

**ARTICLE**

# Effects of an asynchronous, fully web-based parenting-after-divorce program to reduce interparental conflict, increase quality of parenting and reduce children's post-divorce behavior problems

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## Abstract

This study is a randomized controlled trial of an asynchronous, fully web-based program for divorced and separated parents, the electronic New Beginnings Program (eNBP). This program is an adaptation of a group, in-person program for divorced parents, the New Beginnings Program (NBP), which has been shown in randomized trials to reduce a wide range of offspring problems and improve a wide range of competencies up to 15 years after participation. The 10-module, 5-h program uses evidence-based, highly interactive strategies to teach skills designed to strengthen parenting after divorce and reduce interparental conflict. Participants were 131 parents (63% mothers) and 102 adolescent offspring. Parents were randomly assigned to the eNBP or a wait-list control condition. Parents and their children completed pre- and post-tests. Analyses showed that at post-test, parents and children in the eNBP reported significantly higher parent-child relationship quality, more effective discipline, lower interparental conflict and lower child mental health problems than did those in the wait-list control condition. These are the strongest findings in the literature on the effects of web-based programs to reduce interparental conflict, strengthen positive parenting and

reduce children's post-divorce mental health problems. Given that parental divorce has significant individual and societal costs, widespread implementation of this program could have significant public health implications.

#### KEYWORDS

Child Mental Health Problems, Improving Post-divorce Parenting, Parent Education for Divorced/Separated Families, Prevention programs for Divorced/Separated Families, Reducing Post-divorce Interparental Conflict

#### Key points for the family court community

- A fully web-based parenting-after-divorce program reduced interparental conflict, increased quality of parenting and reduced children's post-divorce behavior problems as reported by both parents and children.
- Web-based programs to improve parenting can be a cost-effective approach to promote children's post-divorce adjustment.
- Widespread implementation of easily accessible, web-based parenting-after-divorce programs can significantly reduce the negative impact of divorce on children's outcomes.

## INTRODUCTION

This paper describes the evaluation of a randomized controlled trial of an asynchronous, fully web-based parenting-after-divorce/separation program, the eNew Beginnings Program (eNBP). The development and evaluation of web-based programs advance the goal of making evidence-based parent education programs widely accessible (e.g., Salem et al., 2013; Schramm & Becher, 2020). Below, we briefly review data on the prevalence and effects of parental divorce. Next, we discuss the research on group-based parenting-after-divorce programs and the limited research on web-based programs for divorced/separated parents. Then, we discuss how the current study addresses gaps in research on web-based parenting programs for divorced/separated families. Next, we describe the New Beginnings Program (NBP), the program on which the eNBP was based, and the current study.

Parental divorce or separation is the second most prevalent adverse childhood event (Sacks et al., 2014). About 1 million children have experienced parental divorce every year since the 1970's (Kreider & Ellis, 2011) and many more children experience the separation of parents who never married. Although most children do *not* experience significant problems after the divorce, this transition increases their risk of experiencing a wide range of problems. They have greater internalizing (e.g., depression) and externalizing (e.g., aggression) problems (e.g., Weaver & Schofield, 2015), substance use problems (e.g., Jackson et al., 2016), physical health problems (e.g., Thuen et al., 2015) and academic difficulties (e.g., Amato & Anthony, 2014) than their counterparts in married families. One of the very few examinations of a national cohort to follow children from birth to adulthood found that the problems associated with parental divorce continue into adulthood for a sizeable minority and that differences between

offspring in married versus divorced families widen from childhood to adulthood (Cherlin et al., 1998). Parental divorce is associated with higher rates of mental health and substance use problems (e.g., Auersperg et al., 2019), physical health problems (e.g., Monnat & Chandler, 2015) and earlier mortality (e.g., Larson & Halfon, 2013) in adulthood. It is also associated with lower educational attainment (e.g., Bernardi & Radl, 2014) and higher rates of divorce (Diekmann & Schmidheiny, 2013).

Several group-based parenting-focused programs have been rigorously evaluated and shown to have meaningful short-term and long-term effects to reduce children's post-divorce problems (e.g., Forgatch & DeGarmo, 1999; Wolchik et al., 1993, 2000, 2002, 2013, 2021). However, these programs have not been widely adopted by family courts. Based on our work with an advisory board that consisted of three judges, four professionals with extensive experience in court administration, and the Executive Director of an interdisciplinary national association of family court professionals (Daniels et al., 2008) as well as our experience delivering NBP in several jurisdictions, this lack of adoption appears to be due in part to their in-person, small-group format, which makes them costly and requires significant infrastructure, extensive training of leaders and ongoing technical assistance to deliver with sustained high fidelity and quality. Even when such group programs are free, only a small percentage of parents attend (Wolchik et al., 2009) due to barriers, such as work schedules, transportation problems and childcare needs (Axford et al., 2012). Adapting effective group programs into web-based programs, which would reduce these barriers and cost significantly less than in-person programs, could result in significant reductions in children's risk for post-divorce problems.

There is a growing literature on the effects of web-based parenting programs for other populations. Four meta-analyses of these programs have found significant effects on a wide range of both parent and child outcomes (Baumel et al., 2016; Nieuwboer et al., 2013; Spencer et al., 2020; Thongseiratch et al., 2020). For example, Spencer et al.'s (2020) meta-analysis, which included 28 studies and examined 15 outcomes, found significant effects for multiple outcomes, including increases in positive parenting and decreases in negative parenting, negative parent-child interactions, child behavior problems, child anxiety and parent depression.

