

The Effectiveness of Parenting Program Based on Video Interactive Guidance

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Abstract

This study aimed to assess the impact of a video-based interactive guidance (VIG) training program on parents' anxiety, depression levels, coping styles, and interactions with their infants. The sample comprised eight children aged 24-40 months years diagnosed with autism spectrum disorder and/or developmental delay. After the diagnostic process, the parents participated in a 4-session VIG parenting program. Pre- and post-implementation comparisons were made on various variables. Data were collected from mothers using sociodemographic forms, Beck Depression Inventory, State Trait Anxiety Inventory, The Ways of Coping Inventory, parenting attitudes styles, and Crowell procedure (PIR-GAS) scores. Our findings revealed that following VIG, the quality of parent-child relationships improved significantly compared with earlier assessments, as observed through PIR-GAS evaluations. Moreover, there was a notable decrease in ineffective coping styles among parents. The VIG outlined in this study proved to be a highly successful psychological therapy method for children and preschoolers. However, while these results are significant, evidence supporting this program's effectiveness for mothers and children in early childhood is limited, emphasizing the need for further research.

Keywords: Video-based interactive guidance, parental training, infant, relationship



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Introduction

Parents play a fundamental role in the healthy development of their infants through their abilities to perceive, understand, and manage their own and their infants' emotions.¹ Many scientific studies have illustrated how the parent-child relationship significantly influences infant perceptions and developmental processes during infancy and early childhood.^{2,3} The alignment of emotional shifts within the parent-child bond lays the groundwork for the infant's future adaptive skills. Neglecting to adequately address the baby's needs during this period can result in enduring challenges that prove hard to overcome in later life.⁴ In addition, the infant-parent relationship can play a protective role by reducing the negative effects of environmental risk factors that may be seen in the infant's developmental process.⁵ This relational bond helps children to better regulate their negative emotions in times of stress, develop better social skills, become more confident in exploring their environment, and build the foundation for other relationships.⁶ For all these reasons, the focus of infant mental health is on relationships rather than psychopathologies.⁷

In this context, it is important to identify the early antecedents and risk factors of developmental deviations based on relationship problems.⁶ The parent-child relationship is acknowledged as a significant risk factor for the onset of early psychopathology.⁸ However, what is even more significant is that parenting can be modified and molded. Therefore, parent training programs to improve parenting early on, when all the child's biological systems are rapidly forming, are likely to be effective for both aspects of the relationship.⁹ Parenting programs stand as the primary early intervention strategy for addressing child mental health and behavioral issues. These parent training programs mainly improve parents' ability to recognize, interpret, and respond appropriately to their children's signals.¹⁰

Interventions employing video feedback techniques enhance children's behavior by fostering heightened parental sensitivity. These interventions typically involve observing parents and infants engaging in play together, with subsequent review sessions conducted with a therapist to emphasize positive interaction moments.¹¹ In our infant mental health outpatient clinics, the video interaction guidance (VIG) program is used most often. Despite being a commonly used intervention program, there are few pilot studies and limited data regarding its effectiveness. The aim of this study was to evaluate the effectiveness of this method on the mother's mental state, coping styles, and parenting attitudes.

Material and Method

Procedure

In this study, eight children aged 24-40 months who were admitted to the Ankara University Infant Mental Health Unit and diagnosed with autism spectrum disorder and/or developmental delay were included.

Approval was obtained from the Human Research Ethics Committee of Ankara University (date: 25.04.2024 and

decision number: İ03-283-24) to examine and analyze the psychiatric and psychometric evaluation results of the included infants and mothers. Informed consent was not required for our study because the available data for these evaluations, which we routinely perform in Ankara University Infant Mental Health Unit, were retrospectively analyzed. After obtaining detailed medical histories from the parents of infants who presented to our clinic and completing a sociodemographic data form, the Crowell procedure was administered. Infants were diagnosed using the DC 0-3 diagnostic system during Crowell assessment. The evaluation team assessed the infant-parent relationship for the necessity of intervention. After the diagnostic procedure, the parents of the participants engaged in a four-session parenting program based on interactive guidance. The groups were assessed before and after program implementation to compare variable rates. As part of the research study, comprehensive data on mothers' mental states, coping methods, and attitudes toward their children were gathered using various instruments. These tools included the Beck Depression Inventory (BDI), the State-Trait Anxiety Inventory (STAI), the Ways of Coping Inventory (WOC), and the Parental Attitude Research Instrument (PARI).

