

Benefits of Mother Goose: Influence of a Community-Based Program on Parent-Child Attachment Relationships in Typical Families

Elaine Scharfe
Trent University

An estimated 50 to 60% of children from typical families develop secure attachment relationships with their parents (Ainsworth, Blehar, Waters, & Wall, 1978; Van IJzendoorn & Kroonenberg, 1988); however, intervention research has focused primarily on interventions for high-risk clinical samples (Berlin, Zeanah, & Lieberman, 2008). In this project, the influence of a popular community-based parent-child program was assessed in a non-clinical sample of families. Families participating in a 10-week Parent-Child Mother Goose Program (n.d.) and families on the waitlist for the program were asked to complete questionnaires to assess parenting efficacy and satisfaction as well as parents' perception of their own and their child's attachment styles at the beginning of the program, the end of the program, and six months later. Mothers in the program group reported significantly more positive change in their reports of parenting efficacy over time and also reported significantly more change in their children's attachment category. Specifically, children in the program group were significantly more likely to be classified as secure over time (55% at T1 to 81% at T3) as compared to the waitlist participants (45% at T1 to 62% at T2). In this popular 10-week, community-based program, parents learned skills that continued to influence their relationship with their children six months after the conclusion of the program.

Over the past 50 years, the importance of a secure parent-child attachment relationship has been well documented. Considerable research has demonstrated that secure children are more socially competent (e.g., Schneider, Atkinson, & Tardif, 2001; Troy & Sroufe, 1987), are less likely to have emotional and behavioral problems (e.g., DeVito & Hopkins, 2001; Fagot & Leve, 1998), are less likely to have medical problems (e.g., Chatoor, Ganiban, Colin, Plummer, & Harmon, 1998; Mrazek, Casey, & Anderson, 1987), and score higher on tests of achievement (e.g., Jacobsen & Hofmann, 1997) than insecure children do. In adulthood, researchers have also demonstrated the positive association between secure attachment and adult functioning (e.g., Brennan & Shaver, 1995; Carnelley, Pietromonaco, & Jaffe, 1994; Feeney, Noller, & Callan, 1994; Kunce & Shaver, 1994; Scharfe & Bartholomew, 1994). Despite the fact that only an estimated 50–60% of children from typical families form secure attachment relationships with their caregivers (Ainsworth et al., 1978; Van IJzendoorn & Kroonenberg, 1988), intervention research has focused on interventions in high-risk families with multiple problems (for a review, see Berlin et al., 2008). In previous work, Scharfe (2003a) reported that both women identified at risk for mood disorders after childbirth and women who were not identified to be at-risk reported that they preferred community-based interventions to professionally facilitated interventions. Notwithstanding, the benefits of community-based programs for typical families have yet to be fully explored. In this project, the influence of a popular community-based program (Parent-Child Mother Goose [PCMG]; n.d.) on changes in parenting efficacy and satisfaction as well as parent and child attachment styles in typical families were assessed.

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Importance of Attachment Relationships

Bowlby (1982) proposed that children's experiences with caregivers early in life exert a powerful influence on the development of attachment representations. Bowlby (1973) suggested that attachment security resulted from responsive, appropriate, caregiving, and that, because of this care, individuals developed a sense of the self as worthy of care and a sense that others will be responsive and sensitive when caring. Ideally, children should feel secure and contented when safely in the presence of caregivers, and when threatened, they should seek proximity to caregivers as a safe haven. Although the goal of attachment (i.e., seeking a secure base) is similar for all children, their mechanisms for seeking proximity differ depending on caregiving experiences (Ainsworth et al., 1978). These individual differences in attachment are internalized and guide reactions to social situations throughout life (Bowlby, 1973).

Considerable research has demonstrated that mother-infant attachment categories show moderate to high stability when infants' caregiving experiences are stable: approximately 65% of infants are classified in the same category at two points in time (for a review, see Scharfe, 2003b). Furthermore, many studies have explored the influence of variables that Bowlby (1982) originally suggested may produce change (e.g., life events, depression, birth of a sibling) and found that change in infant attachment is associated with several life events. For example, several studies exploring change in both clinical and non-clinical samples have found that increased quality of care was associated with changes from insecure to secure attachment (e.g., Egeland & Farber, 1984; Rauh, Ziegenhain, Müller, & Wignroks, 2000; Vondra, Hommerding, & Shaw, 1999). Correspondingly, decreases in quality of care have been found to be associated with changes from secure to insecure attachment (Egeland & Sroufe, 1981; Vaughn, Egeland, Sroufe, & Waters, 1979). In spite of the many studies examining the stability of parent-child attachment, there is much work to be done in the area of interventions to change parent-child attachment, in particular for typical non-clinical families.

