

EFFECTS OF DEVELOPMENTAL PARENTING-BASED INTERVENTION PROGRAM ON MOTHERS' AFFECTION, RESPONSIVENESS, ENCOURAGEMENT AND TEACHING SKILLS: A PILOT STUDY IN TURKEY

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ABSTRACT:

The interaction between mother and child is one of the factors that can have a positive or negative effect children's development. It is known that parents' interaction skills are particularly important in for promoting language, cognitive and social development. Research emphasizes that children with positive parenting skills have better development and school readiness. The the current study was conducted using a quasi-experimental pre-test post-test single-group design. For the pilot study, 10 mothers with 13-28 month-old babies who agreed

to participate in the study received the 6-week PICCOLO-TR intervention program. The data were collected using the PICCOLO Mother-Child Interaction Observation Form to measure parent-child interaction, as a pre-test and post-test, and the Parent Opinion Form was also used. The Shapiro-Wilks test was used to test the normal distribution of the post-test scores. The results of the study ($\bar{X}=46.70$) showed that the PICCOLO subgroup and total scores of the mothers participating in the 6-week early intervention program increased compared to the pre-test scores ($\bar{X}=35.30$). It is recommended that the positive results demonstrated in the current study should be tested with larger groups. Moreover, the PICCOLO parent-child interaction assessment observation method can be added to the protocols to monitor and support the development of children. Finally, other intervention approaches that support positive parenting skills can be used in further studies.

Keywords: Piccolo, Mother-child interaction, early intervention

INTRODUCTION:

The foundation for lifelong physical and behavioral problems is laid in early childhood. Many factors in this period can affect the child's mental, cognitive, motor and language development. The first three years after birth is an important and critical period in which the child experiences rapid developmental changes, has independent communication and interaction with the environment, and the foundations of personality are built. Positive mother-child interaction is one of the factors associated with positive outcomes in many areas of child development. The responsive interaction between mother and child strongly influences the child's health and development, contributing to physical, neuropsychological and psychological health as well as survival (Shonkoff et al.,2000). The mother's behaviours and her competence in meeting the infant's needs affect the mother-child interaction. Infants' positive interactions with their mothers make them more curious about the environment and more open to exploring objects in the

environment. In addition, feelings of love and trust increase infants' courage to explore the world and thus the number of neuronal synapses (Ayar et al.,2021).

The family environment, of which the child is a part from the moment of birth and where he/she gains his/her first experiences and especially the interaction between the mother and the child have a vital importance in the child's life. Starting with nutrition after birth, tactile, visual, auditory stimuli and positive interaction between the mother and child directly affect the child's brain development. These behaviors in the first years of life determine the quality of the mother-child relationship to be established and bring positive outcomes for children (Gravener et al.,2012).

The mother has great importance in the development of a child from the prenatal period onwards. The mother, with whom the child spends most of his/her time, and the environment in which he/she lives are of great importance in the development of the child. Especially in the infancy period, which covers the first two years of life, the interactions of babies with their mothers help them grow and develop healthily (Ulutaş et al.,2016). The basis for positive interaction will be created by recognizing the developmental characteristics of the child and providing opportunities for age-specific play. During the interaction, it is important for the mother to be aware that all the behaviours of the baby are valuable. She should be attentive to the behaviors and interpret them correctly in order to give right reactions to these behaviors (Öztürk, 2011). The effects of parent-infant interaction on the development of a child demonstrate the necessity of examining early family interactions (Ulutaş et al., 2016).

Parent-child interaction is a combination of behaviors, emotions and expectations specific to a particular parent and a particular child. Positive parenting interactions support development of both healthy children and children with developmental delays (Roggman et al., 2008). Parent-child interaction should be included in intervention programs with infants and young children, and the characteristics of

the interaction related to optimal development and learning should be identified and measured (Bayoğlu et al.,2013).

A responsive home environment with good parent-child interaction is a prerequisite for children's positive development (Vilaseca et al.,2020). Parenting behaviors that support children's early development include warmth, sensitivity, encouragement, and openness to communication. These behaviors positively affect children's development as well as their academic success in later periods (Roggman et al., 2008). Reciprocal interaction involves being face-to-face, making eye contact, having a common concentration and responding to the views of the communication partner. This type of interaction, which especially supports language development, gives infants the opportunity to learn how to use different types of words in different situations (Diken, 2012).

Some national and international studies commonly examine mother-child interaction using the construct of maternal sensitivity (Selcuk et al.,2013; Verhage et al.,2016). These studies evaluate maternal sensitivity at the macro level by looking at the overall nature of the interaction. Recently, attachment theorists have emphasized the contribution of examining the mother-infant relationship at the micro level in terms of specific communication channels such as gaze and facial affect in face-to-face interaction to explain the infant's attachment quality (Bornstein et al., 2006). On the other hand, when the effect of mutual communication between parent and infant in terms of social competence and speaking skills was examined, it was concluded that it helps infants to establish social and intimate relationships (Feldman et al., 2013).