Measures

Sociodemographic Data Form

This structured questionnaire was designed by the researchers to collect information about the social and demographic characteristics of the participants. The researcher filled out this form with the information received from the parents.

Beck Depression Inventory

The BDI is a widely recognized self-report questionnaire that consists of 21 questions with scores ranging from 0 to 63 points and is used to measure the severity of depression.¹² Over the years, the psychometric properties of the BDI have been extensively evaluated, demonstrating its reliability and validity in assessing depressive symptoms.^{13,14} The BDI has been widely used in various settings, including medical patients,¹⁵ psychiatric outpatients,¹⁶ and caregivers of individuals with specific health conditions.¹⁷ Higher BDI scores indicate more severe depressive symptoms.¹⁸ The psychometric properties of the Turkish version of the BDI have been evaluated with respect to other scales, demonstrating good convergent and discriminant validity.¹⁹ A Turkish validation and reliability study of the BDI was conducted by Hisli, further solidifying its usefulness in evaluating depression levels in the Turkish population.²⁰ This assessment scale was used to evaluate the depression symptoms of the mothers included in our study.

The State-Trait Anxiety Inventory

The STAI is a widely used tool for assessing anxiety in various populations. It consists of two subscales: The State Anxiety Inventory and the Trait Anxiety Inventory, each containing 20 items. The scores on the STAI range from 20 to 80, with higher scores indicating higher levels of anxiety.²¹ STAI differentiates between temporary state

anxiety and stable trait anxiety.²² It has been validated and shown to have good psychometric properties, including internal consistency and reliability.²³ The STAI has been adapted into Turkish, showing good reliability with Cronbach's alpha coefficients ranging from 83 to 96.²⁴ This assessment scale was used to evaluate the anxiety symptoms of the mothers included in our study.

The Ways of Coping Inventory

The WOC is a well-established psychological tool used to evaluate coping strategies in various populations facing different stressors. Initially developed by Lazarus and Folkman in 1984, the inventory has been tailored for specific contexts such as cancer patients.²⁵ It comprises 30 items and encompasses subscales like self-confidence, optimism, submissiveness, helplessness, and seeking social support.²⁶ The WOC has been applied in research focusing on coping with diverse challenges, and the Turkish version of the WOC has been utilized in research comparing stress responses between migraineur and non-migraineur women, showing its applicability in studying stress-related phenomena.²⁷ This assessment scale was used to determine the methods of coping with stress factors of the mothers included in our study.

Parental Attitude Research Instrument

The PARI is a Likert-type attitude scale developed by Schaefer and Bell in 1958.²⁸ This instrument consists of 115 items and has been widely used to assess parental attitudes toward various aspects of child rearing and family life. The PARI has been utilized in diverse studies to evaluate parental attitudes on topics such as child care, parenting skills, resilience, dental fear, and attitudes toward specific disorders like Internet gaming disorder and asthma medication adherence.²⁹ This assessment scale was used to evaluate the attitudes and behaviors of the mothers included in our study toward their children.

Crowell Procedure

The Crowell procedure is a method designed to assess the interaction between caregivers and children in a clinical setting, specifically targeting children aged approximately 12-60 months.³⁰ This procedure involves observing and evaluating the problem-solving behavior of both the caregiver and the child during a semi-structured interaction.³¹ This study aims to provide insights into the dynamics of the caregiver-child relationship and can be used to predict subsequent interactions between the mother and child, as well as internalize symptomatology in children.³² The Crowell procedure is considered a formal assessment tool for parent-child interactions, offering a structured approach to evaluating the quality of these interactions.³³

Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood (DC:0-3)

This classification is a multi-axial diagnostic system used for psychiatric evaluations of children under the age of 3. It comprises the clinical disorder of the infant (Axis I), relationship classification (Axis II), which underscores the pivotal role of the parent-infant relationship, medical and developmental disorders and conditions (Axis III), psychosocial stressors (Axis IV), and emotional and social functioning of the infant (Axis V). In the DC: 0-3 classification system, the parent-infant relationship global assessment scale (PIR-GAS) assesses the quality of the parent-child relationship, considering the frequency, intensity, and duration of maladaptive interactions. Scores range from 10, indicating gross impairment, to 90, representing highly functional relationships. Scores below 40 signify a disordered relationship.³⁴

Highlights

- It is important to evaluate the parent-infant relationship during intervention for mental health problems in infancy.
- The video-based interactive guidance (VIG) program is one of the most important parenting programs implemented in clinical practice and has been demonstrated to be effective.
- The VIG program enhances parents' ability to understand and respond appropriately to signals from their infants.