Although most courts offer web-based parent education programs for divorced/separated parents (e.g., Bowers et al., 2014), to date, only two published studies have evaluated such programs using a randomized controlled design, the gold standard for scientific evaluation of program effectiveness. DeGarmo and Jones (2019) evaluated *Fathering Through Change*, a 10-session program for fathers that focused on discipline, positive involvement, monitoring, problem solving and skill encouragement. The program significantly decreased coercive parenting and marginally decreased fathers' report of a composite of child mental health problems and prosocial behavior. In the only other randomized controlled trial of a parenting program for separated or divorced families, Rudd et al. (2015) evaluated *Proud-to-Parent (PTP)*, which was designed to promote involvement of both parents and effective co-parenting in unmarried, separating parents. Using data from court records, Rudd and her colleagues examined the effects of PTP as well as a three-week waiting period between learning about paternity and a court hearing about child-related issues. There were mixed effects of PTP on legal issues depending on whether there was a delay between the program and the date of the court hearing. Parents who participated in PTP and had their hearing on the same day were more likely than those who had a waiting period to reach a full agreement on child-related issues. However, if parents were assigned the waiting period, they were less likely to appear for their hearing if they participated in the PTP. This evaluation did not assess program effects on children's exposure to conflict, quality of parenting or children's mental health problems.

The eNBP differs from these web-based programs in three important ways. First, it is the first program to target both interparental conflict and quality of post-divorce parenting, which are the two most strongly supported correlates of children's post-divorce mental health problems (e.g., Kelly & Emery, 2003), as well as child mental health problems. Second, the evaluation included reports from both parents and children. This is important because parent report may reflect social desirability bias in which parents present themselves in ways that are consistent with what they were told they should do in the program. Also, given theory and research showing that children's perceptions of interparental conflict play a central role in determining its effects on mental health problems (e.g., Cummings & Davies, 2002), children's perceptions of conflict are even more important to assess than parent's. Third, the eNBP uses theory-based motivational strategies that have

been effective in web-based programs for other populations and state-of-the-art, web-based strategies and mobile techniques to engage parents and promote both effective learning and use of the program skills.

## Basis for eNBP

*eNBP* is an asynchronous, fully web-based program that was based on the in-person, group-based NBP. It teaches all the skills in the 10-session NBP: skills to improve parent–child relationship quality, strategies to increase effective discipline and skills to decrease children's exposure to interparental conflict. The program targeted these post-divorce processes based on an extensive literature documenting concurrent and longitudinal relations between them and children's post-divorce adjustment (see Wolchik et al., 2007). Program-induced improvements in parent–child relationship quality and effective discipline and decreases in interparental conflict are theorized to decrease children's mental health problems. Three randomized controlled trials involving over 1,800 children found positive effects to strengthen parent–child relationship quality and effective discipline and reduce children's mental health problems (Sandler et al., 2018, 2020; Tein et al., 2018; Wolchik et al., 1993, 2000).

Two long-term follow-ups of the randomized trial of the NBP that included 240 families showed remarkable long-term effects. At the 6-year follow-up, when youth were in adolescence, the NBP reduced alcohol use, marijuana use, other drug use and polydrug use, number of sexual partners, prevalence of diagnosis of mental disorder in the past year, externalizing problems and internalizing problems and improved grades, self-esteem, and adaptive coping (Bonds McClain et al., 2010; Wolchik et al., 2007). The public health significance of these effects is illustrated by the program-induced decreases in serious problems: the NBP led to a 34% decrease in the prevalence of diagnosed mental disorder in the last year (23% control vs. 15% NBP) and a 61% decrease in the number of sexual partners in the past year (1.7 control vs. 0.65 NBP). Multiple studies have shown that the program-induced effects to improve parent–child relationship quality and effective discipline mediated its impact on children's outcomes (Tein et al., 2004; Wolchik et al., 2007; Zhou et al., 2008).

Fifteen years after the program, when offspring were young adults, the NBP reduced the incidence of internalizing disorders (e.g., major depression) and, for males, the number of substance use disorders and frequency of substance use problems (Wolchik et al., 2013). It also improved work, academic and peer competence (Wolchik et al., 2021). The public health significance of the benefits at this follow-up is illustrated by large effects to decrease number of days in jail and use of mental health services in the past year (Herman et al., 2015).

## Current study

This study is a randomized controlled trial of the *eNBP*'s effects on children's mental health problems as well as interparental conflict, parent–child relationship quality and effective discipline. We hypothesized that parents in the *eNBP* would have less interparental conflict and higher parent–child relationship quality and effective discipline than those in the wait-list control condition. We also expected the children whose parents were in the *eNBP* would have fewer internalizing problems and externalizing problems and higher prosocial skills than those with parents in the wait-list control condition.

## METHOD

### Participants

The sample consisted of 131 parents randomized to *eNBP* ( $N = 81$ ) or wait-list control condition ( $N = 50$ ) and 102 of their adolescent offspring. The sample consisted of 60.3% mothers/stepmothers ( $N = 79$ ), 37.4% fathers/

stepfathers ( $N = 49$ ), 2.3% other caregiver ( $N = 3$ ). Parents were recruited using Qualtrics, a leading-edge sample acquisition technology that partners with 20 online panel providers and recruits nationally. Initial sampling criteria were parent was divorced, separated but never married, divorcing, or separating; had one or more children aged 6 to 18; and spoke English. Parents who met these criteria were sent an email with information about the study and a web-based survey that assessed contact with child/ren, access to a computer with high-speed internet or a smart phone and demographics. Interested parents were provided additional information about the study and screened for eligibility by phone. To be eligible, parents had to be divorced, separated but never married, divorcing or separating; have at least one child between 6 and 18; be English speaking; spend at least 3 h/week or at least one overnight every other week with their child(ren); and have access to a computer with high-speed internet or a smart phone.