Intervention Studies

Despite the finding that 40–50% of children from typical non-clinical families develop insecure attachment (Ainsworth et al., 1978; Van IJzendoorn & Kroonenberg, 1988), research has focused on professionally facilitated interventions in high-risk clinical samples (Berlin et al., 2008), and to date, no studies have evaluated the impact of community-based programs on change of attachment. Although, there is little debate that secure parent-child attachment relationships are beneficial and that insecure parent-child attachment relationships put children at risk for a variety of personal, academic, social, and emotional difficulties, the majority of parents experiencing parenting difficulties are unlikely to seek professional assistance. The empirical validation of an effective attachment intervention for non-clinical families has been slow, as researchers examining attachment in non-clinical samples typically do not systematically intervene. Furthermore, many parents do not seek out help presumably because they are not aware that they can be helped (or need to be helped), may be concerned about being labeled a “bad parent,” or are not aware of a choice of interventions. Furthermore, compared to high-risk clinical families, typical families with insecure children may not be in contact with professionals who could suggest appropriate intervention. To reach these families, community-based interventions may be helpful.

Community-Based Interventions

Which interventions are most effective in preventing and treating attachment disorders remains an empirical question (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2008), and while the benefits of community-based interventions are just beginning to be realized, the study of the effectiveness of these programs have yet to be extended to attachment. Although, parents experiencing parenting difficulties may be unlikely to seek professional assistance, there are community programs that parents may enroll in that may provide assistance. One such program, PCMG, focuses on the *pleasure and*

power of using rhymes, songs, and stories to strengthen parent-child relationships (Formosa & Heinz, 2003, p. iv). Several positive outcomes are expected because of participating in this program including increased positivity of parent-child interactions, improvement in pre-literacy skills, and improvements in parents' understanding of typical child behavior and development (Formosa & Heinz, 2003; Lottridge, Hamilton, Shewchuk, & Knott, 2004).

Two recent research projects have demonstrated the effectiveness of PCMG programming in typical, non-clinical families on language (Formosa & Heinz, 2003) and socioemotional development (Lottridge et al., 2004); each study had its own limitations. Lottridge et al. used a very small experimental ($n = 13$) and comparison ($n = 13$) middle class sample and in several analyses did not have sufficient statistical power to test for differences between the two groups. Formosa and Heinz recruited a much larger middle class sample ($N = 56$) but did not include a comparison group of families not participating in PCMG; although they found dramatic improvements in language development, without a comparison group, their conclusions are limited. The current study explored the benefit of PCMG on mother's parenting efficacy and satisfaction, and parents' and children's attachment in a comparable, non-clinical sample. Consistent with previous research, mothers in the PCMG program were expected to report greater parenting satisfaction and efficacy and improvements in their children's attachment relationships.

Method

Participants

Participants in this study were mothers and their young children (55% female) who were between the ages of 0 and 50 months ($M = 12.59$)¹ who expressed their desire to participate in the program. Program participants were enrolled in the program and participants in the

¹ Very few fathers ($n = 7$) and grandmothers ($n = 4$) participated in the program; however, they were deleted from the data analyses. All analyses were limited to data reported by mothers.

control group were on the waitlist and did not participate in a program during the time of the study. In total, 310 mothers completed the T1 questionnaire (132 waitlist and 178 program participants). These numbers represent participation rates of 73% for the waitlist-control group (in total 182 questionnaires were mailed) and 79% for the program group (in total 226 participants participated in one of 19 programs from October 2005 to April 2008).

At T1, 94% of the participants were married, 89% had at least some postsecondary education, as is typical in this community the majority of the parents and children were Caucasian, and 97% spoke English as their first language. For 58% of the women, this was their first child and 55% of the children were female. At T1, program participants were older (32.81 vs. 31.41 years; $t(305) = 1.98, p < 0.05$), had more children (1.66 vs. 1.36; $t(308) = 2.88, p < 0.01$), reported on an older child (12.94 vs. 11.30 months; $t(308) = 1.70, p < 0.10$), and had a higher SES ($t(306) = 2.66, p < 0.01$) as measured by the Blishen Occupation Code (Blishen, Carroll, & Moore, 1987) compared to waitlist participants.

