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A preliminary evaluation of the Parent–Child Mother Goose Program in relation to children's language and parenting stress

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Abstract

The purpose of this study was to assess changes in children's language skills and parenting stress following participation in the Parent–Child Mother Goose Program (PCMGP). The intervention group consisted of 29 parents (age range 24 to 43 years, *M* = 33.5, SD = 4.1) and 30 children (18 females and 12 males) with ages ranging from 1 to 46 months (*M* = 14.2, SD = 13.0), who were participating in the PCMGP. The comparison group consisted of 22 parents (age range 28 to 43 years, *M* = 34.5, SD = 3.7) and 25 children (14 females and 11 males) with ages ranging from 5 to 37 months (*M* = 18.2, SD = 10.7), who were participating in community playgroups. Children's scores on receptive and expressive language using the Preschool Language Scale-3, and parenting stress scores using three subscales of the Parenting Stress Index were obtained at the beginning of the research (pre-test) and again 15 weeks later (post-test). Results revealed that the PCMGP children showed greater improvement in language skills, especially their expressive communication skills. The parents participating in the PCMGP also reported a more positive impact on their perceptions of their child's demandingness compared to the comparison playgroup parents. This study highlights the potential effectiveness of the PCMGP as an early intervention program in relation to aspects of both receptive and expressive language and parental stress, and adds to the limited existing literature evaluating this program.

Keywords

Early intervention, language, parent–child relationship, Parent–Child Mother Goose

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Research has demonstrated the benefits associated with early intervention programs that aim to promote optimal development in children (Downs and Strand, 2006). Many of these programs focus attention on the parent–child relationship, including a number targeting children's language development (Mahoney et al., 1998). The promotion of early language skills has been acknowledged as important as such skills have been linked to later literacy, school readiness and cognitive development (Robertson and Weismer, 1999; Tamis-LeMonda et al., 2006). The Social Interactionist view of language development (Vygotsky, 1962) underpinning many of these early language intervention programs proposes that language acquisition occurs through complex interactions between children's desire for social relationships, their exposure to meaningful social linguistic experiences, and their innate predisposition to learn language (Bjorklund, 2005; Bohannon and Bonvillian, 2005). In line with this view, it has been found that parents who engage their children in interactions that are non-directive and who use positive and reinforcing statements, songs, nursery rhymes, stories and games, significantly improve their children's language outcomes (Bennett et al., 2002; Hart and Risley, 1995).

Other early intervention programs have focused on educating and training parents to deal with problematic behaviour and develop positive interactions with their children (Cohen et al., 1999; Mahoney et al., 1998; Pisterman et al., 1992). Such programs have been shown to improve children's social and cognitive outcomes (Girolametto et al., 1999) and increase parents' sense of competence in the parenting role (Cohen et al., 1999; Mahoney et al., 1998). Reductions in child behaviour problems (Tucker et al., 2006), and parenting stress (Huebner, 2000) have also been reported. Fewell and Wheeden (1998), for example, evaluated the effects of a three-month pilot program, 'Play and Learning Strategies' (PALS), which focuses on early developmental skills and mother–child interaction strategies. Adolescent mothers were taught how to handle problem behaviour and to responsively meet their child's needs. The study found that the program improved children's play skills, cognition and language as well as mothers' responsiveness.

The Parent–Child Mother Goose Program (PCMGP) is an early intervention program designed to positively impact outcomes in both children's language and social behaviour. Consistent with the Social Interactionist theory of language development (Vygotsky, 1962), the primary purpose of the PCMGP is to strengthen the parent–child relationship and promote positive language based interactions between parents and children. The program was developed in 1984 in Toronto, Canada and is designed for parents and children from infancy up to four years of age (Hutchinson, 2006; Lottridge, 1998). Although suitable for all families, the PCMGP was developed particularly with the aim of supporting families who may not otherwise provide their children with rich language learning experiences such as educationally disadvantaged families and families where the parents are not fluent in English (Lottridge, 1998).