Of the parents, 95% ( $N = 125$ ) were divorced, 3% ( $N = 4$ ) were divorcing and 2% ( $N = 2$ ) did not complete this question. Seventy-eight percent were non-Hispanic White, 8% were Hispanic, and 14% were another race/ethnicity. Parent education was: 1% less than GED or high school diploma, 14% GED or high school diploma, 17% associate degree, 29% some college or vocational training and 39% bachelor's degree or higher. Income ranged from \$10,000–\$175,000 (Median = \$30,001–\$40,000). Parents were on average 41 years old ( $SD = 8$ ; range 25–59). Children averaged 13 years old ( $SD = 3$ ); 48% were female. If there were more than one child between age 6 and 18, one was randomly selected for parents to provide data about. Parents with children between ages 11 and 18 were asked to invite their children in this age range to participate in the assessments. This age range was selected because these children could reliably report on the measures. The 102 interviewed youth averaged 14.2 years old;  $SD = 2.2$ ; 49.5% were female.

## Procedures

Parents were sent a secure email that included a consent form. Offspring whose parents provided permission for participation in the assessments were sent a secure email with assent or consent forms. After the consent/assent forms were received by project staff, parents and youth were emailed separate web links to the pretest. Immediately after completion of the pretest, the family was randomly assigned (blocked by parent gender and ethnicity) to the eNBP or wait-list control condition. Parents in the eNBP condition were directed to a link to eNBP and instructed to complete the program over the next 10 weeks. Parents in the wait-list control condition were told that they would have access to the program in 12 weeks. Twelve weeks after assignment to condition, parents and children were sent links to the posttest. Of the parents, 95% completed the posttest; 89% of the youth completed the posttest. Parents received a \$50 electronic gift card for each assessment (15 min) and youth received a \$30 electronic gift card for each assessment (10 min).

## Measures

The timeframe of all measures was the past month.

### Interparental conflict

Parents and children completed the 15-item frequency and intensity subscales of the Children's Report of Interparental Conflict Scale (Grych et al., 1992); e.g., "When you and [ex-partner's name] argued, you yelled a lot";  $\alpha = 0.91(T1)/0.89(T2)$  parent report,  $0.91(T1)/0.89(T2)$  child report). This measure has adequate reliability and validity (Grych et al., 1992). Children completed the 7-item Caught in the Middle Scale (Buchanan et al., 1991; e.g., how often do you feel caught in the middle between your [Program Parent] and [Other Parent] when they argue or disagree about something?"). This scale has adequate reliability and validity (Buchanan et al., 1991).

## Parent-child relationship quality

Parents and children completed two subscales of the Children's Report of Parent Behavior Inventory (Schaefer, 1965): acceptance (16 items, e.g. "You almost always spoke to [Child] with a warm and friendly voice.";  $\alpha = 0.92(T1)/0.95(T2)$  child report,  $0.89(T1)/0.89(T2)$  parent report) and rejection (16 items, e.g. "You acted as though [Child] were in the way.";  $\alpha = 0.85(T1)/0.81(T2)$  child report,  $0.77(T1)/0.86(T2)$  parent report). These subscales have adequate reliability and validity (Fogas & Wolchik, 1987; Schaefer, 1965). Parents completed the 10-item Parent Adolescent Communication Scale (Barnes & Olson, 1985), e.g., "You were always a good listener for [Target Child].";  $\alpha = 0.83(T1)/0.83(T2)$ . This scale has adequate reliability and validity (Barnes & Olson, 1985; Demo et al., 1987).

## Effective discipline

Parents and children completed the CRPBI consistency of discipline subscale (8 items, e.g. "You frequently changed the rules [Child] was supposed to follow.";  $\alpha = 0.91(T1)/0.94(T2)$  child report,  $\alpha = 0.88(T1)/0.90(T2)$  parent report). This scale has adequate reliability and validity (Fogas & Wolchik, 1987; Schaefer, 1965). Parents and children completed the Oregon Discipline Scale - Follow-Through (Oregon Social Learning Center, 1991), which assessed following through on discipline (11 items, e.g., "How often did [Child] get away with things that you feel (he/she) should have been punished for?";  $\alpha = 0.80(T1)/0.81(T2)$  parent report,  $0.63(T1)/0.73(T2)$  child report). Child monitoring was assessed using the 9-item Child Monitoring Scale (Hetherington et al., 1992; e.g., "Do you know what [Child] did during his/her free time?";  $\alpha = 0.87(T1)/0.89(T2)$  parent report,  $0.85(T1)/0.85(T2)$  child report). This scale has adequate reliability and validity (Hetherington et al., 1992).

## Children's outcomes

Internalizing and externalizing problems were assessed using the t-scores of the Brief Problem Monitor (BPM; Achenbach et al., 2011; child report  $\alpha = 0.85(T1)/0.87(T2)$  and  $0.81(T1)/0.79(T2)$ , respectively), parent report ( $\alpha = 0.77(T1)/0.79(T2)$  and  $0.77(T1)/0.73(T2)$ , respectively). These measures have adequate reliability and validity (Achenbach et al., 2011).

Parents and children rated prosocial skills using the 5-item Prosocial Subscale of the Strengths and Difficulties Questionnaire (Goodman, 2001; e.g., "Often offers to help others (parents, teachers, children)";  $\alpha = 0.68(T1)/0.81(T2)$  child report,  $0.79(T1)/0.82(T2)$  parent report). This scale has adequate reliability and validity (Goodman et al., 1998; Stone et al., 2010).

## Description of eNBP

The eNBP is a five-hour, asynchronous, fully web-based adaptation of the group-based NBP that can be used on a smart phone, tablet or computer. Separate versions for fathers and mothers consist of the same didactic content and interactive exercises, with gender appropriate references, testimonials and video skills demonstrations.

