Published in final edited form as:

Child Dev. 2014 ; 85(5): 2091–2105. doi:10.1111/cdev.12258.

Effects of a Preventive Parenting Intervention for Divorced Families on the Intergenerational Transmission of Parenting Attitudes in Young Adult Offspring

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Abstract

This study evaluates whether the New Beginnings Program (NBP), a parenting intervention for divorced mothers, led to positive parenting attitudes in young adult offspring. Data were collected from 240 mothers (G1) and offspring (G2) at ages 9–12 and again in adolescence and young adulthood. Alternative theoretical models were tested to examine mediators of NBP effects on G2 parenting attitudes. Significant interactions between condition and baseline G1 parenting indicated that NBP improved G2's parenting attitudes for those exposed to poorer G1 parenting at program entry. Effects on G2 warm attitudes were partially mediated through program effects on G1 warm parenting. The implications of improving parenting attitudes in offspring who experience parental divorce on well-being in the next generation are discussed.

There is growing evidence that parenting skills interventions are effective in improving parental warmth and discipline, and that they lead to improved mental health and competency outcomes in offspring up to 20 years later (Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011). It has also been repeatedly shown that parenting behaviors are relatively consistent across generations. Retrospective and prospective longitudinal studies have shown that parenting behavior, such as harsh discipline and warmth, predicts parenting behavior in offspring, a process referred to as the intergenerational transmission of parenting (e.g., Capaldi, Pears, Kerr, & Owen, 2008; Kerr, Capaldi, Pears, & Owen, 2009; Simons, Whitbeck, Conger, & Wu, 1991). First-generation (G1) parenting typically accounts for approximately 15% of the variance in the parenting exhibited in the second generation (G2; Belsky, Conger, & Capaldi, 2009).

The current longitudinal study examines whether the intergenerational transmission of parenting can be altered by participation in a preventive intervention. Specifically, it examines whether young adult (YA) offspring of mothers who participated in a brief, parenting-focused preventive intervention when the youth were in late childhood or early adolescence endorsed more positive parenting attitudes than those whose mothers participated in the control condition. This is the first study of the intergenerational transmission of parenting from the perspective of an intervention trial that attempts to change parenting in the first generation. The prediction that parenting in the second

generation will be affected by experimentally induced changes in parenting in the first generation is based on extensive evidence from longitudinal, correlational studies. Based on evidence from these correlational studies, we propose and test alternative theoretical models to examine the pathways by which the program may affect parenting in the second generation.

Theoretical Mediators of Intergenerational Transmission of Harsh Discipline

Retrospective and longitudinal studies have consistently shown that harsh discipline (e.g., use of physical punishment, yelling), typically measured during G2's late childhood through early adolescence, is transmitted across generations (e.g., Capaldi, Pears, Patterson, & Owen, 2003; Herrenkohl, Klika, Brown, Herrenkohl, & Leeb, 2013; Muller, Hunter, & Stollak, 1995; Simons et al., 1991). Researchers have studied alternative theoretical pathways that might explain the intergenerational transmission of harsh discipline. For example, in a longitudinal, prospective study spanning 22 years, Capaldi et al. (2008) found support for a direct effect of G1's inconsistent discipline on G2's inconsistent and harsh discipline, controlling for variables such as G2's age, socioeconomic status (SES), and concurrent risky behavior. Consistent with social learning theory (Bandura, 1977), Capaldi and colleagues (Capaldi et al., 2003; Capaldi et al., 2008) argued that children who experience aggressive parenting behaviors may internalize attitudes regarding how parents should behave toward their children and engage in similar behaviors once they are parents. From the social learning perspective, one would expect G1 harsh discipline to lead directly to offspring attitudes toward use of harsh discipline.

Others have argued that the intergenerational transmission of harsh discipline is partially mediated by the effects of these parenting behaviors on offspring's development of externalizing behavior problems (e.g., antisocial behavior, aggression), which then influence offspring's parenting behaviors (Shaffer, Burt, Obradovi, Herbers, & Masten, 2009). In their prospective longitudinal study, Neppl, Conger, Scaramella, and Ontai (2009) found that intergenerational continuity in harsh parenting behavior (i.e., hostility and coercive control) was significantly mediated by the offspring's externalizing behavior in adolescence. The results remained significant after accounting for the possible bidirectional effects of the adolescent's externalizing behavior problems on G1 parenting. Also, Hops, Davis, Leve, and Sheeber (2003) found that the intergenerational transmission of aggressive parenting was fully mediated by aggressive behavior of offspring in adolescence. From this cascading effects perspective, G1 harsh discipline would be expected to lead to higher levels of externalizing problems in the offspring, which in turn would lead to more positive attitudes toward harsh discipline.

Theoretical Mediators of the Intergenerational Transmission of Warm Parenting

Although much of the literature has focused on the intergenerational transmission of harsh parenting behavior, warm parenting and positive parent-child relationships have been linked with a multitude of positive outcomes in offspring, including decreased risk for psychopathology and increased levels of competence (e.g., Collins, Maccoby, Steinberg,

Hetherington, & Bornstein, 2000; Serbin & Karp, 2004). Retrospective, concurrent, and longitudinal studies have supported the intergenerational transmission of warm parenting across generations (Kerr et al., 2009; Lundberg, Perris, Schlette, & Adolfsson, 2000). As with the transmission of harsh discipline, researchers have studied alternative theoretical pathways by which the intergenerational transmission of parental warmth occurs. Specifically, researchers have studied whether intergenerational continuity is a result of direct modeling of parenting behavior (i.e., social learning) or a result of parenting behaviors that engender behaviors in offspring, such as social competence and academic competence, which then influence the offspring's parenting behaviors (i.e., cascading effects).