In total, of the 310 mothers with T1 data, 239 mothers completed T2 questionnaires (95 waitlist and 144 program participants)² and 140 mothers completed both T2 and T3 questionnaires (42 waitlist and 98 program participants). As there were differences between the program and waitlist-control groups at T1 on variables that would be expected to influence the parent-child relationship and/or child development, the 42 waitlist-control participants with complete data were matched with one of program participants with complete data and who attended 70% or more of the sessions. Participants were matched on child gender, child age (matched within three months), marital status, relationship length, mother's age, education, and occupation, and number of children in the family. There were 23 girls and 19 boys in each group. For demographic data for both groups, please see Table 1.

2 There was a trend that program participants were more likely to complete the T2 questionnaire ($\chi^2(df = 1) = 3.42, p < 0.10$); however, some waitlist participants were removed from the waitlist group because they participated in the PCMG program before their six-month follow-up.

Table 1
Demographics of Program and Waitlist Participants

	Program	Waitlist	Difference test ^a
Parent age (mean in years)	32.24	31.42	-0.81
% Married	98%	93%	2.05
Relationship length ^b	107.27	98.70	-0.76
Education completed			2.83
High school	7%	12%	
College/university	77%	62%	
Graduate degree ^c	21%	26%	
Occupation	215.32	151.22	-0.97
Child age (in months)	11.98	12.68	0.40
Number of children	1.40	1.29	-0.92

a. *t* value for tests of continuous variables and χ^2 for test of categorical variables

b. Relationship length is in months

c. Graduate degree includes all participants with a graduate and professional degree

Procedure

Data were collected at three points in time. Program participants were asked to complete a short questionnaire (approximately 30 minutes) at the beginning and end of the program and six months after the program. During the program, data were collected by research assistants who also attended the program and assisted the program leaders. Program participants were given the questionnaires during week 1 and returned the completed questionnaires at the beginning of the second session. The T2 questionnaires were handed out in week 9 and participants were asked to complete at home and bring to the final session (week 10, the final week of the program). If participants did not attend the final session or they forgot their questionnaires at home, they were given a stamped addressed envelope to return the questionnaires by mail. Questionnaires were mailed to the participants for the six-month follow up and participants were asked to complete within one week and return in the stamped addressed envelope. All participants received a reminder call after one week. Families on the waitlist were called during each of the programs and asked

to complete questionnaires at the same time as the program participants. Questionnaires were mailed to the waitlist participants and were returned to the researchers by mail. Waitlist participants also received a reminder call after one week.

Study Site

The PCMG Program (n.d.) began in Toronto, Canada in the mid-1980s and quickly became a national, community-based program known for fostering parent-child relationships. Each PCMG group is facilitated by two trained and qualified PCMG leaders who have completed training workshops on the philosophy and methods as well as apprenticeships. During the program, parents learn songs, stories, and rhymes appropriate to entertain or calm their infants and/or toddlers. The program began in this community in 1998 and sessions are typically scheduled in a church or other community building. The leaders were assisted by one to two child minders and, for the purpose of collecting data for this research study, one to two student research assistants. During the course of the study, each PCMG program was scheduled to run one hour weekly for 10 consecutive weeks and each group included 9 to 14 parent-child dyads. In this community, parents typically learn about the program through word of mouth or community newspapers (self-referral) and a small percentage of families (less than 10%) were referred to the program through health care workers or organizations (e.g., health units, family and children's services). The popularity of the program was such that the waitlist in the community typically included approximately 100 to 120 families.

Measures

Mothers' attachment in their close friendships and romantic relationships was assessed using the Relationship Scales Questionnaire ([RSQ] Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994). Mothers were asked to rate a series of 17 statements regarding their relationships. The RSQ yields four subscales, one for each of the four attachment patterns (secure, e.g., I am comfortable depending on others; fearful, e.g., I find it difficult to trust others completely;

preoccupied, e.g., I find that others are reluctant to get as close as I would like; and dismissing, e.g., It is very important to me to feel independent from others). For this research, each of the four scales were standardized and used to compute a degree of security score.³ At each time, mothers were divided into one of two groups: predominant secure attachment if their standardized score on the secure scale was highest and predominant insecure attachment if their standardized score on the fearful, preoccupied, or dismissing scale was highest.