Interactive Guidance-Based Parenting Program

VIG is a method that offers guidance and support to parents in establishing positive contact and attunement with their infants. Its effectiveness has been proven to promote secure attachment between parents and children, reduce parental stress, and improve child development outcomes. VIG is a flexible intervention that can be adapted to various settings and cultural contexts, making it a valuable tool for promoting positive parent-child relationship worldwide.³⁵ The VIG method uses edited video feedback to help parents recognize their strengths and reaching their desired objectives. VIG interventions typically consist of 3-5 sessions and involve adopting a collaborative and empowering approach toward the parents and providing a framework of theoretically derived communication/contact principles to analyze interactions. The edited film elements provide feedback on "positive exceptions", facilitating reflection and developing parental self-efficacy by discussing these self-modeling examples.

Statistical Analysis

The data analyses were conducted using Statistical Package for Social Sciences version 23.0, with p-values <0.05 considered statistically significant. The study data were evaluated using the Wilcoxon signed rank test.

Results

Sociodemographic Characteristics of the Children

The study sample comprised eight children, consisting of two females and six males, with ages ranging from 24 to 40 months. The sociodemographic characteristics of the cohort encompassing parental features, family type, and clinical diagnoses of children are presented in **Table 1**.

Comparisons of psychiatric assessment tools between pre- and post- parental intervention are summarized

in **Table 2** (Wilcoxon signed ranked test). In the observational assessment of caregiver-child interaction using PIR-GAS before and after video interactive guidance, it was found that following this parenting program, the quality of parent-child relationship was higher than that before assessments. Additionally, psychiatric assessment scale scores revealed a decrease in parental depression and anxiety levels after the intervention; however, there was no statistically significant difference. Similarly, although a slight decrease was observed in the subscales of parental attitude styles, these changes were not statistically significant. Nevertheless, when comparing the coping strategies of parents, significant improvements were detected, particularly in ineffective style scores.

Discussion

The aim of this study was to evaluate the levels of depression, anxiety, perceptions and attitudes toward their infants, and coping styles of mothers with infants having different psychopathologies before and after a parenting program based on interactive video guidance. Our study findings suggest that the video-based interactive guidance program may have a positive impact on parents' coping skills and interactions with their infants.

The evidence supporting the effectiveness of VIG in enhancing interaction between parents and their children is increasingly growing.^{36,37} A meta-analysis of 20 studies (involving 1757 parent-child pairs) on the effectiveness of this parent education and intervention program reported results indicating an increase in

Table 1.
Sociodemographic and clinical characteristics of children

Variables	Children (n=8) mean \pm SD (min-max)/n (%)
Gender, n (%)	
Female	2 (25)
Male	6 (75)
Child age (months)	32.25 \pm 5.47 (24-40)
Mothers' age (years)	35.24 \pm 4.99 (24-44)
Fathers' age (years)	41.50 \pm 3.77 (35-47)
Mothers' education level (years)	13.50 \pm 1.77 (12-16)
Fathers' education level (years)	14.50 \pm 2.77 (8-16)
Number of siblings	0.75 \pm 0.70 (0-2)
Family type, n (%)	
Intact family	8 (100)
Psychiatric diagnosis, n (%)	
Intellectual disability	3 (37.5)
Autism spectrum disorder	2 (25)
Intellectual disability + autism spectrum disorder	3 (37.5)

SD; Standard deviation, Min; Minimum, Max; Maximum

Table 2.
Comparison between the pre- and post-treatment scores of psychiatric assessment tools