Several lines of research support two mediators of the intergenerational transmission of warm parenting—competence in peer relationships and academic competence. Many studies have linked warm parenting with offspring peer competence (see Ladd, 2005). The experience of receiving warm parenting may promote adaptive skills in offspring when interacting with peers that may translate to warmer relationships with others, including their own children. Attachment theory (Bowlby, 1982) posits that early attachment between children and their parents translates to the offspring's attachment to their peers and contributes to an internal working model that is applied to relationships with peers and romantic partners (e.g., Feeney & Noller, 1996). In fact, the expectation of having positive interactions with others has been found to carry forward to parents' relationships with their children (Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006). Shaffer et al. (2009) found that the transmission of high-quality parenting, conceptualized as high-quality parent–child relationships and parental warmth, across two generations was fully mediated by social competence in offspring in emerging adulthood. This effect held across gender and ethnicity and remained significant after controlling for potential “common cause” variables, such as IQ and SES. The authors argued that they ruled out the alternative explanation that high-quality parenting may be broadly engendering good behavior in offspring, as other aspects of competence (i.e., constraint and conduct) were not significant mediators.

Researchers have also found support for a mediating role of academic competence. For example, Neppl et al. (2009) measured high-quality parenting with a composite of positive communication, active listening, and parent assertiveness across three generations and found that academic competence in adolescence significantly mediated continuity in positive parenting. The relation remained significant after controlling for child IQ as well as the bidirectional effects of the children's positive behavior on parenting. Researchers have theorized that warm parenting leads to greater educational aspirations and academic performance (Steinberg, Lamborn, Dornbusch, & Darling, 1992), which contribute to greater feelings of efficacy as a parent and more commitment to the parenting role (Neppl et al., 2009). From this cascading effects perspective, warm parenting would be expected to lead to higher social and/or academic competence in the offspring, which in turn would lead to more positive attitudes toward warm parenting.

Although parenting is often described in terms of styles that involve different patterns of warmth and discipline (Baumrind, 2012), there are advantages of studying the intergenerational continuity of parenting dimensions (i.e., warmth and harsh discipline) rather than parenting styles in this study. First, some parenting dimensions may show

stronger intergenerational continuity than others. Second, processes that mediate intergenerational continuity may differ across parenting dimensions, as suggested by the aforementioned literature review.

Importance of Parenting Attitudes

Attitudes about parenting prior to parenthood, specifically attitudes about harsh discipline and warm parenting, have been found to be strong predictors of later mother–infant relationship quality, parenting behavior, and child outcomes (Kiang, Moreno, & Robinson, 2004; Lounds, Borkowski, Whitman, Maxwell, & Weed, 2005; O’Callaghan, Borkowski, Whitman, Maxwell, & Keogh, 1999; Schatz, Smith, Borkowski, Whitman, & Keogh, 2008). For example, knowledge about child development, role expectations, and attitudes about warm parenting and harsh discipline measured prior to parenthood have been found to predict later secure attachment between mothers and their 1-year-olds (Lounds et al., 2005). Also, parenting beliefs and attitudes have also been found to predict parenting behavior in adolescent mothers of 6-month-old infants (O’Callaghan et al., 1999) and maternal sensitivity in mothers of 12- to 15-month-olds (Kiang et al., 2004), and pregnant adolescents who endorsed positive attitudes toward harsh discipline were more likely to have young children with self-regulation and behavior problems (Schatz et al., 2008).

Current Study

This study used a randomized experimental design to test whether participation in a preventive parenting-focused intervention disrupted the transmission of low warmth and harsh discipline attitudes in the subsequent generation. To test this question, we assessed the parenting attitudes of YA offspring whose mothers, 15 years earlier, had participated in the New Beginnings Program (NBP), a preventive parenting intervention for divorced families. The NBP, described later, is a group intervention aimed at improving children’s postdivorce adjustment by improving mothers’ parenting behaviors. Altering the transmission of negative parenting in this population is particularly important because divorce increases the risk for poor parenting in parents postdivorce (e.g., Amato & Sobolewski, 2001; Hetherington & Stanley-Hagan, 2002) and is related to plausible theoretical mediators of the intergenerational transmission of parenting, such as externalizing problems, peer competence, and academic competence (Amato, 2001; Hetherington & Stanley-Hagan, 2002; Lansford et al., 2006).

A randomized experimental trial of the NBP with divorced mothers of 9- to 12-year-old children found that the NBP had significant effects to reduce harsh discipline and increase parental warmth of the parents at posttest, with the effects of the NBP being stronger for those who had poorer parenting at program entry (Wolchik et al., 2000). Analyses also showed positive effects on several offspring outcomes that have been previously identified as predictors of parenting, including externalizing problems and academic achievement at 6-year follow-up (Wolchik et al., 2002). For those high on baseline risk, program-induced effects on parenting partially mediated program effects on externalizing problems and academic achievement (Tein, Sandler, MacKinnon, & Wolchik, 2004; Zhou, Sandler, Millsap, Wolchik, & Dawson-McClure, 2008). The finding that the effects of the NBP were

stronger for parents who had poorer parenting practices at program entry (Wolchik et al., 2000; Tein et al., 2004) is consistent with evidence that preventive interventions are most effective for individuals functioning poorly at baseline (e.g., poor parenting quality; Pillow, Sandler, Braver, Wolchik, & Gersten, 1991; Wilson & Lipsey, 2007). In fact, in a meta-analysis of 48 prevention studies, baseline level of problems was one of the most common moderators of intervention effects (Sandler et al., 2014). This makes sense because, unlike treatment studies where all participants have clinically significant problems at baseline, studies of selective preventive interventions, such as the NBP, include participants who are heterogeneous on baseline level of problems. One would expect that those entering such programs with low proficiency in the skills targeted by the intervention (e.g., parenting skills) would benefit more than those starting the program with higher skill proficiency. Therefore, we examined whether the intervention would have stronger effects on parenting attitudes of offspring whose mothers entered the NBP with poorer parenting practices (i.e., lower maternal warmth; higher use of harsh discipline). Given possible differential intervention effects on parenting attitudes as a function of gender (Palusci, Crum, Bliss, & Bavolek, 2008; Robbers, 2008), we also examined YA gender as a potential moderator.