The eNBP teaches the same skills as those in the NBP to strengthen post-divorce parenting. Specifically, the program targets positive parent-child relationships and effective discipline. The NBP had only one session devoted to conflict, which focused on using anger management to reduce conflict in the children's presence. Because in the randomized trials, there was mixed evidence of program-induced reductions in interparental conflict (Sandler et al., 2020; Tein et al., 2018;

Wolchik et al., 1993, 2000), the component on conflict was expanded. In this component, parents were taught skills to reduce children's exposure to conflict and escalation of conflict. Some of the added skills were from a program for divorced fathers that showed reductions in conflict up to 2 years after participation (Braver et al., 2005; Cookston et al., 2007). Parents were instructed to complete My Conflict Checkup forms on which they planned how they would use the program skills to reduce children's exposure to conflict (i.e., deciding to protect their child from conflict, using self-talk to manage their emotions and making statements to their ex-partner about keeping the children out of the conflict).

Each unit was highly interactive. For example, sessions began with a check-in in which parents responded to questions about their use of the program skills and were provided with ways to address the challenges they experienced in using the skills. This was followed by teaching a new skill using modeling videos, interactive exercises, and testimonials from prior participants. The program then prompted parents to set times to use the skill, identify barriers to using it and select strategies to reduce these barriers. Parents were provided with tip sheets to address challenges in using the skill, downloadable sheets to record use of and competence in using the skill and a downloadable handbook that summarized what was covered in the unit.

After each unit was completed, the program sent an email that summarized the home practice assignment and included links to tip sheets and video skill demonstrations as well as a reminder to practice the previous units' skills. Also, in the first three units, parents entered the day and time for doing the assigned home practice activities. To remind parents, the program automatically sent an email reminder the evening before and a text message 2 h before the time the parent entered. If parents stopped using the program before completing all 10 units, the program automatically sent six email and text messages with a login link to encourage parents to re-engage. Links to testimonials were included in some messages; other messages targeted perceived barriers (e.g., telling parents they could do the program a few minutes at a time).

## Data analytic strategy

We conducted the following preliminary analyses: pretest equivalence of the families randomized to the eNBP and wait-list condition using  $\chi^2$  tests (categorical) or t-statistics (continuous), multivariate outlier analyses to identify influential data that might bias the results (Kutner et al., 2005), and attrition analyses for child report data using Fisher's exact test (Fisher, 1954) due to small sizes of some cells. Attrition analysis was not conducted for parent report data because only 8 parents (6.1%) did not participate in the posttest, which would make the results of this analysis unreliable.

Intent-to-treat analysis was applied to investigate the program effects using Mplus 8 (Muthén & Muthén, 1998–2017), which applied the full-information maximum likelihood estimation to handle missing data. We compared eNBP and wait-list conditions at posttest on parent and child reports of the variables using analysis of covariance (ANCOVA), controlling for the pretest score and potential covariates. For child report data, to control for data dependency due to multiple children from the same family completing the assessments, we applied robust standard errors using a sandwich estimator (Muthén & Muthén, 1998–2017).

We first investigated whether the program effects were moderated by pretest status on each variable, child age, child gender and parent gender. We examined one moderator at a time. We centered all the continuous independent variables to enhance the interpretability of the findings. If the interactions were significant, we probed the simple main effects by comparing the two conditions at the mean and at one standard deviation above/below the mean of the distribution of a continuous moderator (i.e.,  $+1SD/-1SD$  of pretest measure, child age) and each level of a categorical moderator (i.e., child gender, parent gender) (Aiken & West, 1991). We reported the region of significance (i.e., % of sample in the region where the two conditions significantly differed). If none of the interactions were significant, we conducted and reported the main effect model and compared the adjusted means between the conditions (i.e., controlling for pretest scores and covariates). We report Cohen's *d* (Cohen, 1988) for the significant main effects and simple main effects.

## RESULTS

### Preliminary analyses

At pretest, the two conditions differed significantly on only one of the 30 demographic and study variables. Relative to the target children in the wait-list condition, those in the eNBP were younger ( $M_{eNBP} = 11.56$ ,  $M_{cont} = 13.67$ ). To account for this imbalance, child age was used as a covariate for the parent report variables. Age did not differ across the eNBP and wait-list control conditions for the children who completed the assessments, so child age was not used as a covariate for the child report variables. For child report data, more children in the wait-list condition did not complete the posttest than in the eNBP (8 out of 43 vs. 3 out of 59; Fisher's exact test  $p = 0.05$ ). No influential data points were identified.

### Treatment integrity

Of parents assigned to the eNBP, 42.0% ( $N = 34$ ) completed all 10 units, 8.6% ( $N = 7$ ) completed five to nine units, 19.8% ( $N = 16$ ) completed one to four units, and 29.6% ( $N = 24$ ) did not complete any.

### Consumer satisfaction

On a 5-point scale (1 = not at all helpful, 5 = extremely helpful), on average, parents rated 4.05 ( $SD = 0.96$ ) for the eNBP being helpful to themselves and 3.88 ( $SD = 1.07$ ) for it being helpful to their relationship with their children. Forty-three percent answered "Strongly Yes" and 40% answered "Yes" about whether courts should recommend the eNBP ( $M = 4.24$ ,  $SD = 0.77$ ).

### Parent report of interparental conflict, parenting and children's outcomes

Table 1 presents the results of ANCOVAs for the parent data. The adjusted means (i.e., adj-M) presented are the means at posttest controlling for the pretest measure of the same variable and child age. Six out of the 10 variables had significant main effects or interaction effects with the pretest measure. Parent gender, child gender, and child age did not moderate any of the program effects.