The concept of "developmental parenting" can be defined as an early intervention approach that supports child development based on parenting skills. Developmental parenting is warm, sensitive, encouraging and communicative. It is a type of parenting that we hope will be used in many programs targeting infancy or early childhood, especially in home-based programs, through home visits or other parent support programs (Roggman et al. 2020). This concept,

which helps parents acquire positive parenting skills and aims to strengthen parenting, has been used frequently in recent years. It is very important to cooperate with parents in a program that supports the development of their children. Developmental parenting is based on a family-based approach to support child development. It focuses on the inculcation of sustainable positive parenting skills by evaluating each family with their own resources and characteristics. It is a type of parenting that can change simultaneously with the child, taking into account the child's developmental characteristics. Research emphasizes the importance of providing opportunities that support children's growth and development during sensitive periods of their development (Yogman et al., 2018). Therefore, it is of great importance to know the developmental characteristics and individual differences of children in each developmental period and to ensure that opportunities are provided for them to develop themselves in all environments, especially by their families (Roggman et al. 2020).

Due to the need to create a new methodology for the development of developmental parenting skills in line with all the specified needs, the Developmental Parenting-Based Intervention Program (DPBIP) was created.

Research Problem: Does the DPBIP support developmental parenting skills?

Identified sub- questions;

1. Does the DPBIP affect affection skill in mother-child interaction?
2. Does the DPBIP affect responsiveness skill in mother-child interaction?
3. Does the DPBIP affect teaching skill in mother-child interaction?
4. Does the DPBIP affect encouragement skill in mother-child interaction?
5. Does the DPBIP support developmental parenting through play and daily routines?

The "Baby Library" opened in Karabük Zübeyde Hanım Public Library was used to implement the PICCOLO-TR Developmental Parenting-Based Intervention Program. Karabük, a small city located in the north-western region of Turkey, was chosen for its ease of transportation for families. The Baby Library is a social

service project established to support the communication and interaction skills of children aged 0-3 years and their parents. The Baby Library supports children's development through activities such as interactive book reading, sensory training, baby yoga, baby massage, educational play activities, music-rhythm activities, and parent meetings. There are many studies on development and mother-child interaction in Turkey and worldwide. There are studies conducted using different educational programs based on family and child in different age groups.

The Developmental Parenting-Based Intervention Program directly addresses the parental affection, responsiveness, encouragement and teaching dimensions for the first time in Turkey. The inclusion of home visits in the program and the sharing of developmental parenting experiences in individual and group sessions yielded highly effective results. In line with the individual parent-child interaction observations and interviews, Examples of supporting child development were presented to parents through play and daily routines, by telling them about their strengths and areas that need improvement, by being a role model, and by using mothers' interaction skills. In addition, in group sessions, parents enriched the program with developmental parenting practices that do not work in daily life and with different suggestions they made. With methods such as individualized assignments, role-playing, case studies, question-answer, families found plenty of exercise and trial opportunities to learn about their strengths and weaknesses in terms of possessing developmental parenting skills that would support child-family interaction and therefore child development. This pilot study was planned to see whether the implemented program would work in practice and the difficulties and the points to be considered during the implementation process. In this study, the effect of the PICOLO-TR Developmental Parenting-Based Intervention Program on mothers' acquisition of positive parenting skills was investigated.

METHOD

Research Model

This study, which was carried out as a pilot study, employed the quasi-experimental pre test-post test single-group design. This study has a structure different from the interaction intervention programs previously implemented in Turkey. During this pilot study, methods such as observation during home visits to families, individualized assignments, role-playing, case studies, and question-answer were used to ensure that the family took an active role in the process. In the pre-post-test model, measurements are made before and after the treatment. The presence of pre-test in the model ensures that the similarity levels of the groups are known before the treatment and the post-test results are compared accordingly (Büyükoztürk et al.,2008).

Population and Sample

In this pilot study, the population consisted of 10 volunteer mothers with babies aged 13-28 months selected by using the snowball sampling method from among the mothers who visited the Baby Library within the Zübeyde Hanım Provincial Public Library in Karabük province., They agreed to participate in the study on a volunteer basis and gave permission to be video recorded.

Information about the mothers and their children who participated in the study is given in Table 1.

Table 1. Information about the mothers and children participating in this study.

Variables	Categories	N	%
Child Gender	Female	5	50.0
	Male	5	50.0
Child Age (month)	13	1	10.0
	16	1	10.0
	18	1	10.0
	20	2	20.0
	24	2	20.0
	26	2	20.0

	28	1	10.0
Mother Education Status	Middle school	1	10.0
	High school	3	30.0
	University	6	60.0
Mother Age	26	2	20.0
	27	1	10.0
	29	2	20.0
	31	1	10.0
	32	1	10.0
	34	1	10.0
	35	1	10.0
	36	1	10.0
Mother's Employment Status	Working	3	30.0
	Not working	7	70.0
Number of Sibling	None	1	10.0
	2 Siblings	8	80.0
	3 siblings	1	10.0
Child's Birth Order	First child	1	10.0
	Middle child	8	80.0
	Last child	1	10.0
Total		10	100.0