In addition to testing whether participation in the NBP affected offspring attitudes toward parenting, this study also examined possible mediators that may explain the intervention's effects on parenting attitudes in YA offspring. Based on previous research, the study examined two alternative models, a social learning model in which the effects of the NBP on offspring's parenting attitudes are mediated by the program's effects on G1's parenting (i.e., maternal warmth or harsh discipline) at posttest and a cascading effects model in which program-induced changes in G1's parenting at posttest affects offspring's externalizing problems, social competence, or academic competence in adolescence, which leads to offspring's parenting attitudes.

Based on findings of studies on the intergenerational transmission of parenting, and studies on the effects of the NBP, we hypothesized the following: (a) participation in the NBP by G1 parents would be significantly related to G2's positive attitudes about parental warmth and negative attitudes about harsh discipline 15 years after program participation when the offspring were YAs, (b) the program effects on parenting attitudes would be stronger for offspring whose mothers entered the program with poorer parenting (i.e., lower warmth; higher harsh discipline), and (c) both social learning and cascading effects were expected, such that the program effect on G2's warm parenting attitudes was expected to be significantly mediated by the program's effect on G1's maternal warmth at posttest and G2's peer and academic competence in adolescence. The program effect on harsh discipline attitudes was expected to be significantly mediated by the program effect on G1's harsh discipline at posttest and G2's externalizing behavior problems in adolescence.

The experimental nature of the study with longterm follow-up makes a unique contribution to the theoretical understanding of the intergenerational transmission of parenting. Although prior findings from longitudinal and correlational studies have found support for continuity in parenting (e.g., Capaldi et al., 2008; Kerr et al., 2009; Simons et al., 1991), the use of a randomized experimental design provides a much more rigorous examination of this association by testing the effects of program-induced changes in mothers' parenting on their

offspring's attitudes toward parenting and disentangling these effects from variables with which they are naturally correlated in nonexperimental studies (e.g., maternal personality, shared genes, preexisting economic stress; Patterson & Fisher, 2002). Furthermore, the inclusion of multiple assessments in middle childhood, adolescence, and early adulthood across 15 years allowed alternative plausible mediators with temporal precedence to be tested, controlling for their baseline levels. Examining parenting attitudes of YAs who are just starting to form families or do not yet have children provides an opportunity to assess whether a preventive parenting intervention delivered to G1 parents can promote positive parenting attitudes in G2 and set the foundation for high-quality parenting in the next generation.

Method

Participants

Participants included 240 YAs and their mothers who participated in the NBP, a randomized, controlled trial examining the efficacy of a preventive intervention for divorced mothers and their children (Wolchik et al., 2000). Eighty percent of participants were identified using randomly selected court records of divorce decrees that involved children in the Phoenix, Arizona area. The remaining families were recruited via media advertisements and word of mouth. Eligible mothers had a child between ages 9 and 12 and had experienced a divorce within the past 2 years (see Wolchik et al., 2000, for complete eligibility criteria). Research procedures were approved by the Institutional Review Board at Arizona State University.

This study used data collected at four time points: baseline (T1), post (T2), 6-year (T3), and 15-year (T4) follow-ups. Between data collection time points, researchers remained in contact with the families via newsletters, birthday cards, and compensation for renewing contact information each year. Two-hundred and forty mothers and children completed assessments at T1, 236 completed at T2, 209 adolescents and 199 mothers completed assessments at T3, and 194 YAs and 204 mothers completed assessments at T4. Attrition rates did not differ between the intervention and control groups at any time point (T2: 2% vs. 0%; T3: 9% vs. 10%; T4: 18% vs. 21%). Mean age of the offspring was 10.3 years ($SD = 1.1$, range = 9–12) at T1 and 25.6 years ($SD = 1.2$, range = 24–28) at T4. Mean age of children at time of divorce was 9.2 years ($SD = 1.2$, range = 7.2–11.7). Fifty percent of YAs were female; 88.7% were Caucasian, 6.7% Hispanic, 2.1% African American, and 2.5% other. At T1, mean age of mothers was 35.9 ($SD = 4.8$, range = 27–50) years, median yearly income was \$20,001–\$25,000, and 47% of mothers had completed at least some college. At T4, median YA income was \$30,000; 21% had completed high school only, 45.4% some college, 29.4% completed college, and 3.1% had completed postgraduate education. At T4, 51% of YAs were married or living with a partner, and 25% of YAs had biological or stepchildren living in their household ($M = 3.9$ years of age, $SD = 6.5$, range < 1–12 years).

Procedure

After completion of the pretest, participants were randomly assigned to one of three conditions: the Mother Program (MP; $n = 81$ families), the Mother Plus Child Program (MPCP; $n = 83$), or a Literature Control condition (LC; $n = 76$). Random assignment was

done using a computer-generated algorithm developed by a researcher not involved in the trial. Data were primarily collected in participants' homes, with separate interviews being conducted for mothers and their offspring. Interviews were conducted by trained interviewers who were blind to program condition, and family members were asked not to discuss their assigned condition with the interviewers. At T4, 95% of the mother interviewers and 96% of YA interviewers reported being blind to program assignment. Parents and offspring older than 18 signed consent forms; younger offspring signed assent forms. Families received \$45 compensation for participating in the interviews at T1 and T2. Adolescents and mothers each received \$100 at T3, and YAs received \$225 and mothers received \$50 at T4.