#### Interparental conflict

At posttest, parents in the eNBP reported significantly less conflict than those in the wait list ( $B = -0.11$ ,  $SE_B = 0.06$ ,  $z = -2.00$ ,  $p = 0.05$ ,  $d = 0.36$ ). The interaction between condition and pretest conflict was marginal ( $B = -0.22$ ,  $SE_B = 0.12$ ,  $z = -1.81$ ,  $p = 0.07$ ). Analysis of simple main effects showed that parents in the eNBP reported significantly less conflict for those at the mean (adj- $M_{cont} = 1.37$  vs. adj- $M_{eNBP} = 1.25$ ;  $B = -0.11$ ,  $SE_B = 0.06$ ,  $z = -2.07$ ,  $p = 0.04$ ,  $d = 0.37$ ) and +1SD (adj- $M_{cont} = 1.62$  vs. adj- $M_{eNBP} = 1.41$ ;  $B = -0.21$ ,  $SE_B = 0.08$ ,  $z = -2.71$ ,  $p = 0.007$ ,  $d = 0.49$ ) of pretest conflict; 64% were in the region of significance.

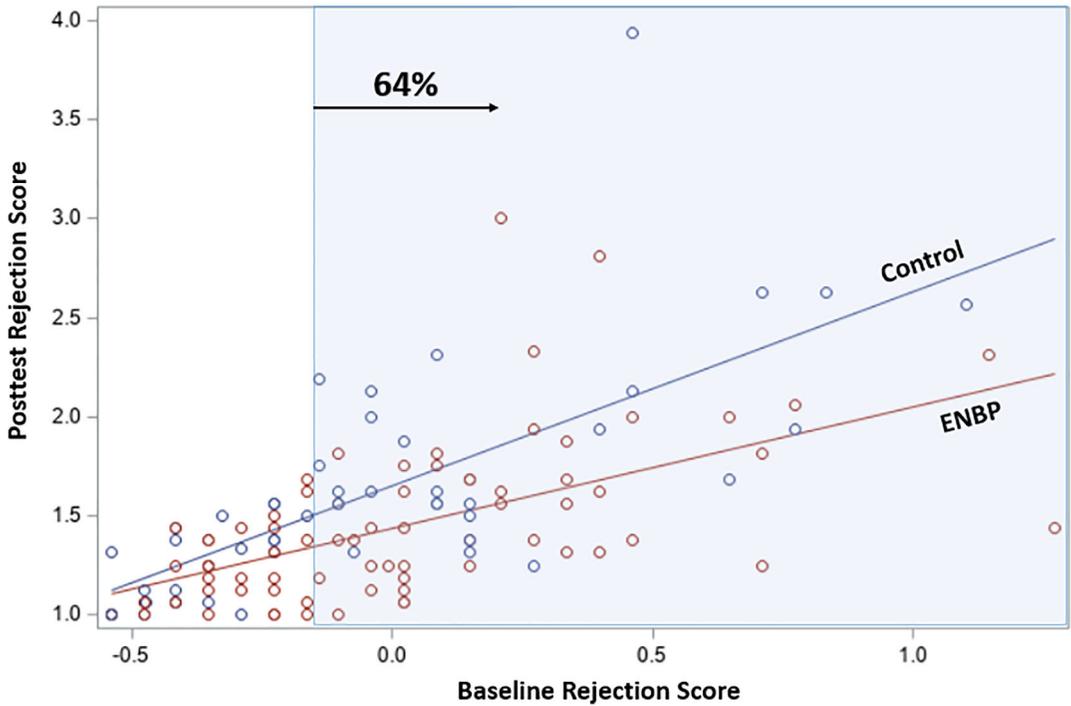
#### Parent-child relationship quality

There was a significant interaction between condition and pretest rejection ( $B = -0.37$ ,  $SE_B = 0.17$ ,  $z = -2.17$ ,  $p = 0.03$ ). As pretest rejection increased, the benefits of the eNBP increased. Compared to those in the wait list, at

TABLE 1 Program effects on parent and child reports of study variables at posttest

Variables	Adjusted mean (control)	Adjusted mean (eNBP)	Main effect B (SE <sub>B</sub> )	Main effect z-statistic	Main effect p-value	Significant moderation (p-value)	Cohen's d
<b>Parent Report</b>							
Interparental Conflict	1.26	1.15	-0.11 (0.06)	-2.00	0.05	Pretest ( $p < 0.0001$ )	$d_{pre\ at\ mean} = 0.37$ $d_{pre\ at\ +1sd} = 0.49$
Parenting							
Acceptance	4.54	4.67	0.13(0.07)	1.82	0.07		$d = 0.33$
Rejection	1.63	1.41	-0.22(0.07)	-3.09	0.002	Pretest ( $p = 0.03$ )	$d_{pre\ at\ mean} = 0.58$ $d_{pre\ at\ +1sd} = 0.68$
Consistent Discipline	4.05	4.27	0.22(0.09)	2.58	0.01		$d = 0.47$
Parent-Child Communication	4.36	4.53	0.17(0.08)	2.19	0.03		$d = 0.40$
Follow-Through	3.55	3.77	0.22(0.10)	2.29	0.02		$d = 0.41$
Monitoring	4.62	4.71	0.08(0.10)	0.79	0.43		
Child Outcomes							
Externalizing Problems	55.58	54.72	-0.85(0.80)	-1.06	0.29		
Internalizing Problems	59.72	56.80	-2.92(1.03)	-2.84	0.005		$d = 0.52$
Prosocial Skills	1.59	1.65	0.05(0.07)	0.81	0.42		
<b>Child Report</b>							
Interparental Conflict	1.47	1.30	-0.17(0.07)	-2.40	0.02		$d = 0.49$
Interparental Conflict	1.55	1.49	-0.06(0.13)	-0.49	0.63		
Caught in the Middle							
Parenting							
Acceptance	4.29	4.45	0.17(0.12)	1.37	0.17		$d = 0.44$
Rejection	1.62	1.40	-0.22(0.10)	-2.19	0.03		
Consistent Discipline	4.07	4.46	0.38(0.19)	2.02	0.04	Parent Gender ( $p = 0.05$ )	$d_{female} = 0.42$
Follow-Through	3.77	4.17	0.40(0.13)	3.06	0.002	Pretest ( $p = 0.01$ )	$d_{pre\ at\ mean} = 0.67$ $d_{pre\ at\ -1.5d} = 0.81$
Monitoring	4.23	4.45	0.22(0.14)	1.56	0.12		
Child Outcomes							
Externalizing Problems	53.68	52.61	-1.08(1.12)	-0.97	0.33	Child Gender ( $p = 0.01$ )	$d_{male} = 0.40$
Internalizing Problems	56.94	53.73	-3.21(1.09)	-2.94	0.003		$d = 0.59$
Prosocial Skills	8.89	8.90	0.01(0.30)	0.04	0.97		