Table 1 shows that 50% of the children participating in the study were girls (n=5) and 50% were boys (n=50). Ten percent of the children were 13 months old (n=1), 10% were 16 months old (n=1), 10% were 18 months old (n=1), 20% were 20 months old (n=2), 20% were 24 months old (n=2), 20% were 26 months old (n=2), and 10% were 28 months old. It is seen that 10% of the mothers participating in the study graduated from secondary school (n=1), 30% from high school (n=3), and 60% from university (n=6). Of the mothers who participated in the study, 20% were 26 years old (n=2), 10% were 27 years old (n=1), 20% were

29 years old (n=2), 10% were 31 years old (n=1), 10% were 32 years old (n=1), 10% were 34 years old (n=1), 10% were 35 years old (n=1), and 10% were 36 years old (n=1). While 30% of the mothers were working (n=3), 70% (n=7) were not working. Of the children, 10% had no siblings (n=1), 80% had 2 siblings (n=8) and 10% had 3 siblings (n=1). When the birth order of the children was analyzed, 10% were the first child (n=1), 80% were the middle child (n=8), and 10% were the last child (n=1).

Data Collection Tools

A "Demographic Information Form" and the "PICCOLO Mother-Child Interaction Observation Form (Parenting Interactions with Children: Checklist of Observations Linked to Outcomes)" were used. Qualitative data were collected using a semi-structured "Parent Opinion Form" to determine parents' interactions with their children regarding play, teaching, discipline and routines.

PICCOLO Mother-Child Interaction Observation Form (Parenting Interactions with Children: Checklist of Observations Linked to Outcomes)

PICCOLO was developed by Roggman et al in the United States in 2013 to assess the quality of parents' interactions with their children.

The Turkish validity and reliability study of PICCOLO (PICCOLO-TR) was conducted by Bayoğlu and Elibol (2013). PICCOLO-TR is used for parents of children aged 10 months to 5 years. The aim of the form is to evaluate parenting skills by observing the 10-15 minutes of time spent by the mother or father and the child together through direct observation or video recording and to maximize the development of the child by supporting positive parenting skills. A total of 29 observable behaviors are scored in the form. Each sub-dimension contains 7 to 8 observable parenting behavior items. Each item is scored as: 0 (none, no behavior); 1 (rarely, short-term, weakly occurring behavior); or 2 (significant, definite, strong or frequent behavior). At the end of the observation, a total score

is calculated and each sub-dimension is scored separately. At the end of the scoring, it is recommended to conduct intervention studies with families who remain in the risky area in at least 2 sub dimensions (Roggman, et al., 2008). It is thought to be a tool that can facilitate research on parent-child interaction in Turkey and meet the needs of programs that aim to support child development through positive parenting skills. Although PICCOLO-TR is primarily used in the follow-up of healthy children, it is also used to evaluate mothers having children with special needs, caregiver-child interactions, interaction with grandparents and father-child interaction (Bayoğlu, et al., 2013).

Detailed explanations were given to the mothers about the PICCOLO/Parent-Child Interaction Observation Form, which was used to collect the quantitative data in the study, and how video recordings of mother-child play interactions would be taken. All of the video recordings were watched by the researcher and an expert together and each mother's behaviors in play interactions with her child were scored and recorded in the PICCOLO/Parent-Child Interaction Observation Form.

Parent Opinion Form

Before starting the treatment, an interview form consisting of semi-structured questions was created to determine the interaction styles of parents with their children regarding play, teaching, discipline and routines. The semi-structured interview form was created as a result of the literature review conducted in accordance with the purpose of the study. These questions were presented to three academicians and two child development specialists actively working in the field to be evaluated in terms of their suitability for the purpose of the study. After the experts' evaluations, pilot interviews were conducted with three mothers. After these pilot interviews, the form was finalized by making the necessary corrections in line with the suggestions of the mothers regarding the comprehensibility of the questions. The mothers were asked to report their parenting attitudes before participating in the DPBIP on this form.

Data Collection Method

The content of the study was explained to the 10 volunteer mothers who agreed to participate in the study from among the mothers attending the Baby Library, and the "Demographic Information Form" and "Parent Opinion Form" were completed. The PICCOLO/Parent-Child Interaction Observation Form was used for the pre-test and post-test. In this study conducted with the participation of ten mothers, the pre-test data collected using the PICCOLO/Parent-Child Interaction Observation Form are shown in Table 2; The data obtained from the post-test administered to the mothers at the end of the study are presented in Table 3.