New Beginnings Program

Both the MP and MPCP included didactic presentations, videotapes, leader modeling, role plays, and home practice to help teach the program parenting skills. The MP consisted of 11 group sessions, 1.75 hr each and 2 individual sessions designed to help tailor the program skills to each family's needs. Each group included 8–10 mothers and was led by two trained master's-level clinicians. The MP emphasized the mother as the agent of change and focused on changing four family processes that have been found to predict children's postdivorce adjustment: increasing mother–child relationship quality, increasing use of effective discipline, decreasing barriers to father–child interaction, and reducing children's exposure to interparental conflict (see Wolchik et al., 2002, for more information about the NBP). The MPCP consisted of the MP with an additional child component. The child group was a concurrently run, 11-session program that targeted active coping, avoidant coping, threat appraisals of divorce stressors, and mother–child relationship quality. There was one conjoint session in which mothers and children practiced listening and communication skills. In the LC, mothers and children were each provided with three books about postdivorce parenting or coping with parental divorce along with a reading guide. One book was mailed every 4 weeks starting after random assignment to condition.

Independent raters reviewed a randomly selected subset of MP and MPCP sessions and found high fidelity to the program activities ($M = 98\%$). There was also high attendance, with mothers attending an average of 77% of the 13 sessions (11 group and 2 individual) and children attending an average of 78% of the 11 group sessions. When makeup sessions were included, average attendance increased to 83% and 85% for mothers and children, respectively.

Measures

Theoretical Mediators

Maternal warmth.: Maternal warmth was measured at T1 and T2 using a composite of mother and child report (weighted $\alpha = .77$). The modified 10-item Acceptance (e.g., “Mom likes you as you are”) and Rejection (e.g., “Mom forgets to help you when you need it”) subscales of the Child Report of Parenting Behavior Inventory (CRPBI; Schaefer, 1965) and the 10-item Family Communication subscale of the Parent–Adolescent Communication Scale (e.g., “Mom tried to understand my point of view”; Barnes & Olson, 1982) were used. The CRPBI Scales were combined first (Acceptance/Rejection), and then a composite was

formed with the Parent–Adolescent Communication Scale. This composite was created by transforming mother and youth scores into z scores and computing a mean. Both scales have adequate reliability and validity (Fogas, Wolchik, & Braver, 1987; Schludermann & Schludermann, 1970).

Maternal harsh discipline.: Harsh discipline was measured at T1 and T2 using mother report of the five-item Inappropriate Discipline subscale of the Linking of Families and Teachers Parenting Interview (Oregon Social Learning Center, 1991; α s = .75–.77 in this sample). Harsh discipline was defined as mothers using yelling or physical punishment as a form of discipline. Higher scores indicate greater use of harsh discipline strategies. A sample item is “When (child) misbehaved, how often did you slap or hit him/her with your hand?”

Youth peer competence.: Peer competence was measured at T1–T3 using a composite of mother and youth report of the seven-item Peer Relationships subscale of the Coatsworth Competence Scale (Coatsworth & Sandler, 1993; weighted α = .82). This scale was developed to measure youth competence and effective functioning in various domains relative to age-appropriate developmental levels. An example item is, “You are liked by lots of peers your age.” Items are scored on a 4-point Likert scale (1 = very much like you, 4 = not at all like you). Items were reverse scored such that higher scores indicated greater peer competence. The scale has been shown to have adequate convergent and discriminant validity and internal consistency reliability in community and at-risk samples (Coatsworth & Sandler, 1993; Spaccarelli, Coatsworth, & Sperry Bowden, 1995). A composite was created by transforming mother and youth scores into z scores and computing a mean.

Youth academic competence.: Academic competence at T3 was measured using adolescent’s cumulative unweighted grade point average (GPA) obtained from school transcripts. Baseline academic competence was measured using a composite of mother and youth report of the six-item Academic Competence subscale of the Coatsworth Competence Scale (Coatsworth & Sandler, 1993; weighted α = .89) at T1 because T1 GPA was not available. An example item is, “You got mostly A’s and B’s in school.” Items are scored on a 4-point Likert scale (1 = very much like you, 4 = not at all like you). Items were reverse scored such that higher scores indicated greater academic competence. The scale has adequate validity and reliability (Coatsworth & Sandler, 1993; Spaccarelli et al., 1995). A composite was created by transforming mother and youth scores into z scores and computing the mean.

Youth externalizing problems.: Externalizing problems were measured at T1–T3 with a composite of mother and youth report of the Child Behavior Checklist Externalizing subscale (Achenbach & Edelbrock, 1979; weighted α = .90). An example item is, “Child disobeys at home.” Items are scored on a Likert scale (1 = not true, 3 = often true). Raw scores were recoded into t scores with higher t scores indicating more externalizing problems. Studies have demonstrated acceptable test–retest reliability, internal consistency reliability, and validity. A composite was created by transforming mother and youth scores into z scores and computing the mean.

Criterion Variables

YA parenting attitudes.: YA attitudes about warm parenting and harsh discipline were assessed at T4 using two subscales of the Adult–Adolescent Parenting Inventory (Bavolek, 1985): the 8-item Empathetic Awareness subscale ($\alpha = .85$) and 10-item Physical Punishment subscale ($\alpha = .85$). Items are scored on a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree). Example items are as follows: “Children will quit crying faster if they are ignored” and “Children deserve more discipline than they get” for the warm parenting and harsh discipline subscales, respectively. Items on the harsh discipline attitudes subscale were reverse scored so that higher scores indicated more harsh discipline attitudes. These two subscales have good test–retest reliability (Bavolek, 1985). This measure has been found to predict later parenting behavior when used with YAs prior to parenthood (Kiang et al., 2004; O’Callaghan et al., 1999; Sommer et al., 1993).

Data Analytic Approach

Preliminary analyses.: Descriptive statistics and bivariate correlations were examined for all study variables (Table 1) and regression diagnostics were conducted to assess problems with multicollinearity. Multivariate outlier analyses, using DFFITS, DFBETAS, and Cook’s distance as criterion (Neter, Wasserman, & Kutner, 1989), were conducted for the prediction of mediator and outcome variables. Bivariate correlations between maternal parenting variables (warmth and harsh discipline) and YA parenting attitudes (warmth attitudes and harsh discipline attitudes) were conducted in the control group to examine intergenerational continuity of parenting. Similar correlations were examined in the NBP to examine continuity between G1 and G2 parenting.