The PCMGP involves 20 two-hour, centre-based sessions with trained PCMGP facilitators. These sessions typically begin with interaction time between facilitators, parents and their children. The facilitators then engage the parents in singing a series of songs and rhymes that naturally lead the parents to touch, bounce and hold their children. Following a short break, facilitators teach parents a story that they are encouraged to re-tell to their children later. Teaching is directed at the parent while the child is free to participate, move around the room, or engage in other age-appropriate activities (Lottridge, 1998). In addition, facilitators model positive parenting behaviours such as using distraction techniques and praise when responding to children's behaviour, as well as encouraging parents to be sensitive to their child's responses, thereby promoting positive interactions between parents and children. The program also aims to reduce parents' stress and improve their sense of competence through providing education, resources, and a means of social support (Canadian Institute of Child Health, 2001).

Despite its widespread use, little investigation of the benefits of the PCMGP has been undertaken in Australia, although there is limited Canadian research indicating that the program may be beneficial in promoting language development and reducing parental stress (Canadian Institute of Child Health, 2001). In Australia, anecdotal evidence of the benefits of the PCMGP has been reported (Hutchinson, 2006) suggesting that the PCMGP improved children's communicative abilities and language skills and increased parents' confidence and ability to positively interact with their children. Parents commented that they had learned new strategies for handling difficult situations relating to their children's behaviour and felt an increased level of social support.

Guided by these findings, and to address the gap in the research literature regarding the effectiveness of the PCMGP, the present study undertook an exploratory examination of the program in relation to its impact on children's expressive and receptive language abilities and on aspects of the parent-child relationship which, according to Abidin (1990), contribute to parenting stress.

Abidin and Burke's Parenting Stress Model (Abidin, 1990) proposes that parental stress can stem from parent and child characteristics, and situational influences. The current study focused on three sources of parental stress in this model considered most likely to be positively affected by participating in the PCMGP. The first was parents' sense of competence, which refers to parents' abilities to handle general difficulties, cope with daily demands and exercise control over their children's behaviour. Competent parents are more likely to persevere in difficult circumstances, whereas low levels of parenting competence are associated with higher levels of parenting stress and poorer child outcomes (Abidin, 1995; Hess et al., 2004). The second was parents' perceptions of their child's demandingness. Higher levels of child demandingness are perceived when parents experience their children as placing higher demands upon them through, for example, continual crying or requests to be held (Abidin, 1995). Parents' conclusions regarding the source of their child's demands is an important contributor to higher stress levels, with demands attributed to temporary circumstances leading to less pronounced stress reactions than those viewed as originating in the child (Deater-Deckard, 1998, 2004). The third relates to the level of enjoyment parents experience in their interactions with their children as parental stress can be magnified when parents do not perceive interactions with their children as rewarding (Deater-Deckard, 2004). Feelings of low reinforcement and enjoyment can be detrimental to the parent–child bond and can cause parents to feel rejected, making it difficult to demonstrate appropriate responses to the child and accurately interpret their communications (Abidin, 1995; Deater-Deckard, 1998, 2004). These three areas were considered likely to benefit from participating in the PCMGP because of the program's focus on increasing parents' responsiveness and sensitivity to children's signals and the modelling of appropriate responses by the PCMGP facilitators.

In relation to the current study, it was anticipated that participation in the PCMGP would lead to improvements in children's language skills and in the quality of parent–child interactions. More specifically, it was first hypothesized that children who participated in the PCMGP would demonstrate greater improvement in both receptive and expressive language abilities compared to children in community playgroups. Second, it was hypothesized that upon completion of the program, parents in the PCMGP would show a greater increase in their sense of parenting competence and in their perception of their child as a source of enjoyment, and would indicate a greater reduction in their perception of their child's demandingness, compared to parents of children in community playgroups.

Method

The effectiveness of the PCMGP was assessed over a three-year period using groups run by a Child Development Centre in Melbourne, Australia. The Child Development Centre recruits families for its PCMGP groups primarily through advertisements placed in local community Maternal and Child Health Centres (MCHCs). In the state of Victoria, Australia these government-funded centres contact all families in their designated area upon the birth of a child, and maintain contact during the preschool years reviewing each child's health, development and learning.

Participants

Participants in the intervention group were recruited from 10 PCMGP groups running in MCHCs in the northern inner suburbs of Melbourne. Participants were excluded if they had previously participated in another PCMGP. The PCMGP group consisted of 29 parents (28 mothers and one father) whose ages ranged from 24 to 43 years (M = 33.5, SD = 4.1), and 30 children (18 females and 12 males) with ages ranging from 1 to 46 months (M = 14.2, SD = 13.0). The comparison group was recruited from 12 community playgroups that were run in the same MCHCs as the PCMGPs or at community centres located in the same or adjoining suburbs to the PCMGP groups. These weekly playgroups provided a non-structured opportunity for children to play with other children and for parents to interact socially. Child participants from the playgroup were matched according to age and gender of children participating from the PCMGP groups. The comparison group consisted of 22 parents (21 mothers and one father) whose ages ranged from 28 to 43 years (M = 34.5, SD = 3.7) and 25 children (14 females and 11 males) with ages ranging from 5 to 37 months (M =18.2, SD = 10.7).