Table 2. PICCOLO/Mother-Child Interaction Observation Form Pre-test Score Table

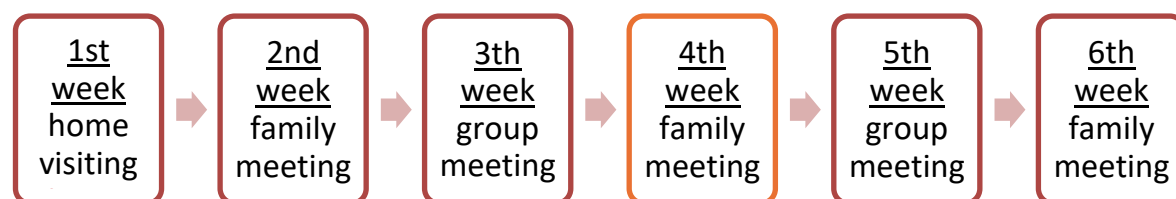
Mother Number	Affection Pre-test	Responsiveness Pre-test	Encouragement Pre-test	Teaching Pre-test	Total Pre-test Score
1	7	9	7	9	32
2	10	8	8	9	35
3	9	5	8	7	29
4	10	6	8	7	31
5	10	9	10	7	36
6	10	8	9	9	36
7	9	9	8	8	34
8	10	12	12	13	47
9	12	9	10	11	42
10	8	7	7	9	31

Table 3. PICCOLO/Mother-Child Interaction Observation Form Post-test Score Table

Mother Number	Affection Post-test	Responsiveness Post-test	Encouragement Post-test	Teaching Post-test	Total Post-test Score
1	13	12	10	11	46
2	14	11	14	15	54
3	14	9	10	10	43
4	13	9	11	10	43
5	11	14	12	11	48
6	13	12	11	12	48
7	13	10	10	10	43
8	13	14	11	12	50
9	12	12	10	10	44
10	12	11	12	13	48

The intervention program was planned for 6 weeks and 5 implementers were trained by 3 experts. The flow of the Developmental Parenting-Based Intervention Program is shown in Figure 1:

Figure 1. Developmental Parenting-Based Intervention Program Flow



In the first week of the 6-week intervention program, a home visit was made. The child's home environment and mother-child interaction were observed and the "Demographic Information Form" and "Parent Opinion Form" were filled out

together with the mother. During the home visit, information was given about the duration and content of the program, and information was obtained from the mothers about their expectations and needs regarding their child. Based on this information, the content of the individual and group sessions was created.

In the second week of the intervention program, the mothers were interviewed individually in the Baby Library, their expectations were learned and each mother-child interaction was recorded. The PICCOLO video recordings were then scored with 3 experts who supervised the program.

In the third week, the mothers were given 3-hour group training on “affection” and “responsiveness”. The group sessions began by reviewing the areas and practices that were guided in the individual interviews held a week before on the subjects of “affection” and “responsiveness”. The sub-dimensions of “affection” and “responsiveness” were addressed through individualized examples using methods such as role play, case studies, question and answer sessions, and individualized assignments. It was discussed with parents how they can integrate affection and responsiveness sub-dimensions into play and daily routines in their interactions with their children. Then, the experts conducted short individual interviews with the mothers on the subjects of “affection” and “responsiveness” and provided guidance.

Individual interviews were conducted in the fourth week of the program. Each mother was interviewed together with the practitioner, their questions were answered and the week was evaluated. In this session, mothers' interactions with their child were observed and feedback was given.

In the fifth week, a 3-hour group training on “encouragement” and “teaching” was given to the mothers. The group sessions began by reviewing the areas and practices that were guided in the individual interviews held a week before on the subjects of “encouragement” and “teaching”. The sub-dimensions of “encouragement” and “teaching” were addressed through individualized examples using methods such as role play, case studies, question and answer, and

individualized assignments. It was discussed with parents how they should follow in integrating the skills of the encouragement and teaching sub-dimensions into play and daily routines in their interactions with their children.

In the last week of the program, all developmental parenting skills were reviewed, individual interviews were conducted with mothers regarding deficiencies and improvements, and then videos were collected. The video recordings were viewed together with the program supervisors and PICCOLO post-test scores were obtained. The group session concluded by collecting information on the effectiveness of the treatment, changes in interaction skills, and mothers' opinions.

RESULTS

In the study, in order to determine whether there was a significant difference between the pre-test and post-test measurements, the normal distribution of the differences related to the pre-test and post-test measurements was tested (Field, 2009). In cases where the group size is less than 50, the normal distribution of the scores should be tested through the Shapiro-Wilks test (Büyüköztürk, et al., 2008). Findings regarding the Shapiro-Wilks test are given in Table 4.

Table 4. Shapiro-Wilk Test Results for the PICCOLO Mother-Child Interaction Scale.

Scale/Sub-dimension	Affection	Responsiveness	Encouragement	Teaching	Total
P	.537*	.479*	.519*	.268*	.321*

*P>,05

According to Table 4, the differences between the pre-test and post-test measurements of all the sub-dimensions and total scores of the PICCOLO scale were normally distributed ($p>.05$). For this reason, it was decided to use the Dependent Samples t-Test, which is a parametric test, to answer the research question and the results of the analysis are given in Table 5. The magnitude of the differences between the measurements was interpreted according to Cohen's

coefficient. A coefficient of 0.01 was interpreted as a small effect size, 0.06 as a medium effect size and 0.138 as a large effect size (Cohen, 1988).

Table 5. t-Test Results for the pre-test and post-test measurement scores of the PICCOLO Scale.