Note: Adjusted mean is mean adjusted for the pretest measure and covariates. The last column reports Cohen's d for simple main effects for the region or subgroup with a significant interaction and main effects when no interaction effects were significant. Bold indicates statistical significant value.



**FIGURE 1** Interaction of pretest scores on rejection and intervention condition in predicting posttest scores on rejection

posttest, parents in the eNBP had significantly lower rejection at the mean ( $\text{adj-}M_{\text{cont}} = 1.66$  vs.  $\text{adj-}M_{\text{eNBP}} = 1.44$ ;  $B = -0.22$ ,  $SE_B = 0.07$ ,  $z = 3.20$ ,  $p = 0.001$ ;  $d = 0.58$ ) and  $+1SD$  ( $\text{adj-}M_{\text{cont}} = 2.04$  vs.  $\text{adj-}M_{\text{eNBP}} = 1.68$ ;  $B = -0.36$ ,  $SE_B = 0.10$ ,  $z = 3.75$ ,  $p < 0.001$ ;  $d = 0.68$ ) of pretest rejection. The two conditions did not differ at low (i.e.,  $-1SD$ ) pretest rejection. Figure 1 illustrates the interaction; 64% of the families fell in the region of significance. The program effect on acceptance was marginal ( $B = 0.13$ ,  $SE_B = 0.07$ ,  $z = 1.82$ ,  $p = 0.07$ ;  $d = 0.33$ ); parents in eNBP reported greater acceptance than those in the wait list. The eNBP significantly improved parent-child communication ( $B = 0.17$ ,  $SE_B = 0.08$ ,  $z = 2.19$ ,  $p = 0.03$ ;  $d = 0.40$ ).

### Effective discipline

There were significant main effects on consistency of discipline ( $B = 0.22$ ,  $SE_B = 0.09$ ,  $z = 2.58$ ,  $p = 0.01$ ;  $d = 0.47$ ) and follow-through ( $B = 0.22$ ,  $SE_B = 0.10$ ,  $z = 2.29$ ,  $p = 0.02$ ;  $d = 0.41$ ); parents in the eNBP had higher effective discipline and follow-through than those in the wait list.

### Children's outcomes

At posttest, parents in the eNBP reported lower internalizing problems than those in the wait list ( $B = -2.87$ ,  $SE_B = 1.02$ ,  $z = -2.83$ ,  $p = 0.005$ ;  $d = 0.52$ ). The effects of the eNBP on externalizing problems and prosocial behavior were nonsignificant.

## Child report of interparental conflict, positive parenting and children's outcomes

Table 1 presents the results of the ANCOVAs for the child report data. Six of the 10 variables had significant main or interaction effects with the pretest measure or gender. Child age did not moderate any of the program effects.

### Interparental conflict

Children in the eNBP reported significantly less interparental conflict at posttest than those in the wait list ( $B = -0.17$ ,  $SE_B = 0.07$ ,  $z = -2.40$ ,  $p = 0.02$ ;  $d = 0.49$ ). The effect of the eNBP on being caught in the middle was not significant.

### Parent-child relationship quality

The eNBP had a significant main effect on reducing rejection ( $B = -0.22$ ,  $SE_B = 0.10$ ,  $z = -2.19$ ,  $p = 0.02$ ;  $d = 0.44$ ); the effect on acceptance was nonsignificant.

### Effective discipline

The eNBP had a significant condition  $\times$  parent gender effect on increasing consistency of discipline ( $B = -0.55$ ,  $SE_B = 0.28$ ,  $z = -1.97$ ,  $p = 0.05$ ). The simple main effect analysis showed that females in the eNBP were more likely to be consistent in discipline at posttest than females in the wait-list condition ( $\text{adj-}M_{\text{cont}} = 4.15$  vs.  $\text{adj-}M_{\text{eNBP}} = 4.59$ ;  $B = 0.44$ ,  $SE_B = 0.21$ ,  $z = 2.08$ ,  $p = 0.04$ ;  $d = 0.42$ ). The condition  $\times$  pretest measure interaction on follow-through was significant ( $B = -0.40$ ,  $SE_B = 0.15$ ,  $z = -2.62$ ,  $p = 0.01$ ). Benefits occurred at lower levels of pretest follow-through. Compared to the wait list, at posttest, children reported that parents in the eNBP had significantly higher follow-through at the mean ( $\text{adj-}M_{\text{cont}} = 3.75$  vs.  $\text{adj-}M_{\text{eNBP}} = 4.17$ ;  $B = 0.41$ ,  $SE_B = 0.13$ ,  $z = 3.31$ ,  $p = 0.001$ ;  $d = 0.67$ ) and  $-1SD$  ( $\text{adj-}M_{\text{cont}} = 3.20$  vs.  $\text{adj-}M_{\text{eNBP}} = 3.89$ ;  $B = 0.68$ ,  $SE_B = 0.17$ ,  $z = 4.01$ ,  $p < 0.001$ ;  $d = 0.81$ ) of pretest follow-through. Seventy percent of the families were in the region of significance.