Child attachment security (Waters & Deane, 1985) was assessed using a survey consisting of 24-items from the security scale from the Waters and Deane Attachment Q-sort. Mothers rated their children's attachment behavior on each of the 24 items using a 7-point Likert scale ranging from 1 (very unlike my child) to 7 (very like my child; e.g., My child keeps track of my location when she/he plays around the house; My child quickly greets me with a big smile when I enter the room). Attachment data can also be considered using categorical assessments. At each time, children were divided into one of two groups: predominant secure attachment (average score of 5 or higher) and predominant insecure attachment (average score less than 5).

Parenting Sense of Competence (Johnson & Mash, 1989) was used to assess mother's feelings of efficacy and satisfaction with parenting. Mothers were asked to rate their agreement from 1 (strongly disagree) to 7 (strongly agree) a series of 17 statements regarding their feelings about parenting. The scale yields two subscales: efficacy (e.g., The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.) and satisfaction (e.g., Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age.).

³ The degree of security score was calculated using the following equation: degree of security = secure - ((fearful + preoccupied + dismissing)/3). High scores (greater than zero) indicate a higher degree of security than insecurity whereas low scores (less than zero) indicate a higher degree of insecurity than security.

Data Analysis

All data were analyzed using STATISTICA, version 6.1 (StatSoft, Inc., 2002). First, to test the mean level of change over time, to determine if there were positive effects from participation in the PCMG program, a repeated measures ANOVA was calculated using the between groups effect was the group (program versus waitlist), within group effect was time, and the dependent variables were the three scores over time. A separate ANOVA was calculated for each of the variables measured. Group and time main effects were tested as well as the interaction between group X time; significant group X time interactions would indicate that there were differences in the rate of change of program and waitlist groups. Next, a comparison of attachment category membership between groups at each time was tested using a 2-by-2 chi-square (χ^2) analysis. For example, the proportion of predominantly secure and insecure parents at T1 in the program group was compared to the proportion of predominantly secure and insecure parents at T1 in the waitlist group.

Results

Average scores over time for the matched groups are presented in Table 2. Significant group effects would indicate that there were differences between the program and waitlist group. As expected, at T1 there were no group effects for any of the variables studied thereby indicating that before the program the groups were not significantly different on any of the variables in question at T1.⁴ Significant time effects would indicate that the scores changed over time. As expected, there were significant time effects for child security: time effects would be expected due to expected developmental changes in attachment at this time (i.e., the majority of children were 12 to 18 months old). Consistent with considerable research, parent security did not change over time (cf. Scharfe, 2003b) nor did parenting satisfaction

4 This was confirmed using a *t*-test for independent means comparing T1 scores for program and waitlist participants: *t*-tests would have more power to detect differences than repeated measures ANOVAs.

Table 2
Average Scores Over Time

	T1	T2	T3	F (2, 164)
Child security				0.68
Program	4.94a	5.05a	5.40b	
Waitlist	4.79a	4.94ab	5.13b	
Mother security				1.78
Program	1.08a	1.06a	0.85a	
Waitlist	0.77a	0.75a	0.91a	
Parenting efficacy				3.75*
Program	5.10a	5.17ab	5.46b	
Waitlist	5.24a	5.35a	5.24a	
Parenting satisfaction				1.95
Program	5.43a	5.42a	5.53a	
Waitlist	5.23a	5.17a	5.05a	

Note: Items in same row with different subscripts are different from each other at $p < 0.05$ using Newman-Keuls test. The F value is from the group by time interaction from the repeated measures ANOVA. There were no group effects, and all variables changed over time (i.e., a time effect).

* $p < 0.05$

or efficacy. Group X time interactions were calculated to test the effects of the program. A significant group X time interaction indicates that there were differences in the rate of change of program and waitlist groups. Mothers in the program group reported significantly more positive change in their reports of parenting efficacy over time thereby indicating that the program had a positive influence on their view of how effective they were in the parenting role.

Using the attachment continuous scores in the repeated measures ANOVA, there were no group X time effects. However, attachment is typically viewed as a categorical variable: participants are either secure or insecure. As described previously, both parents and children were divided into secure and insecure groups at each time. Changes in parent and child predominant attachment category were tested and are presented in Table 3. Mothers who participated in the program reported a gradual, albeit non-significant, increase in their own

Table 3

Change in the Percentage of Predominantly Secure Parents and Children Over Time

	Program	Waitlist	χ^2
Parent % secure			
T1	48	57	0.76
T2	43	50	0.43
T3	60	45	1.72
Child % secure			
T1	55	45	0.76
T2	60	50	0.77
T3	81	62	3.73*

Note: χ^2 tests the difference between secure and insecure categories at T1, T2, and T3 for program and waitlist groups.