Sub-dimension	Measurement	N	$\bar{X}$	SS	sd	T	P	η^2
Affection	Pre-Test	10	9.50	1.35	9	-5.906	0.000*	0.795
	Post-Test	10	12.80	.91				
Responsiveness	Pre- Test	10	8.20	1.93	9	-8.913	0.000*	0.898
	Post-Test	10	11.40	1.77				
Encouragement	Pre-Test	10	8.70	1.56	9	-3.674	0.005*	0.600
	Post- Test	10	11.10	1.28				
Teaching	Pre-Test	10	8.90	1.91	9	-3.638	0.005*	0.595
	Post-Test	10	11.40	1.64				
Total	Pre-Test	10	35.30	5.49	9	-6.601	0.000*	0.829
	Post-Test	10	46.70	3.62				

*P<.05

According to Table 5, there was a significant difference of a large effect size between the scores of the mothers obtained from the pre-test measurement of the affection sub-dimension in the PICCOLO scale and the scores obtained from the post-test measurement ($t_9=-5.906$, $p<.05$, $\eta^2=0.795$). The mean score of the mothers in the affection sub-dimension of the PICCOLO scale after the implementation of the program ($\bar{X}=12.80$) was higher than the mean scores before the implementation of the program ($\bar{X}=9.50$).

There was a significant difference of a large effect size between the scores obtained from the pre-test measurement of the responsiveness sub-dimension in the PICCOLO scale and the post-test measurement ($t_9=-8.913$, $p<.05$, $\eta^2=0.898$). The mean of the PICCOLO scale responsiveness sub-dimension

scores of the mothers after the implementation of the program ($\bar{X}=11.40$) was higher than the mean of their pre-test scores ($\bar{X}=8.20$).

There was a significant difference of a large effect size between the scores obtained from the pre-test measurement of the encouragement sub-dimension in the PICCOLO scale and the post-test measurement ($t_9=-3.674$, $p<.05$, $\eta^2=0.600$). The mean PICCOLO scale encouragement sub-dimension scores of the mothers after the implementation of the program ($\bar{X}=11.10$) was higher than the mean score obtained before the implementation of the program ($\bar{X}=8.70$). There was a significant difference of a large effect size between the scores obtained from the pre-test measurement of the teaching sub-dimension in the PICCOLO scale and the scores obtained from the post-test measurement ($t_9=-3.638$, $p<.05$, $\eta^2=0.595$). The mean of the mothers' PICCOLO scale teaching sub-dimension scores after the implementation of the program ($\bar{X}=11.40$) was higher than the mean of their scores obtained before the implementation of the program ($\bar{X}=8.90$). There was a significant difference between the pre-test and post-test measurements of the mothers' total PICCOLO scale scores with a large effect size ($t_9=-6.601$, $p<.05$, $\eta^2=0.829$).

The mean total PICCOLO-TR score of the mothers after the implementation of the program ($\bar{X}=46.70$) was higher than the mean total score obtained before the implementation of the program ($\bar{X}=35.30$).

Before the implementation of the DPBIP, interviews were held using the Parent Opinion Form. The answers given to the questions asked to the mothers are generally as follows; Mothers said that when deciding what to teach their children, instead of consulting experts, they get information from the internet and find activities for interaction on the internet. They stated that sometimes the person who decides which toys to play with is themselves and sometimes their children. To prevent behaviors that mothers see as problematic in their children, they use methods such as distraction, displaying an authoritarian attitude, and trying to solve the problem by talking. In the interviews, mothers stated that in

order to calm their children down, they usually do things that will make their children happy. When asked whether they were flexible about routines, it was seen that there are some people who are flexible and some who are not inflexible.

DISCUSSION AND CONCLUSION:

The purpose of this study is to develop a practical and effective intervention program focused on developmental parenting, to examine the effects of an intervention program based on developmental parenting on mother-child interactions, and to determine the ways mothers interact with their children regarding play, teaching, disciplinary behaviors, and daily routines. The results of our pilot study conducted with our sample indicate that the PICCOLO-TR intervention program based on developmental parenting positively changes mothers' affection, responsiveness, encouragement and teaching behaviors. As a result of the intervention program, both the PICCOLO-TR scores of the mothers increased in each sub-dimension and in the final evaluation meeting, the mothers stated that they had acquired positive parenting skills that they were not aware of before. Positive parenting behaviors are characterized by warmth, sensitivity, responsiveness and encouragement.

The strong evidence for the cognitive benefits of early childhood development programs has been reported to be encouraging. It has also been suggested that early childhood programs improve children's social competence and interaction skills, which, when combined with education, help reduce behaviours socially unacceptable and involving health risks. The family can provide a supportive home environment for healthy development and support the child in all areas (Anderson et al.,2003). We would like to discuss these subheadings of our study, which show that affection, responsiveness, encouraging and instructive parenting skills, which are frequently mentioned especially in mother-child interactions, can be supported even with a short-term intervention program of 6 weeks.

One of the key features of healthy caregiving behavior is being responsive. Responsiveness can take various forms depending on which behavior of the child

(a sign of illness, a verbal offer, a facial expression or an exploratory attempt, etc.) the caregiver (mostly the mother) responds to (Eshel et al., 2006).