Measures

Children's language. *The Preschool Language Scale-3* (PLS-3) (Zimmerman et al., 1992) was used to measure children's receptive and expressive language abilities. The PLS-3 is an individually administered standardized test suitable for infants from two weeks of age to six years and 11 months of age. This test has two subscales, Auditory Comprehension (receptive language) and Expressive Communication (expressive language). For each child, receptive and expressive scores were obtained. Both sub-scales consist of 48 items, each scored as either correct or incorrect, however each item has a different criteria to be met to be marked as correct. For example, some items require two out of three correct responses for that item. An example of an Auditory Comprehension item is to place eight blocks on the table and to ask the child to 'Give me just one'. A correct response would be the child handing the tester one block. An example of an Expressive Communication item is to ask the child to name items in the test picture book such as book, car, bottle, banana and cat. A correct response would be the child being able to verbally name four of the five pictures on that page. Raw scores are converted to standard scores (M = 100, SD = 15). The internal consistency coefficients for the overall test and the Auditory Comprehension and Expressive Communication subscales are .74 to .94, .47 to .88 and .69 to .91, respectively (Zimmerman et al., 1992). The PLS-3 is a widely used measure and has been used in assessing language outcomes in other intervention evaluation studies (e.g. Landry et al., 2006).

Parenting stress. *The Parent Stress Index* (PSI) (Abidin, 1995) assesses both parent and child characteristics that contribute to perceived parenting stress. It is a 120-item self-report questionnaire

that is standardized for use with parents whose children range in age from one month to 12 years. One hundred and one items are scored on a five-point Likert scale and reflect two domains. The Child Domain consists of six subscales that include Distractibility and Hyperactivity, Adaptability, Reinforces Parent, Demandingness of Child, Mood, and Acceptability. The Parent Domain consists of seven subscales made up of Competence, Isolation, Attachment, Health, Role Restriction, Depression and Relationship with Spouse. The remaining 19 items are answered as either 'Yes' or 'No' and constitute a separate Life Stress subscale that measures stresses from outside the parent–child relationship. One subscale from the Parent Domain (Competence) and two subscales from the Child Domain (Demandingness of Child, and Reinforces Parent) were utilized in this study. The PSI is a widely used measure and has been used in assessing parenting stress in the parent–child relationship in other intervention evaluation studies (e.g. Evangelou et al., 2007).

The Competence subscale consists of 13 items that identify parents' perceived level of parenting competence. The first nine items (e.g. 'I feel capable and on top of things when I am caring for my child') are measured on a five-point Likert scale with responses ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). The remaining four items are scored on a 1–5 Likert scale, with anchors varying depending on the nature of the question. For example, item 10 states, 'When I think about myself as a parent I believe. . .'. For this item possible responses range from 1 (*I can handle anything that happens*), to 5 (*I don't think I handle things very well at all*). Total subscale scores range from 13 to 65, with higher scores reflecting lower levels of perceived parental competence. The internal consistency coefficient of this subscale is .72 to .83 (Abidin, 1995).

The Demandingness of Child subscale consists of nine items related to parents' perceptions of their child's demandingness. Seven of the nine items (e.g. 'My child is always hanging on me') are measured on a five-point Likert scale with responses ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). The remaining two items require respondents to select one of the five options most applicable to their child in answering the item. For example, item 2 states, 'When my child cries it usually lasts. . .'. Possible responses range from 1 (*less than 2 minutes*) to 5 (*more than 15 minutes*). Possible scores range from 9 to 45. Abidin (1995) indicated that parents with higher scores are more likely to be concerned about being the perfect parent, and responding to every demand, whereas parents with lower scores are less likely to give in to their child's demanding behaviour. The Child Demandingness subscale has an internal consistency of .71 to .73 (Abidin, 1995).