Given that previous investigations have failed to find significant additive or differential effects of the dual-component MPCP versus the MP, preliminary analyses compared these two active conditions on the hypothesized mediators and study outcomes using multiple regression analyses. Similar to the approach used in previous investigations (e.g., Wolchik et al., 2000; Wolchik et al., 2002; Wolchik et al., 2013), we planned to combine the two groups if no significant differences were found.

Based on previous research showing significant relations between demographic variables and parenting behavior (e.g., Hoff, Laursen, & Tardif, 2002; Simons et al., 1993), correlations among YA gender, age, and having children (yes–no) at T4 and mother’s highest level of education at T1 (used as a measure of SES) and the outcome variables were examined to identify whether these variable should be included as covariates in all regression and mediation models.

Outcome analyses.: An intent-to-treat approach was employed for all analyses; that is, all participants who were randomized to condition were included in analyses at all assessments. Outcome and mediation analyses were conducted using Mplus software (Muthén & Muthén, 1998–2012), which employs full information maximum likelihood estimation for handling missing data. To determine if participation in NBP significantly affected offspring’s parenting attitudes in young adulthood, multiple regression analyses were conducted separately for YA attitudes about warmth and harsh discipline at the 15-year follow-up.

Because we expected baseline warmth and harsh discipline to moderate the effects of condition, the models initially included main and interactive effects. If interaction terms were significant we conducted simple effect analyses to probe the region(s) of significance—the point on the baseline measure beyond which the G2 parenting attitudes significantly differed across the two groups (see Aiken & West, 1991). If the interactions were not significant, models were rerun without interaction terms.

Mediation analyses.: To examine whether the program effects could be explained by a social learning model, cascading effects model, or both, we tested a comprehensive theoretical model that examined whether the main or interactive effects of the NBP were further mediated through posttest parenting and subsequently externalizing problems, peer competence, or academic competence in adolescence (T3). According to guidelines outlined by MacKinnon (2008), two sets of hypotheses are necessary to establish mediation effects: (a) the independent variable should predict the mediator, and (b) the mediator should predict the outcome after controlling for the direct program effect. When both sets were qualified, the significance of the mediational pathways was tested using the bootstrapping method (Fritz & MacKinnon, 2007). In accordance with work by MacKinnon (2008), Shrout and Bolger (2002), and Zhao, Lynch, and Chen (2010), this method provides a more robust test of mediation compared to Baron and Kenny's (1986) method, which requires the path from the independent variable to the outcome without controlling for the mediator (i.e., total effect) to also be significant. It is possible that the direct effect would not be significant due to differential power for detecting the mediation of indirect effects and total effects or due to opposing or unmeasured variables that explain the total effect. It is also possible for a mediated moderation process to occur (Muller, Judd, & Yzerbyt, 2005). When the magnitude of the overall intervention effect on the outcome depends on a moderator, it is possible that the mediation process that is responsible for producing the moderation effect of the intervention on the outcome also depends on the value of the moderator. Given the existence of mediated moderation, such that the differential program effects on offspring's parenting attitudes were due to differential program effects on maternal parenting postintervention, we tested simple mediation effects at 1 SD above and below the mean of baseline parenting (Tein et al., 2004). All models controlled for the covariates and baseline measures of the parallel variable. Modification indices were examined to determine if additional paths improved model fit. In the final model, each individual mediation pathway was tested when the path coefficients along the pathway were significant or marginally significant.

Results

Preliminary Analyses

Skewness and kurtosis of all variables fell within the acceptable range (skewness cutoff 2.0 and kurtosis cutoff 7.0; West, Finch, & Curran, 1995). Multivariate outlier analyses identified no influential cases. Regression diagnostics revealed no problems with multicollinearity (variance inflation factor [VIF] range 1.01–1.08). No significant differences were found between the MP and MPCP groups on the study variables. Thus, the two conditions were combined to represent one intervention group (NBP).

Table 1 presents the means (standard deviations) of the study variables and the bivariate correlations among them. The correlations between G1 parenting and G2 parenting attitudes were generally not significant. Further breakdown of the correlations separately for LC and NBP showed that there were significant relations between parenting behaviors in G1 and parenting attitudes in G2 at the 15-year follow-up in the LC, demonstrating the expected continuity in parenting in the absence of the preventive intervention (Table 2). Consistent with our hypotheses, relations between G1 parenting and G2 parenting attitudes 15 years later were not significant in the NBP. This differential continuity across generations suggests that the NBP may have altered intergenerational transmission of parenting. Gender and having children were significantly related to parenting attitudes and were included in all regression and mediation models as covariates. Being female and having children were related to more positive attitudes toward warm parenting and more negative attitudes toward harsh discipline. Analyses were conducted with and without covariates of gender and having children, and results were consistent.

Outcome Analyses

Multiple regression analyses revealed a small-medium-sized, significant program by T1 maternal warmth interaction effect on YA warm parenting attitudes (Table 3). Post hoc probing of the interaction effect (see Figure 1) revealed that the intervention effect was larger for offspring whose mothers were low in warmth at baseline and the two groups differed significantly in the region where mothers had baseline scores on warmth of $< .37$ (25% of the sample). In addition, there was [C0]a significant slope (i.e., relation of G1 parenting and G2 parenting attitudes) for the LC ($b = .37$; $SE = .10$, $p = .025$) but not for the NBP ($b = -.12$, $SE = .09$, $p = .26$). These results indicate intergenerational continuity of parenting in the LC but not in the NBP. The results also indicate that for the 25% of the sample that was low on parental warmth at baseline, the program improved attitudes toward parental warmth 15 years later.