The results of our study show that the intervention program based on developmental parenting significantly supported mothers' interaction skills in line with the literature. Developmental parenting should be warm, sensitive, encouraging and communicative. The increase in the scores taken from the sub-dimensions of affection, responsiveness, encouragement and teaching at the end of the intervention program shows that we have reached results consistent with other studies. Indeed, in a study conducted by Cooper et al. (2002) in South Africa, home visits were made to 32 mother-child dyads to promote maternal sensitivity (Cooper et al., 2009). The results showed a significant improvement in mother-child interaction and in the height and weight of the babies. Indicators of the quality of the mother-child relationship are emotional closeness, warmth, positive emotions, positive gaze, and physical or verbal expressions of love (Bornstein, et al., 2006; Fuligni et al., 2013).

It has been determined that the mother's behaviors related to affection in the early stages of life promote the close relationship necessary for the healthy development of the child (Buist et al., 2017; Ge et al., 2009; McAdams et al., 2017). Affection between parent and child is associated with psychological benefits such as high self-esteem and low stress levels, as well as benefits such as relational closeness and relational satisfaction for the child (Schrodt et al., 2007). Based on these findings, it is recommended that parents should exhibit behaviors that involve emotional closeness to their children as much as possible.

Responsiveness refers to the parent's perceiving and responding appropriately to their children's cues and needs (Roggman et al., 2013b). When parents consistently respond appropriately to children's cues and needs, children develop a sense of security that their needs will be met. This responsive attitude supports the development of healthy attachment (Bowlby, 1969). Studies have revealed the positive effects of sensitivity on factors such as attachment security, adjustment,

behavioral problems, and cognitive and emotional development (Crouter et al., 2002). The sensitive interaction between the mother and child strongly affects the child's health and development, ensuring survival as well as physical, neuropsychological and psychological health (Shonkoff et al., 2000; Landry et al., 2002; Gardner et al., 2003), in their study focusing on improving the sensitivity of mothers of 234 low birth weight babies, stated that the intervention given in the first 8 weeks had a positive effect on the babies' behaviors and problem-solving skills when they were 7 months old (Gardner et al., 2003).

Encouragement includes supporting children's efforts, exploration, independence, play, choices, creativity, curiosity and assertiveness (Grossmann, et al., 2002). This allows children to successfully develop new competencies. In this way, children gain a sense of self-efficacy and motivation to master new tasks (Grossmann et al., 2002). Parents' encouraging behaviors are associated with children's experimentation while performing a task, secure attachment, sustained attention, emotion regulation, greater independence, less negativity, and reading and math ability (Landry et al., 2002; Graziano et al., 2011; Ispa et al., 2004). Mishra (2015) found that parental encouragement had a significant effect on boys' and girls' academic achievement (Mishra, 2015). In another study, Gupta (2014) found a significant relationship between parental encouragement and children's mental health (Gupta, 2014) and Bindu and Aruna (2014) found a significant relationship between executive functioning skills (Bindu et al., 2014). These results suggest that intervention programs that support mothers' encouraging behaviors in the first years of life are very important. As a matter of fact, when the opinions of the mothers taken with the Parent Opinion Form before the implementation of the DPBIP in our study were taken again at the end of the 6-week program, the mothers verbally expressed that their awareness of positive skills in their own behaviors increased.

Early childhood years are the most important years especially for the development of cognitive skills. The Abecedarian Project study examining the effects of early education intervention on cognitive and academic development patterns among

poor minority children found that intensive early childhood education can have long-term effects on cognitive and academic development in poor minority children (Champbel et al.,2001). Exploratory behaviors starting from infancy and parental knowledge transfer are the determinants of future cognitive performance. When instructive parental behavior is exhibited with sensitivity in accordance with the child's developmental pace, it supports school readiness. It is emphasized that the language and cognitive development and reading readiness of the children of parents with high teaching behavior scores are better. It was determined that the mothers who participated in the study tried to teach concepts such as number, color, and shape to their children through play, role modeling, frequent repetition, and physical and verbal support.

All these findings indicate that early intervention programs to strengthen mother-child interaction are extremely important for the development of the child. Whether the child is healthy, at risk or has developmental problems, it is necessary to evaluate and support the interaction skills of the parents in environments where the child's development is monitored and supported. Mothers are important for their children's development and the way mothers interact with their children has a significant neurodevelopmental impact. Therefore, supporting the interaction skills of primary caregivers, primarily mothers, is an important part of supporting early childhood development.

This pilot study is the first to directly address the dimensions of parental affection, responsiveness, encouragement and teaching for the first time in Turkey. The program consists of many stages such as home visits, individual and group sessions. During this process, observations and interviews for parent-child interaction, structuring and sharing developmental parenting experiences have yielded very effective results with many methods.

The main limitation of this pilot study is that there is no control group and the sample group consists of ten mothers and their children. There are different approaches to using control groups in intervention studies specific to early

childhood. A control group was not used in the study because it includes babies between 13-28 months of age, a period when development is very rapid and it is very important to have parenting skills that can respond to their needs sensitively, quickly and effectively on play and a daily basis. The sample was limited in order to get to know the study group more deeply and to provide more effective guidance according to the needs of children and families, in order to provide individual feedback on the knowledge and skills conveyed through individual home visits, group training and family meetings.