The Reinforces Parent subscale consists of six items relating to parents' perceptions of their child as a source of positive reinforcement and enjoyment. Five of the six items are measured on a five-point Likert scale with responses ranging from 1 (*strongly agree*) to 5 (*strongly disagree*) (e.g. 'My child rarely does things that make me feel good'). The sixth item ('Which statement best describes your child?') requires a choice of one of four responses ranging from 1 (*almost always likes to play with me*), to 4 (*almost never likes to play with me*). Possible scores range from 6 to 30, with higher scores reflecting depressed feelings on behalf of the parent or child. They also reflect negative interactions between them, with the parent misinterpreting or not understanding the child (Abidin, 1995). The Reinforces Parent subscale has an internal consistency coefficient of .63 to .83 (Abidin, 1995).

Procedure

Testing was carried out by trained research students at the location of the PCMGPs and the participating playgroups. The children in both groups were individually administered the Preschool Language Scale-3 (PLS-3) in the presence of their parent in a separate area away from distractions. The Parent Stress Index (PSI) was given to each parent while their child simultaneously completed

the PSL-3. Both tests were administered to the participants at the beginning of the research project (pre-test) and again 15 weeks later (post-test) for both the PCMGP intervention group and the comparison group. Based on the principle of Intention to Treat, all participants were included in the data analyses even if they were unable to attend all 15 sessions.

Results

At the start of the study, the mean scores for the PCMGP children's auditory comprehension and expressive communication were 3.6 and 2.6 points respectively below the standardized mean of 100. For the children in the comparison group, scores were 4.6 and 4.8 points above the standardized mean of 100 on auditory comprehension and expressive communication respectively. All scores for the PCMGP and the comparison group were within the age-appropriate range of 86–115 for these two scales. In relation to the PSI, all scores for the PCMGP and the comparison group were similar to, or slightly lower, than the mean scores found for Abidin's (1995) normative sample (Demandingness of Child, M = 18.3, SD = 4.6; Reinforces Parent, M = 9.4, SD = 2.9; Competence, M = 29.1, SD = 6.0). Lower scores on the PSI reflect more positive responses.

Both groups of parents perceived their level of parenting competence and the level of reinforcement provided by their children as relatively high, and the children were generally not perceived by their parents as being highly demanding. Means and standard deviations for the language and parenting stress variables for pre-test and post-test are displayed in Table 1.

The groups were compared on all variables at the start of the study using independent samples t-tests (see Table 2 for results). As might be expected for a program designed to promote and support language development, the families who enrolled for the PCMGP had children who scored lower on auditory comprehension and expressive communication compared to the comparison

Table 1. Means and standard deviations for language and parenting stress variables

Variable	PCMGP[e]				Playgroup[f]			
	Pre-test		Post-test		Pretest		Post-test	
	M	*SD*	M	*SD*	M	*SD*	M	*SD*
Language[a]								
Auditory Comprehension	96.4	14.3	104.4	17.6	104.6	16.4	103.1	15.7
Expressive Communication	97.4	14.6	107.6	15.2	104.8	15.0	105.3	9.2
Parenting stress								
Child Demandingness[b]	19.3	6.3	18.4	5.3	15.1	3.9	16.4	4.6
Reinforces Parent[c]	8.8	3.2	8.4	2.9	8.5	2.5	8.8	2.2
Competence[d]	26.8	8.7	25.5	6.6	25.9	7.0	25.9	6.9

[a]Standard score, M = 100, SD = 15.
[b]Possible range 9–45: actual range 9–38 (pre-test), 9–30 (post-test): high scores indicate a higher level of perceived child demandingness.
[c]Possible range 6–30: actual range 6–17 (pre-test), 6–18 (post-test): high scores indicate a lower level of perceived reinforcement from child.
[d]Possible range 13–65: actual range 13–51 (pre-test), 14–40 (post-test): high scores indicate a lower level of perceived parental competence.
[e]n = 30 children, 29 parents.
[f]n = 25 children, 22 parents.