A similar medium-sized interaction was found for Program $\times$ T1 Maternal Harsh Discipline on YA harsh discipline attitudes (Table 3). Post hoc probing (see Figure 2) revealed a region of significance on baseline harsh discipline above $.52$ (21% of the sample) and below $.68$ (10% of the sample) and a significant slope for the LC ($b = .67$, $SE = .11$, $p < .001$) but not for the NBP ($b = .17$, $SE = .09$, $p = .13$), indicating intergenerational transmission of harsh parenting in families in the LC but not for those in the NBP. The program decreased harsh discipline attitudes in the 25% of offspring whose mothers had the highest harsh discipline at program entry. However, for 10% of the offspring in the NBP whose mothers had lower harsh discipline at program entry, attitudes about harsh discipline were higher 15 years later compared to those in the LC. None of the interactive terms with gender was significant ($ps > .36$).

Mediation Moderation Analyses

Given that the NBP effects on G2 parenting attitudes were moderated by G1 baseline parenting, we applied a mediated moderation model to examine the theoretical processes expected to mediate this moderated program effect. Figure 3 shows the model, with significant and marginal paths bolded. Two additional paths, T3 externalizing to T4 warm

attitudes and T2 harsh discipline to T3 academic competence, were added to the model based on the modification indices. The added pathways improved model fit significantly (original model $\chi^2 = 103.25$, $df = 54$, comparative fit index [CFI] = .91, standardized root mean square residual [SRMR] < .07; modified model: $\chi^2 = 85.87$, $df = 51$, CFI = .94, SRMR < .06; $\chi^2 = 17.16$, $df = 2$, $p < .001$).

As shown, there was a marginal NBP $\times$ T1 Maternal Warmth interaction predicting T2 maternal warmth, and T2 maternal warmth had a significant effect on T4 G2 warm parenting attitudes. The post hoc probing of the interaction revealed that the NBP had larger effects on T2 maternal warmth for the 53% of the sample with the lowest baseline parental warmth scores (< 0.4, 53%). This suggests that the moderated program effect on YA warm parenting attitudes may be transmitted through a similar moderated effect on the mediator (T2 maternal warmth). To further examine mediated moderation pathways that might explain the interactive effect of the NBP on YA warm parenting attitudes, we tested simple mediation effects at 1 SD above and below the mean of T1 maternal warmth (Tein et al., 2004). These analyses showed that parental warmth at T2 only mediated the effect of the program on YA warm attitudes when T1 warmth was low (mediation effect [product of regression path coefficients along the mediation pathways] = .070; 95% CI [.009, .184]) versus high (–.033; 95% CI [–.036, .030]). Thus, for mothers who entered the program with low warmth, participation in the NBP increased maternal warmth, which led to more positive attitudes toward warm parenting in their offspring. The direct path from NBP $\times$ T1 Warmth interaction to warm parenting attitudes remained significant, suggesting that this mediated pathway only partially accounted for the interactive effect of the NBP on YA warm parenting attitudes. The model did not support the exploration of any indirect pathways through T3 G2 peer competence or academic competence that were predicted by the cascading effects theory.

Because the NBP $\times$ T1 Harsh Discipline interaction on YA harsh discipline attitudes was significant, we also tested for mediated moderation using the same strategy that was used to test the mediated moderation on YA warmth attitudes. Mediated moderation was not supported for G2 harsh discipline. Specifically, although there was a direct effect of the NBP on G1 T2 harsh discipline, the NBP $\times$ T1 Harsh Discipline interaction effect on maternal T2 harsh discipline was not significant, suggesting that the moderated intervention effect on G2 attitudes toward harsh discipline was not accounted for by a moderated effect on G1 harsh discipline parenting. The direct path from NBP $\times$ T1 Harsh Discipline interaction to G2 harsh discipline attitudes remained significant with all variables in the model.

The analyses showed two indirect pathways that were not predicted in this study by which harsh discipline may lead to the development of YA attitudes toward parental warmth at T4. The effect of the NBP on YA warm parenting attitudes was significantly mediated by T2 harsh discipline and T3 academic competence (mediation effect = .02; 95% CI [.002, .044]) and by T2 harsh discipline and T3 externalizing (mediation effect = .01; 95% CI [.0001, .032]). Participation in the NBP reduced maternal harsh discipline at posttest, which led to higher offspring academic competence and fewer externalizing problems in adolescence, which subsequently contributed to more positive attitudes toward warm parenting in young

adulthood. These mediated pathways did not explain the moderated effect of the intervention on YA parenting attitudes.

Discussion

The most important finding from this study is that mother's participation in the NBP predicted higher warm parenting attitudes and lower harsh discipline attitudes for offspring whose mothers entered the program with lower initial functioning (i.e., lower warmth, higher harsh discipline). This is the first experimental study to demonstrate that a brief parenting intervention can interrupt the transmission of negative parenting attitudes into the next generation. Findings from the mediation analysis support a social learning model to explain how the program affected the transmission of warm parenting across generations. More specifically, the moderated effect of the NBP on warm parenting attitudes was significantly mediated by the program effect to increase maternal warmth, such that effects were significant for offspring whose mothers entered the program with lower warmth. Neither the social learning nor cascading effects theoretical models explained the moderated effect of the NBP on YA attitudes toward harsh discipline. The results will be discussed in terms of understanding the long-term effects of the NBP and their implications for theory about the intergenerational transmission of parenting.