The PICCOLO-TR- Developmental Parenting-Based Intervention Program is considered to be a useful and effective approach to support parent-child interaction and positive parenting skills. It is recommended that the positive results shown in the pilot study should be tested with a larger group and that the PICCOLO parent-child interaction assessment observation method can be added to the protocols to monitor and support the development of children and that other intervention approaches that support positive parenting skills can be used. This study has a structure different from other interaction intervention programs previously implemented in Turkey. The study includes a Developmental Parenting-Based Intervention Program that directly addresses the dimensions of parental affection, responsiveness, encouragement and teaching for the first time in Turkey. Based on individual parent-child interaction observations and interviews, examples were developed by discussing the strengths and aspects that needed to be developed through the play and daily routines of each parent and child, by being a role model, and by supporting child development with the interaction skills of mothers. In addition, in group sessions, parents enriched the program with developmental parenting practices that do not work in play and daily life and with different suggestions they made. With methods such as individualized assignments, role-playing, case studies, question-answer, families found plenty of exercise and trial opportunities to learn about their strengths and weaknesses in terms of possessing developmental parenting skills that would support child-family interaction and therefore child development. This pilot study

was planned to see whether the implemented program would work in practice and the difficulties and the points to be considered during the implementation process.

REFERENCES

- Anderson, L. M., Shinn, C., Fullilove, M. T., Scrimshaw, S. C., Fielding, J. E., Normand, J., Carande-Kulis, V. G., & Task Force on Community Preventive Services (2003). The effectiveness of early childhood development programs. A systematic review. *American journal of preventive medicine*, 24(3 Suppl), 32–46.
- Ayar, G., Yalçın, S. S., & Bayoğlu, B. (2021). Do the Children of Mothers with Optimum PICCOLO Scores Have Better Denver II Test Results? *Turkish Archives of Pediatrics*, 56(5), 423.
- Bayoğlu, B., Unal, Ö., Elibol, F., Karabulut, E., & Innocenti, M. S. (2013). Turkish validation of the PICCOLO (Parenting interactions with children: Checklist of observations linked to outcomes). *Infant Mental Health J.*, 34(4), 330-338.
- Bindu, V., & Aruna, P. K. (2014). Relationship between Parental Encouragement and Process Skills in Social Studies. *Journal of Humanities and Social Science*, 19(8), 100-104.
- Bornstein, M. H., Putnick, D. L., Suwalsky, J. T., & Gini, M. (2006). Maternal chronological age, prenatal and perinatal history, social support, and parenting of infants. *Child Development*, 77(4), 875–892.
- Bowlby, J. (1969). Attachment. Attachment and loss: Vol. 1. Loss. New York: Basic Books.
- Buist, K. L., Verhoeven, M., Hoksbergen, R., ter Laak, J., Watve, S., & Paranjpe, A. (2017). Associations of perceived sibling and parent-child relationship quality with internalizing and externalizing problems: Comparing Indian and Dutch early adolescents. *The Journal of Early Adolescence*, 37(8), 1163–1190.

- Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö., Karadeniz, Ş., & Demirel, F. (2008). Bilimsel araştırma yöntemleri. Ankara: Pegem Akademi Yayınları.
- Campbell, F. A., Pungello, E. P., Miller-Johnson, S., Burchinal, M., & Ramey, C. T. (2001). The development of cognitive and academic abilities: Growth curves from an early childhood educational experiment. *Developmental Psychology*, 37(2), 231–242. <https://doi.org/10.1037/0012-1649.37.2.231>
- Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Cooper, P. J., Tomlinson, M., Swartz, L., Landman, M., Molteno, C., & others. (2009). Improving Quality of Mother-Infant Relationship and Infant Attachment in Socioeconomically Deprived Community in South Africa: Randomized Controlled Trial. *British Medical Journal*, 338, b974.
- Crouter, A. C., & Head, M. R. (2002). Parental monitoring and knowledge of children. In M. H. Bornstein (Ed.), *Handbook of parenting: Being and becoming a parent* (Vol. 3, pp. 461–484). Mahwah, NJ: Erlbaum.
- Diken, İ. H. (2012). Erken çocukluk döneminde dil becerilerini geliştirme. Ankara: Maya Akademi.
- Eshel, N., Daelmans, B., Mello, M. C. D., & Martines, J. (2006). Responsive parenting: interventions and outcomes. *Bulletin of the World Health Organization*, 84, 991-998.
- Feldman, R., Bamberger, E., & Kanat-Maymon, Y. (2013). Parent-specific reciprocity from infancy to adolescence shapes children's social competence and dialogical skills. *Attachment & Human Development*, 15(4), 407–423.
- Field, A. (2009). *Discovering Statistics Using SPSS*. 3rd Edition, Sage Publications Ltd., London.