Table 2. Comparison of PCMGP and playgroup on all variables at commencement of study

Variable	PCMGP[e]		Playgroup[f]		*t*	*p*	95% CI	
	M	SD	*M*	SD			LL	UL
Language[a]								
Auditory Comprehension	96.4	14.3	104.6	16.1	2.0	.06	−16.5	0.1
Expressive Communication	97.4	14.6	104.8	15.0	1.9	.07	−15.4	0.6
Parenting stress								
Child Demandingness[b]	19.3	6.3	15.1	3.9	2.7	.01*	1.1	7.3
Reinforces Parent[c]	8.8	3.2	8.5	2.5	0.4	.72	−1.4	1.9
Competence[d]	26.8	8.7	25.9	7.0	0.4	.70	−3.7	5.5

*Note.**significance of less than .05.
[a]Standard score, M = 100, SD = 15.
[b]Possible scores range 9–45: high scores indicate a higher level of perceived child demandingness.
[c]Possible scores range 6–30: high scores indicate a lower level of perceived reinforcement from child.
[d]Possible scores range 13–65: high scores indicate a lower level of perceived parental competence.
[e]n = 30 children, 29 parents.
[f]n = 25 children, 22 parents.

group children at the start of the study. However, the most substantial initial difference between the groups was for child demandingness $t(49) = 2.7$, $p = .01$, 95% CI [1.1, 7.2], indicating that the PCMGP parents perceived their children as more demanding ($M = 19.28$, SD = 6.3) than the comparison group parents ($M = 15.1$, SD = 3.9), although the levels were generally quite low for both groups. For parental sense of competence there was no significant difference found between the PCMGP group ($M = 26.8$, SD = 6.5) and the comparison group ($M = 25.9$, SD = 7) ($M = 8.5$, SD = 2.5) at the start of the study. Similarly, for perceived level of reinforcement there was no significant difference found between the PCMGP ($M = 8.8$, SD = 3.2) and the comparison group ($M = 8.5$, SD = 2.5) at the start of the study.

To investigate the hypotheses regarding the effectiveness of the PCMGP, independent samples *t*-tests were conducted to compare the change in scores from pre-test to post-test for the PCMGP and the comparison group for each of the language and parenting stress variables (see Table 3). In relation to auditory comprehension, the PCMGP children had improved on average by 8.0 points by the end of the program, while the comparison group children remained relatively close to their original score, with their mean score reducing by 1.5 points, $t(53) = 1.85$, $p = .07$, 95% CI [-0.81, 19.7], $d = .51$. The positive effects of the PCMGP group compared to the comparison group were even more pronounced for expressive communication, with the intervention group improving on average by 10.2 points compared to virtually no change amongst the comparison group children (increase of 0.5 points), $t(53) = 2.4$, $p = .02$, 95% CI [1.4, 18.0], $d = .65$. There was a notable difference between the two groups in relation to child demandingness, with the PCMGP parents reporting a reduction in perceived demandingness of 0.9 points, while the comparison group parents reported an increase in perceived child demandingness of 1.3 points, $t(49) = -2.18$, $p = .03$, $d = -.62$. There was little difference in the amount of change shown by the two groups at the end of the study in relation to the level of positive sense of reinforcement parents perceived from their children and the level of reported parental competence, with scores on each virtually unchanged for both groups.

Table 3. Means, standard deviations and comparison of the change in scores from pre to post-test for language and parenting stress variables for the two groups

	PCMGP		Playgroup		*t*	*p*	95% CI		*d*#
Variable	*M*	SD	*M*	SD			LL	UL	
Language[a]									
Auditory Comprehension	8.0	16.1	–1.5	21.8	1.8	.07	–0.8	19.7	0.51
Expressive Communication	10.2	15.8	0.5	14.5	2.4	.02*	1.4	18.0	0.65
Parenting stress									
Child Demandingness[b]	–0.9	3.8	1.3	3.3	2.2	.03*	–4.2	–0.2	0.62
Reinforces Parent[c]	–0.4	2.9	0.3	2.5	0.8	.40	–2.2	0.9	0.24
Competence[d]	–1.3	5.7	0.1	4.0	0.1	.40	–4.2	1.5	0.26

Note. # Cohen's *d* indicates effect size, 0.2 = small, 0.5 = moderate, 0.8 = large.
*significance of less than .05.
[a] Standard score, *M* = 100, SD = 15
[b]Possible scores range 9–45: high scores indicate a higher level of perceived child demandingness.
[c]Possible scores range 6–30: high scores indicate a lower level of perceived reinforcement from child.
[d]Possible scores range 13–65: high scores indicate a lower level of perceived parental competence.
[e]*n* = 30 children, 29 parents.
[f]*n* = 25 children, 22 parents.