### Children's outcomes

The eNBP had a main effect to reduce internalizing problems compared with the wait list ( $B = -3.21$ ,  $SE_B = 1.09$ ,  $z = -2.94$ ,  $p = 0.003$ ;  $d = 0.59$ ). There was also a significant condition  $\times$  child gender interaction ( $B = 5.16$ ,  $SE_B = 2.01$ ,  $z = -2.57$ ,  $p = 0.01$ ) on externalizing problems; male but not female children in the eNBP had lower externalizing problems at posttest than those in the wait list ( $\text{adj-}M_{\text{cont}} = 55.33$  vs.  $\text{adj-}M_{\text{eNBP}} = 52.34$ ;  $B = -2.99$ ,  $SE_B = 1.52$ ,  $z = -1.97$ ,  $p = 0.05$ ;  $d = 0.40$ ). The program effect on prosocial skills was not significant.

## DISCUSSION

This is the first study to demonstrate that a web-based parenting program for separated/divorced parents significantly reduced interparental conflict, improved positive parenting and reduced children's mental health problems. Program effects on each of these outcomes were found for both parent and child reports, increasing confidence that they reflect real changes in children's mental health problems and post-divorce experiences. Below, we discuss how these findings relate to those of other research, the study's limitations and directions for future research. We also

discuss how the widespread implementation of the eNBP could significantly further the Association of Family and Conciliation Courts' (AFCC) vision to develop a judicial system that promotes the best outcomes for children in divorced and separated families.

This is the first randomized trial of a group- or web-based parenting program for divorced/separated families to demonstrate an effect to decrease *both* parent and child reports of interparental conflict. It is particularly noteworthy that children reported reductions in conflict. Because parents invested time and effort in the program, they may have been more likely than their children to report a positive change. Because children's awareness and appraisals of interparental conflict play an important role in affecting their mental health outcomes (e.g., Cummings & Davies, 2002) and because children did not participate in the program, their reports of reductions in conflict might be even more meaningful than their parent's report. Interparental conflict elevates risk for developing not only mental and physical health problems (e.g., O'Hara et al., 2019) but also social relationship problems (van Dijk et al., 2020) and academic problems (Harold et al., 2007). Thus, the program effects to reduce conflict have important implications for improving a wide range of children's post-divorce problems.

The effects to reduce interparental conflict in the eNBP were stronger than those in the three randomized controlled trials of the in-person NBP (Sandler et al., 2018, 2020; Wolchik et al., 1993, 2000). It is likely that the stronger effects on conflict were due to strengthening the component on reducing conflict by including a new strategy to help parents plan how to deal with potential conflict situations (i.e., My Conflict Checkup) and by incorporating strategies that were successful in reducing conflict in a parenting program for divorced fathers (Cookston et al., 2007). It is also possible that the stronger effects were due in part to the email/text message reminders about using the conflict reduction skills.

The finding that the eNBP strengthened both parent-child relationship quality and effective discipline is similar to the findings of three trials of the in-person group NBP (Sandler et al., 2018, 2020; Wolchik et al., 1993, 2000). Program effects were found across parent gender, child gender and child age, with one exception. Children reported improvements in consistent discipline for mothers but not for fathers. The magnitude of the program effects on parent-child relationship quality and effective discipline was similar to that in the evaluations of the in-person NBP. These findings are important because long-term follow-up of families in one of the trials of the NBP found that short-term improvements in parenting had cascading effects to reduce offspring mental health problems and improve developmental competencies 15 years after participation (Wolchik et al., 2016, 2021). If the eNBP's effects on parenting lead to similar long-term benefits, this would indicate that the web-based delivery of eNBP would be a much more cost-effective approach to reducing children's long-term post-divorce problem outcomes than the in-person group approach.

The eNBP is the first web-based program for divorced/separated parents to demonstrate reductions in both parent and child report of child mental health problems. Both parents and children in the eNBP reported fewer internalizing problems, like anxiety and depression, than did those in the wait list. These findings replicate the positive program effects on internalizing problems obtained in the earlier experimental evaluations of the eNBP (Sandler et al., 2018, 2020; Wolchik et al., 2000). As with the measures of parenting, the magnitude of the program effect for internalizing problems was similar to those obtained in the evaluations of the in-person group NBP. Male, but not female children nor parents, reported program-induced reductions in externalizing problems, like aggression. This gender difference might be because males are more likely to engage in externalizing behaviors than females (e.g., Achenbach et al., 2011), which would provide greater opportunity for change. We did not examine gender differences in the evaluations of the NBP. These short-term effects on mental health problems have important implications for longer-term outcomes. Follow-up of the NBP found that short-term effects on children's mental health problems led to improvements in mental health problems and competencies in adolescence, which led to improvements in mental health problems and developmental competencies in adulthood (Wolchik et al., 2016, 2021).

The positive findings on children's mental health problems and parenting are consistent with those of the four meta-analyses of web-based parenting programs with other populations (Baumel et al., 2016; Nieuwboer et al., 2013; Spencer et al., 2020; Thongseiratch et al., 2020). The lower cost and greater accessibility and

convenience of web-based parenting programs (Schramm & Becher, 2020) hold great promise for reducing the public health burden of children's mental health problems.