- Fuligni, A. S., & Brooks-Gunn, J. (2013). Mother–child interactions in Early Head Start: Age and ethnic differences in low-income dyads. *Parenting*, 13(1), 1–26.
- Gardner, J. M., Walker, S. P., Powell, C. A., & Grantham-McGregor, S. (2003). A randomized controlled trial of a home-visiting intervention on cognition and behavior in term low birth weight infants. *J Pediatr*, 143, 634-9.
- Ge, X., Natsuaki, M. N., Neiderhiser, J. M., & Reiss, D. (2009). The longitudinal effects of stressful life events on adolescent depression are buffered by parent-child closeness. *Development and Psychopathology*, 21(2), 621–635.
- Gravener, J. A., Rogosch, F. A., Oshri, A., Narayan, A. J., Cicchetti, D., & Toth, S. L. (2012). The relations among maternal depressive disorder, maternal expressed emotion, and toddler behavior problems and attachment. *Journal of Abnormal Child Psychology*, 40(5), 1–11.
- Graziano, P. A., Calkins, S. D., & Keane, S. P. (2011). Sustained attention development during the toddlerhood to preschool period: Associations with toddlers' emotion regulation strategies and maternal behavior. *Infant and Child Development*, 20(6), 389–408.
- Grossmann, K., Grossmann, K. E., Fremer-Bombik, E., Kindler, H., Scheurer-Englisch, H., & Zimmermann, P. (2002). The uniqueness of the child-father attachment relationship: Father's sensitive challenging play as a pivotal variable in a 16 year long study. *Social Development*, 11, 307-331.
- Gupta, R. P. (2014). Study of parental encouragement in relation to mental health of secondary school students. *International Journal of Behavioural Social and Movement Sciences*, 3(2), 8-15.
- Ispa, J. M., Fine, M. A., Halgunseth, L. C., Harper, S., Robinson, J., Boyce, L., Brooks-Gunn, J., & Brady-Smith, C. (2004). Maternal intrusiveness, maternal warmth, and mother-toddler relationship

- outcomes: variations across low-income ethnic and acculturation groups. *Child development*, 75(6), 1613–1631.
- Landry's. H., Smith, K. E., & Swank, P. R. (2002). Environmental effects on language development in normal and high-risk child populations. *Seminars in Pediatric Neurology*, 9(3), 192–200.
- McAdams, T. A., Rijdsdijk, F. V., Narusyte, J., Ganiban, J. M., Reiss, D., Spotts, E., Neiderhiser, J. M., Lichtenstein, P., & Eley, T. C. (2017). Associations between the parent-child relationship and adolescent self-worth: a genetically informed study of twin parents and their adolescent children. *Journal of child psychology and psychiatry, and allied disciplines*, 58(1), 46–54.
- Mishra, K. (2015). Impact of parental encouragement on academic achievement of middle school students. *Indian Streams Research Journal*, 5(7), 1-4.
- Roggman, L. A., Boyce, L. K., & Innocenti, M. S. (2008). *Developmental parenting: A guide for early childhood practitioners*, 1-20.
- Roggman, L. A., Cook, G. A., Innocenti, M. S., Norman, V. J., & Christiansen, K. (2013). Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO) in diverse ethnic groups. *Infant Mental Health Journal*, 34, 290–306.
- Schrodt, P., Ledbetter, A., & Ohrt, J. (2007). Parental Confirmation and Affection as Mediators of Family Communication Patterns and Children's Mental Well-Being. *The Journal of Family Communication*, 7, 23-46.
- Selcuk, E., Gunaydin, G., Sümer, N., Harma, M., Salman-Engin, S., Dogruyol, B., & Öztürk, A. (2013). Self-reported romantic attachment style predicts everyday maternal caregiving behavior at home. *Journal of Research in Personality*, 44, 544-549.

- Shonkoff, J. P., & Phillips, D. A. (2000). From neurons to neighborhoods: The science of early child development. Institute of Medicine. Washington (DC): National Academy Press.
- Ulutaş, A., & Aksoy, A. B. (2016). Ev merkezli anne-bebek etkileşim programının annelerin duyarlılık ve karşılıklı etkileşim davranışları ile bebeğin gelişimine etkisi. *Eğitim ve Bilim*, 41(186).
- Verhage, M. L., Schuengel, C., Madigan, S., Fearon, R. M. P., Oosterman, M., Cassibba, R., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2016). Narrowing the transmission gap: A synthesis of three decades of research on intergenerational transmission of attachment. *Psychological Bulletin*, 142(4), 337–366.
- Vilaseca, R., Rivero, M., Ferrer, F., & Bersabé, R. M. (2020). Parenting behaviors of mothers and fathers of young children with intellectual disability evaluated in a natural context. *Plos one*, 15(10), e0240320.
- Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., Golinkoff, R. M., COMMITTEE ON PSYCHOSOCIAL ASPECTS OF CHILD AND FAMILY HEALTH, & COUNCIL ON COMMUNICATIONS AND MEDIA (2018). The Power of Play: A Pediatric Role in Enhancing Development in Young Children. *Pediatrics*, 142(3), e20182058. <https://doi.org/10.1542/peds.2018-2058>
- Öztürk, S. (2011). Roy adaptasyon modeline göre postpartum dönemdeki annelere verilen eğitimin anne duyarlılığın etkisi. Doktora Tezi, Atatürk Üniversitesi Sağlık Bilimleri Enstitüsü, Erzurum.