Discussion

In relation to language outcomes, results showed that children in the PCMGP improved more in their language abilities relative to the comparison group, most notably in the area of expressive communication. It is possible that these results are due to the nature of the activities undertaken in the PCMGP, which places particular emphasis on expressive language experiences. For example, while participating in activities involving songs, stories and rhymes, children are praised for using language that has been modelled by parents and facilitators. The Social Interactionist approach to language development (Vygotsky, 1962) suggests that imitation is an important element in vocabulary learning (Bohannon and Bonvillian, 2005) and these sorts of activities may therefore have contributed to the observed improvement in expressive language seen in the children in the PCMGP.

Findings of the current research also supported the prediction that involvement in the PCMGP would have a more positive impact on parents' perceptions of their child's demandingness than playgroup attendance, with the PCMGP parents reporting a reduction in perception of demandingness while the comparison group parents reported an increase. This finding may, in part, be explained as a result of the behaviour management strategies and distraction techniques taught and modelled by program facilitators to help parents deal with their children's demanding behaviour. This explanation is consistent with previous studies which found that improvements in parents' behaviour management practices were associated with improvements in the parent–child relationship (e.g. Fewell and Wheeden, 1998).

The positive changes in the parent–child relationship found in the current study may also have contributed to the improvement in children's expressive language. More specifically, the reduction in child demandingness may have led to an increased desire by parents to spend more time with their children, thereby providing more opportunities for positive and extended verbal interactions that promote language development. This proposal is consistent with previous intervention studies

which have reported positive effects on language outcomes following improvements in the quality of interactions between parents and children (Fewell and Wheeden, 1998; Mendez and Fogle, 2002). It is also possible that a reciprocal relationship may be occurring between language development and demanding behaviour such that improvements in children's communication lead to an increased ability to express needs verbally, rather than behaviourally through tantrums or crying. The subsequent reduction in parents' perception of children's level of demandingness may, in turn, lead to more positive interactions and verbal exchanges.

In relation to the other areas of parenting stress addressed, no substantial differences were identified between the groups. However, in relation to the level of reinforcement and enjoyment experienced from their children, both groups of parents reported high levels at the beginning of the study leaving limited room for improvement as a result of involvement in the PCMGP group or the comparison playgroup. In terms of level of perceived competence as a parent, while the activities in the PCMGP group might have had an impact on some aspects of behaviour management, it may be that specific parenting training was not a substantial enough part of the program to impact upon parents' overall sense of competence to any greater extent than the playgroup setting.

There were some limitations in the current study which should be acknowledged. The first relates to the fact that, for practical reasons, the evaluation was conducted after 15 weeks, rather than after 20 weeks when the program officially finished. However, to have observed considerably greater improvements in the PCMGP participants compared to the playgroup participants in two areas (i.e. expressive communication and perception of child demandingness) in this shorter time frame does suggest that the program's effects are notable. While it is possible that practice effects might account for some of the improvements in children's language outcomes over the 15 weeks, it could be suggested that any such effects should apply equally to both groups thus any group differences at the end of the study would still arguably be attributable to the intervention. Future research however should endeavour to explore the benefits of the program after longer time frames in order to minimize the possible impact of practice effects. A further limitation relates to the possibility that parents responded to the PSI scales with socially desirable answers. This is a potential concern with self-report measures related to parenting behaviour. However, while the parents in the current study scored towards the positive end of the PSI scales there was variability in their responses as evidenced by the standard deviations and score ranges which suggest they were not responding in a uniformly positive manner. In addition, despite effort, it was not possible to match all participants as closely on age and sex as would have been desirable, nor was it possible for the researchers administering the language and parenting stress questionnaires to be blind to the participants' group memberships. However, the measures used were administered using standardized instructions and scoring procedures and thus any potential bias was minimized. Future research taking these issues into account is nevertheless required.

In conclusion, the results of the current study can be considered a first step in the process towards formal evaluation of the PCMGP. The findings identified specific areas that this program may benefit, namely children's expressive communication and parenting stress as reflected in parents' perceptions of their children's level of demandingness. This suggests that the program has potential value in promoting early language competence as well as improving the parent–child relationship. Given these promising findings, future research utilizing more rigorous evaluation procedures should now be undertaken, and may consider using children of different ages, at risk status, and types and severity of disabilities. This would help to determine whether the program is best suited for particular profiles of children. Using such information it will be possible to match children in need of early intervention with the most appropriate programs based on research evidence.

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