The current findings extend those of the only other randomized trial to evaluate the effects of a web-based parenting program for divorced/separated parents on parenting and children's mental health problems. The program effect on relationship quality is consistent with DeGarmo and Jones' (2019) effect on reducing coercive parenting. Also, the program-induced reductions in children's mental health problems are consistent with the marginal effect on a composite of father report of children's behavior problems and prosocial behavior found by DeGarmo and Jones (2019). The current findings go beyond those from this web-based program for divorced fathers by showing significant effects on both parent and child reports of parenting, child mental health problems and interparental conflict and by providing a more nuanced assessment of program effects on children's adjustment. The eNBP also included both mothers and fathers and found only one significant difference in program effects across parent gender.

The program did not increase prosocial skills. Although we did not assess prosocial skills in the evaluations of the eNBP, in the one trial in which we assessed self-esteem, the program effect on self-esteem at posttest was non-significant (Tein, 2015). However, it became significant at the six-year follow-up (Wolchik et al., 2007). It may be that effects on prosocial skills in the current sample will emerge over time.

The eNBP was highly acceptable to parents. On average, parents rated its helpfulness as high, and 80% felt that courts should recommend it. Consistent with the expectation that the availability and convenience of the program would enhance parents' use of the program, engagement in the eNBP was higher than in the group in-person version. Whereas in the large-scale trial of the NBP only 12% attended all sessions (Sandler et al., 2020), 42% completed all units in the eNBP. The high level of program use may have occurred because eNBP included multiple automated strategies to increase parents' motivation to use the program and practice the program skills, such as having parents identify possible barriers to using the skills and come up with solutions for the barriers, sending email and text reminders to use the skills and sending reminders to re-engage in the program. Future research could identify the role that these strategies play in promoting engagement in the program as well as the strategies that were most important in keeping parents engaged.

There were several limitations of the study. First, the sample consisted of predominantly non-Hispanic White, heterosexual divorced parents. Second, although children received their assessments through their own email addresses, it is possible that parents may have assisted children in completing the assessments. Third, all parents participated in a study, which included agreeing to be randomly assigned to the eNBP or a wait-list control and being compensated for completing the assessments. Fourth, we only assessed program effects immediately after the program. Fifth, effects on relitigating and use of court services were not examined. Research on the efficacy of programs in ethnic and racial minorities and LGBTQ families is an important direction for future research. Evaluation of the program when implemented in the court, particularly with high-conflict parents, is another important direction for future research. It would be particularly interesting to assess whether program-induced reductions in conflict lead to higher levels of reaching divorce agreements and lower use of court services. Also, research that examines whether the program effects to reduce conflict, increase parent-child relationship quality and effective discipline, and reduce children's mental health problems persist over time would be valuable.

Although currently many courts offer web-based programs, there has been very little research on the effects of such programs. Web-based programs can reach a much larger population than in-person programs, including parents in rural areas who often have limited resources. Also, because they can be easily and conveniently accessed, parental engagement is likely to be higher for web-based than in-person programs, particularly if effective engagement and retention strategies are used. The positive effects of the eNBP on the two most consistently supported correlates of children's post-divorce outcomes, interparental conflict and positive parenting, as well as its effects on children's mental health problems suggest that widespread implementation of eNBP could significantly further AFCC's vision to develop a judicial system that promotes the best outcomes for the families it serves.

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**Sharlene A. Wolchik, Ph.D.** is an expert in the field of prevention programs for at-risk children. In her 40-year academic career, Dr. Wolchik has focused on researching how parents can promote children's healthy adaptation to divorce. She co-developed the New Beginnings Program, which has been shown to have positive effects lasting up to fifteen years after participation, on which the eNew Beginnings Program was based. The New Beginnings Program has been recognized as a model program by Blueprints for Healthy Youth Development and is included in multiple registries of evidence-based programs in the United States and other countries. Dr. Wolchik is a Fellow of the American Psychological Association and the Society for Prevention Research and has been awarded the Stanley Cohen Award for Research from the Association of Family and Conciliation Courts. She is a Professor of Psychology and Director of the Research and Education Advancing Children's Health (REACH) Institute at Arizona State University.

**Irwin N. Sandler, Ph.D.** has been conducting research on factors that affect the well-being of children following divorce for the past 30 years. This work includes studying the effects of quality parenting quality by both mothers and fathers on children's mental health, interparental conflict and children's coping strategies. He has also been involved in multiple evaluations of intervention programs to promote the well-being of children following divorce including the New Beginnings Program and the PACT program. These evaluations have demonstrated positive impact on children up to 15 years later. His work has involved ongoing collaborations with Family Courts and he has a special interest in developing and testing parenting programs that can be implemented in coordination with the courts. He is a Research Professor in the REACH Institute and Department of Psychology at Arizona State University and recipient of the Stanley Cohen Award for Research from the Association of Family and Conciliation Courts.

**Emily B. Winslow, Ph.D.** is a Research Associate Professor Emerita in the Department of Psychology at ASU. Dr. Winslow is a leading expert in evidence-based methods for engaging parents into preventive parenting interventions. She has developed and tested theory-based engagement strategies in a series of randomized trials. Dr. Winslow found that an engagement call produced parenting intervention initiation rates that were up to eight times higher than the standard method of distributing informational flyers. She also found that an engagement video based on social influence principles increased enrollment and initiation. Recently, Dr. Winslow has adapted these evidence-based engagement strategies for the purpose of increasing utilization of online parenting programs.

**Michele M. Porter, Ph.D.** has been in the prevention science field for 22 years as a project director on multiple projects related to loss and mediating poor outcomes for children at the REACH Institute at Arizona State University.

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