* $p < 0.05$

attachment security (48% classified as secure at T1 and 60% classified as secure at T3) and waitlist participants reported a decrease (57 to 45%). There were, however, significant changes in the children's attachment categories over time. There were no differences between child attachment categories between waitlist and program groups at T1 or T2. However, participants in the program group were more likely to be classified as secure over time (55% classified as secure at T1 to 81% classified as secure at T3) as compared to the waitlist participants (45% at T1 to 62% at T2).

Conclusions

The goal of the study was to examine the effect of this popular, relatively inexpensive, community-based program on developing parent-child relationships in a typical community sample. Results supported the expectations that mothers who completed the program reported higher levels of parenting efficacy and were more likely to judge their children to be secure at T3 than mothers in the waitlist control group. Importantly, although there were some initial improvements over the 10-week program, the results clearly support that program participants

learned skills that continued to influence their relationship with their children six months after the conclusion of the program.

The current project replicated the findings of two previous studies while including a larger sample and a matched waitlist-control group. Unlike the previous research, this study had sufficient power to test for differences between groups (cf. Lottridge et al., 2004) and included a matched comparison group to test for developmental changes versus program effects (cf. Formosa & Heinz, 2003). The findings, however, were consistent with previous work: the PCMG program positively influenced both children's development and parenting experience. The skills that parents learn during the PCMG program are proposed to increase the quality of care that parents provide for their children. In particular, parents may learn alternative ways to sooth their infant, may become more aware of their infant's preferences, and may gain support and confidence in the relationships developed with other parents. Each of these changes would be expected to increase parents' ability to react to their infants needs in a sensitive and responsive manner. In this study, mothers who participated in the program reported higher levels of parenting efficacy over time supporting that mothers felt better prepared to cope with parenting challenges after participating in the program. It is well established that increases in parental sensitivity is associated with changes from insecure to secure attachment (cf. Egeland & Farber, 1984; Egeland & Sroufe, 1981; Rauh et al., 2000; Vondra et al., 1999). Both results, increases in parenting efficacy and increased security, support the benefit of participating in this program.

However, a few limitations need to be considered when interpreting the results. First, the families who participated in this study were relatively stable, middle class, and well functioning. Nevertheless, given this limitation—which restricted the range of the data—the changes in the program group over six to seven months were large enough to be significantly different from the changes in the waitlist-control group. Clearly, the positive influence of this program must be studied in a high-risk sample—the effects would be expected to be stronger. Furthermore, data were analyzed from program participants who attended at least 70% of the PCMG sessions. Although there

were no differences at T1 between families who attended 70% or more of the program sessions and those families who did not, future research may wish to explore reasons for discontinuing participation and the level of participation needed for families to be positively influenced. For example, participants may have discontinued participation due to a lack of interest in the program, a lack of transportation or illness. Each of these reasons for discontinuing with the program may predict different pathways for family relationships and children's development.

Implications for Practice

Several suggestions can be made from the results of the study to improve practice with families. First, it is clear from the results that parents and children benefitted from this community-based program and the program is as successful as professionally facilitated programs to remedy parent-child attachment difficulties (for a review, see Berlin et al., 2008). This is a cost effective way to intervene with parents who are not at risk but whose children may still benefit from improved parenting skills. Furthermore, when individuals are struggling with parenting, it would be expected that secure individuals would be more likely to seek support, more likely to communicate what they need to be supported, and more likely to report satisfaction with support received. Insecure individuals would have more difficulty asking for support and may view particular types of support negatively. Specifically, avoidant individuals may feel judged if professionals focus on the benefits of a particular program for children. One reason why the PCMG program may be beneficial for all parents, including predominately avoidant individuals, may be because it is designed to focus on the practical skills associated with good parenting; parents do not feel judged despite the fact that many parents are learning new ways to interact, play, and sooth their children.

One of the great strengths of the PCMG program is that it is a relatively inexpensive community-based program. Although program leaders are trained and certified (see PCMG Program, n.d.), the cost or time commitment is not unreasonable, and the results of this study suggest considerable benefits for non-clinical families. Future

research needs to explore the benefits of this program for high-risk families: Findings of the current study suggest that the program may be a cost-effective way to engage parents in high-risk families while working to improve their confidence with parenting. Finally, it is important to note that the original program was 30 weeks long, but, in many communities, including the community studied in this project, the program has been shortened to 10 weeks due to financial considerations. Future research exploring the benefits of this program, in particular for high-risk samples, may benefit by using the longer timeframe.

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