality, these programs do not typically include components focused on promoting mindful coparenting interactions. As such, it may be worthwhile for future research endeavors to explore whether findings related to the moderating effect of child age hold up in experiential designs.par

In the case of parent gender, our results were not in line with our hypotheses, nor with prior empirical investigations. Research evaluating mindfulness-based interventions has observed gender differences in treatment uptake and efficacy. Gouveia et al. (2016) found that mothers were more likely to have already adopted or been utilizing a mindful parenting style and suggested that this may indicate that fathers have more to benefit from mindfulness-based programs. This is further supported by observations of stronger intervention effects for fathers (Coatsworth et al., 2015). Differences have also been observed in the relationship between mindful parenting and decreases in parents' use of unsupportive emotion socialization practices (e.g., minimization or punitive reactions), with a stronger association observed for fathers as compared to mothers (McKee et al., 2018). In this respect, it is possible that gender differences in mindfulness may be more specific to emotion-related aspects of parenting and coparenting.

Strengths and limitations

Results from the present study should be interpreted in the context of its strengths and limitations. Of note was the study's prospective data collection, which allowed for an examination of underlying processes. An examination of mechanisms helps inform prevention and intervention efforts. Specifically, the indirect association between parent dispositional mindfulness and coparenting relationship quality through mindful coparenting suggests that parental mindfulness could represent a promising way to affect positive change within the family system. Further, the present study included a large sample, thereby allowing for an examination of moderating variables. Relatedly, the consistency of our results across parent gender and child age speaks to the robust nature of the examined effects and highlights the potential benefits that parental mindfulness could have for child and adolescent well-being.

It is important to note; however, that findings from our study should be interpreted with caution as our sample was comprised of parents who largely identified as white and who had completed at least some college education. Future research should prioritize the recruitment of diverse samples to evaluate whether the observed relationships are generalizable to underrepresented populations. Racial and ethnic minorities, in particular, face unique stressors (e.g., racism, discrimination) that could pose significant challenges to their ability to remain mindful in coparenting interactions. Understanding how and to what degree these relationships differ across populations would help to inform not only *for* whom mindfulness-based interventions might be most beneficial, but *to* whom these interventions must be more widely and effortfully disseminated. Mindfulness-based interventions may be particularly promising in this context given the racial and ethnic disparities plaguing the mental health care system, as such interventions have been shown to be effective in a variety of settings, including those with limited resources (Parent et al., 2014; Parent & DiMarzio, 2021).

Another limitation of the current study is the collection of data via a single informant, thus increasing our susceptibility to common method biases. Future research should prioritize the collection of dyadic coparenting data, as this would help to strengthen confidence in the present findings and allow for the exploration of actor-partner effects. Examples of such methods include laboratory tasks, observations of coparenting interactions, or in-depth qualitative interviews with both parents. While the decision to examine constructs at the baseline, 4-, and 8-month time points provided the opportunity to better capture short-term changes occurring within the family system, it is unclear whether the observed associations would be maintained across longer intervals of time. One potential area for future exploration could be temporal differences across short- and long-term observations of mindfulness in the family system, as this information could have important clinical implications if found to be significant. In addition, readers should also be aware of the criticism surrounding the Mindfulness Attention Awareness Scale (MAAS), including its unidimensional assessment of mindful attention and awareness (see the Five-Factor Mindfulness Questionnaire for a multidimensional example; Baer et al., 2006) and the accuracy of self-reporting one's own attentional lapses (Grossman, 2011). Lastly, although our findings serve as important contributions to the nascent study of mindful coparenting, we are—as a consequence—limited in our ability to bolster these findings through a comparison of those from previous investigations.

Clinical implications

Despite the above limitations, findings of the current study have important clinical implications for working with couples and families. Most notably, our findings suggest that increasing mindfulness at an individual level can promote meaningful change within a family system, specifically through improvements in coparenting interactions and relationship quality. This presents another way in which clinicians can work with couples to improve outcomes, especially those in which one partner is less willing or able to engage in formal therapy than the other. However, it is important to note that there is some research that suggests the benefits of mindfulness may be exclusive to the "actor," with an individual's dispositional mindfulness being impactful to his or her own experience, but not necessarily impactful to his or her partner's experience (Barnes et al., 2007). As such, clinical results may vary according to the unique structure and challenges of each family.

In addition, an increasing body of work has evaluated the efficacy of coparenting programs in improving coparents' interactions and well-being. A recent systematic review and meta-analysis identified four primary strategies utilized in these programs: psychoeducation, skills training (e.g., mutual support, coping, communication), coparenting plans for the organization of tasks

and responsibilities, and group-based discussions (Nunes et al., 2020). Findings from the current study suggest there may be added benefits to incorporating mindfulness components in coparenting programs. This area holds particular promise for future research efforts given that current programs are reported as having only small effect sizes, suggesting there is substantial room for improvement (Nunes et al., 2020). In fact, findings from Gambrel and Piercy's (2015a, 2015b) more targeted Mindful Transition to Parenting Program demonstrated such support, with parents reporting improvements not only in their own level of mindfulness and sense of well-being, but also in their relationship with coparents. Lastly, previous research has shown that by increasing parental mindfulness, one can improve child behavioral health outcomes (Bögels et al., 2014; Coatsworth et al., 2018). Given that children's behavioral difficulties can contribute to parenting stress (Williams & Parra, 2019) and to coparents' relationship satisfaction (Mark & Pike, 2017), the clinical significance of the current findings is two-fold.

CONCLUSION

Overall, our findings highlight mindfulness as an influential mechanism in promoting positive coparenting interactions. As increasing attention is paid to mindfulness in the parent—child subsystem, it is important for researchers to also examine mindfulness in the context of other relationships within the family. In particular, the concept of mindful coparenting represents an area of study with promising implications for future work examining and treating families. These findings are especially important given evidence that supports a spillover effect across subsystems, highlighting the way in which even individual members can impact the overall functioning of a family system. In fact, there is ample empirical support for the significant roles that both parenting practices and coparent relationship quality play in children's development. By furthering our understanding of the underlying mechanisms that contribute to improvements in these areas, we are better able to identify promising targets for intervention.

ORCID

Karissa DiMarzio https://orcid.org/0000-0002-5626-8351

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