Consistent with the hypotheses and previous studies of preventive parenting programs that have found Baseline $\times$ Program interaction effects (Reid, Webster-Stratton, & Baydar, 2004; Tein et al., 2004; Wolchik et al., 2000; Wolchik et al., 2002), the effect of the NBP to increase attitudes about warm parenting and decrease attitudes about harsh discipline was significant for YAs whose mothers entered the program with poorer parenting quality. The test of simple effects indicated that in the control group, G1's poorer parenting at baseline predicted poorer attitudes toward harsh discipline and warmth, but in the NBP G1's harsh discipline and warmth at baseline did not predict G2's corresponding parenting attitudes. This suggests that the NBP disrupted the intergenerational transmission of poor parenting behaviors in G1 to poor parenting attitudes in G2. Furthermore, for parents who had lower warmth and higher harsh discipline at baseline, young adults in the NBP condition had more favorable parenting attitudes 15 years later than those in the control condition. Because parenting attitudes have been found to predict later parenting (e.g., Kiang et al., 2004; O'Callaghan et al., 1999; Sommer et al., 1993), it is plausible that the offspring of the YAs whose families participated in the NBP will experience more positive parenting.

There is growing interest in the developmental literature in identifying malleable moderators of the association between G1 and G2 parenting that could be targeted in interventions to disrupt the intergenerational transmission of poor parenting (Conger, Schofield, & Neppl, 2012; Conger, Schofield, Neppl, & Merrick, 2013; Herrenkohl et al., 2013). For example, a meta-analysis of five prospective longitudinal studies of the intergenerational transmission of poor parenting (i.e., child maltreatment) found evidence that a safe, stable, and nurturing relationship (with other adults or with children) moderated the intergenerational transmission of poor parenting (Schofield, Lee, & Merrick, 2013). This study is the first to demonstrate that a preventive parenting intervention moderated the intergenerational transmission of both of harsh discipline and parental warmth.

These findings have important implications for understanding the potential public health impact of the NBP and other evidence-based parenting interventions. Parental warmth and harsh discipline have been consistently found to relate to a wide range of outcomes including mental health, physical health, and competencies in childhood and adolescence (e.g., Hoeve et al., 2009; Rohner & Britner, 2002), and there is support for these relations persisting into adulthood. Therefore, improving parenting behavior can potentially improve a wide range of child outcomes across development. Whereas evaluations of evidence-based parenting programs have focused on benefits to one generation of offspring (e.g., Bonin, Stevens, Beecham, Byford, & Parsonage, 2011; O'Neill, McGiloway, Donnelly, Bywater, & Kelly, 2010), assessment of the true public health benefits of these programs requires taking into account the positive effects of these interventions into subsequent generations. Over the long term, relatively brief interventions such as the NBP may confer large public health benefits as a result of positive effects continuing into subsequent generations.

The experimental design of this study strengthens the inferences that can be made about the intergenerational transmission of parenting compared to those previously based on retrospective and longitudinal designs. Our findings suggest that the intergenerational transmission of poor parenting practices can be interrupted by improving parenting in the first generation. The results from the mediation analysis provided some evidence of the pathways that accounted for the program effect on warm parenting attitudes. For mothers who were low in warmth at baseline, participation in the NBP increased warmth and directly predicted YA's warm parenting attitudes, which is consistent with previous research examining the intergenerational transmission of warmth (Capaldi et al., 2003; Capaldi et al., 2008; Kerr et al., 2009; Lundberg et al., 2000). The mediated moderation finding makes sense theoretically because poor parenting must be present initially in G1 for a parenting intervention like the NBP to disrupt its intergenerational transmission. This finding is consistent with social learning theory (Bandura, 1977), which posits that parents model warm parenting behaviors for their children, and children internalize these parenting attitudes and replicate similar behavior with their own children (Capaldi et al., 2003). The analyses did not support cascading effects of the moderated intervention effect through peer or academic competence in adolescence. However, two unpredicted significant pathways to YAs' warm attitudes were found through harsh discipline. Maternal harsh discipline at posttest predicted decreased academic competence and increased externalizing problems in adolescence, which differentially predicted YAs' warm parenting attitudes. Because these pathways were not hypothesized, they should be considered intriguing but exploratory.

The mediation models did not clearly support either the social learning or cascading effects theories of the NBP's effects on YAs' attitudes toward harsh discipline. Although participation in the NBP had a main effect to reduce G1 harsh discipline, it only had an effect on the next generation for off-spring who had experienced harsh discipline before the intervention. There may be cascading effects that we did not capture in this study that account for the moderated intervention effect on harsh discipline attitudes in the next generation. Alternatively, consistent with social learning theory, there may be a threshold above which exposure to harsh discipline leads to internalization of harsh discipline attitudes, although this process may occur at an earlier developmental period. There is evidence that harsh discipline that occurs as early as age 2 predicts offsprings' harsh

discipline with their children (Capaldi et al., 2003). Capaldi et al. (2003) propose that attitudes toward parenting get internalized very early as a result of experiencing harsh parenting. For offspring exposed to high levels of harsh discipline, the NBP may have led to changes in these internalized attitudes during childhood or adolescence, which were not assessed in this study. Future research should study variables that predict the internalization of attitudes toward harsh discipline as well as their malleability.

Findings from this study should be considered in light of several limitations. First, only two dimensions of G1 parenting, warmth and harsh discipline, were considered. We did not have G1 and G2 discipline measures that assessed a full range of firm control strategies (e.g., time-out, withdrawal of privileges) or other important aspects of effective discipline (e.g., setting clear rules, following through with consequences consistently), which would be needed to identify authoritative parenting. Future research should employ a more comprehensive perspective of parenting and consider whether parenting styles, rather than specific dimensions, are transmitted across generations and what mechanisms may explain or disrupt this continuity. Illustratively, it would be useful to assess whether participation in programs such as the NBP may move authoritarian and permissive parents more toward an authoritative style, characterized by warmth and firm control. Second, youth in this study were between 9 and 12 years old at program entry and research that includes much younger children are needed to understand the processes that may explain the intergenerational transmission of harsh discipline. Third, the lack of diversity in the sample (i.e., majority non-Hispanic White, middle class) limits the generalizability of the findings. Fourth, only mothers with primary custody of their children, the typical postdivorce living arrangement when the trial was conducted, were included in this study. Future research should include a more heterogeneous sample of both mothers and fathers. Finally, this study examined the program's effects on parenting attitudes, not parenting behavior in G2 YAs. Although previous research with other populations have shown that parenting attitudes predict subsequent parenting behavior (e.g., O'Callaghan et al., 1999), it is important for future studies to assess long-term effects of the NBP and other parenting interventions on offspring's actual parenting behaviors.

The current investigation was the first to demonstrate with a longitudinal, randomized controlled trial that participation in a brief preventive parenting-focused intervention positively affected parenting attitudes of offspring whose mothers were characterized by poor parenting quality at program entry. Improving attitudes about warm parenting and harsh discipline in YA offspring could set the foundation for healthy parenting and increase the likelihood of positive child outcomes for the next generation in these families.

Acknowledgments

Sharlene A. Wolchik and Irwin N. Sandler declare the following competing financial interest: Partnership in Family Transitions—Programs that Work LLC, which trains and supports providers to deliver the New Beginnings Program. This research was funded by the National Institute of Mental Health Grants 5R01MH071707, 5P30MH068685, and 5P30MH039246, and by the National Institute on Drug Abuse Grant 2R01DA09757.

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Figure 1.

NBP $\times$ TI Warmth interaction effect on warm parenting attitudes in young adult offspring.

The vertical line indicates the point beyond which the NBP and LC group differ significantly. The arrow and % indicate the percentage of the population that falls beyond the point of significant group differences. NBP = New Beginnings Program; LC = Literature Control; T1 = Time 1 (baseline); n.s. = nonsignificant. $p < .05$.

Figure 2.

NBP $\times$ TI Harsh Discipline interaction effect on harsh discipline parenting attitudes in young adult offspring. NBP = New Beginnings Program; LC = Literature Control; n.s. = nonsignificant. $p < .05$.

Figure 3.

Full model of the pathway from parent participation in the NBP to offspring parenting attitudes in young adulthood. Standardized regression coefficients are presented. Offspring were between 9 and 12 years old at T1 and T2, 15 and 19 years at T3, and 24 and 28 years at T4. $\chi^2 = 85.87$, $df = 51$, comparative fit index = .94, standardize root mean square residual < .06, root mean square error of approximation = .053. Effects of covariates (gender, having children, and baseline mediators and outcomes) are not included in the figure. Also not presented in the figure are the correlations between residual variance of the variables at the same time points. G1 = first generation (mothers); G2 = second generation (offspring); NBP = New Beginnings Program; LC = Literature Control; T1 = Time 1 (baseline); T2 = Time 2 (post); T3 = Time 3 (6-year follow-up); T4 = Time 4 (15-year follow-up). $^{\dagger}p < .10$. $^{*}p < .05$. $^{**}p < .01$.

Table 1

Descriptive Statistics and Intercorrelations

Variable	1	2	3	4	5	6	7	8	9	10	M (SD)
1. Group (NBP = 1, LC = 0)	1										N/A
2. T1 warmth (G1)	-.00	1									.00 (.50) (centered)
3. T1 harsh discipline (G1)	-.03	-.35**	1								.00 (.50) (centered)
4. T2 warmth (G1)	.16*	.62**	-.30**	1							.12 (.43) (centered)
5. T2 harsh discipline (G1)	-.29**	-.43**	.60**	-.43**	1						2.24 (.70)
6. T3 externalizing (G2)	-.05	-.09	.38**	-.13	.28**	1					.00 (.88) (centered)
7. T3 academic competence (G2)	.02	.09	-.34**	.09	-.28**	-.49**	1				2.82 (.68)
8. T3 peer competence (G2)	-.10	.08	-.06	.08	.04	-.38**	.21*	1			.00 (.89) (centered)
9. T4 warm parenting attitudes (G2)	.02	-.00	-.12	.12	-.09	-.22*	.30**	.16	1		3.90 (.69)
10. T4 harsh discipline attitudes (G2)	.01	-.18*	.28**	-.12	.15	.14	-.25*	-.17	-.44**	1	2.31 (.87)

Note. NBP = New Beginnings Program; LC = Literature Control; G1 = first generation; G2 = second generation; centered = centered at the mean; T1 = Time 1 (baseline); T2 = Time 2 (post); T3 = Time 3 (6-year follow-up); T4 = Time 4 (15-year follow-up).

* $p < .05$.

** $p < .01$.

Table 2

Bivariate Correlations Demonstrating the Continuity of Parenting in the LC and Discontinuity in the NBP

	T2 Warmth (G1)	Warm parenting attitudes (G2)
	LC/NBP	LC/NBP
T1 warmth (G1)	.72 **/.07	.26 */-.08
T2 warmth (G1)		.31 **/.07

	T2 harsh discipline (G1)	Harsh discipline attitudes (G2)
T1 Harsh discipline (G1)	.70 **/.15 [†]	.49 **/.15 [†]
T2 harsh discipline (G1)		.46 **/.008

Note. NBP = New Beginnings Program; LC = Literature Control; G1 = first generation; G2 = second generation; T1 = Time 1 (baseline); T2 = Time 2 (post).

[†]
 $p < .10$.

*
 $p < .05$.

**
 $p < .01$.

Table 3

Program Effects on Young Adult Parenting Attitudes

	Standardized Regression Weight β	SE	p
Warm parenting attitudes (G2)			
Group	-.03	.06	.63
T1 warmth (G1)	-.09	.08	.26
Group $\times$ T1 Warmth	.20	.08	.01
Gender	-.39	.06	< .001
Children (yes-no)	-.21	.06	.001
Harsh discipline attitudes (G2)			
Group	-.01	.07	.88
T1 Harsh discipline (G1)	.50	.11	< .001
Group $\times$ T1 Discipline	-.30	.11	.007
Gender	.23	.07	< .001
Children (yes-no)	-.15	.07	.02

Note. G1 = first generation; G2 = second generation; T1 = Time 1 (baseline); T2 = Time 2 (post).