Assessment tools	Pre-treatment median (IQR)	Post-treatment median (IQR)	P value*
Observational scores			
PIR-GAS	40 (30-50)	60 (57.5-72.5)	0.038
Scales scores			
BDI	15 (7.5-18.75)	7.5 (3.25-16.75)	0.293
STAI-state	41 (29.5-59.5)	36.5 (25.5-51.5)	0.292
STAI-trait	43.5 (37-58.75)	42.5 (31-54.25)	0.292
STAI-total	84.5 (68.75-113.25)	77 (58.5-105.75)	0.237
The Ways of Coping Inventory			
Effective coping styles	33 (30-42)	32.5 (30.5-36.75)	0.248
Ineffective coping styles	15.5 (11.75-26.75)	9 (4.25-14.5)	0.027
Parental attitude research instrument			
Democratic	69 (36.5-78)	68.5 (29.5-74.75)	0.674
Authoritative	22.5 (18-40.25)	17 (15.25-41.25)	0.623
Permissive	27.5 (22.5-33)	27.5 (22.5-33)	1
Protective	33.5 (20-38.5)	31.5 (21.75-34.5)	0.606

IQR; Interquartile range, PIR-GAS; Parent infant relationship- global assessment scale, BDI; Beck Depression Inventory; STAI; State-Trait Anxiety Inventory
The characteristics of non-normally distributed variables, median (IQR), serve as representative measures.

Bold values indicate statistical significance.

* Wilcoxon signed rank test

parental sensitivity up to 6 months post-intervention. The meta-analysis of two studies (involving 166 parent-child pairs) reported results indicating an increase in the likelihood of secure attachment after intervention. The meta-analysis of two studies (involving 119 parent-child pairs) with long-term follow-up periods found no evidence of effectiveness on children's behavior. In addition, there is insufficient evidence to suggest a significant effect of interactive guidance programs based on video feedback on parental stress or anxiety.^{36,38,39} When interpreted in the context of sample sizes, diversity of measurement tools, and differences in follow-up periods, these findings suggest a need for further evidence regarding the impact of interactive guidance programs based on video feedback on longer-term outcomes such as attachment and children's behavioral outcomes. However, research consistently indicates that early and targeted intervention programs can be effective tools for increasing parental sensitivity and improving parenting behaviors and attitudes.^{36,39} The result presented in the meta-analysis, indicating a reverse relationship between the duration of the program and its effectiveness on parenting behavior, is quite intriguing and deserves further investigation through long-term follow-up studies.³⁶

In our study, a positive improvement was observed in the PIR-GAS scores measuring parent-infant interaction following VIG. However, no significant change was observed in parents' attitudes toward their infants. Barlow and McMillan,⁴⁰ in their study evaluating parental attitudes, demonstrated that VIG is particularly beneficial in preventing the emergence and recurrence of emotional maltreatment in parents. The process leading to this effect is primarily described as interpersonal. In interactive guidance programs based on video feedback, the focus is not solely on the experience of the child or the parent, but rather on what is happening between these individuals. By promoting a dialogical structure that encourages mentalization, parents can mutually experience creating space in their minds for their baby and understanding how this affects their baby's mind.⁴¹ Throughout this process, it is assumed that a series of metacognitive changes may be observed stemming from the inconsistency between parents' beliefs about parenting skills and what they can see in the video. Additionally, an increase in self-efficacy and reflective skills is expected.³⁸

According to our study findings, no significant change was observed in the levels of depression and anxiety among parents before and after VIG. It is highly likely that all the infants we evaluated have a potentially persistent psychopathology, and there is a possibility that their parents may have developed depression or anxiety disorders as a result. This could reduce the effectiveness of the implemented program and could be a factor influencing our findings. Depression can limit a parent's emotional availability and therefore have both short-term and long-term negative effects on the child's emotional, social, cognitive, and physical development.⁴² Additionally, mothers with depression are more likely to report parenting stress and have more intense negative perceptions of their infants'

behaviors.⁴³ Interventions aimed at reducing maternal depression levels do not always have a direct effect on the interaction between the mother and child. Feedback received following a group intervention using VIG to reduce postpartum depression in mothers has shown an increase in mothers' awareness and enjoyment in their relationships with their babies, as well as a decrease in their depression while becoming more attuned to their child.⁴⁴ Several studies evaluating the use of VIG in preterm infants have shown improvement in parents' sensitive behaviors and a decrease in withdrawn behaviors, but no change in intrusive attitudes.^{11,45}

Another important point emphasized in studies evaluating the effectiveness of VIG and similar intervention programs is the presence of accompanying risk factors in the family system. VIG programs focusing on parent-child interaction are particularly successful in alleviating parental stress in the context of interaction difficulties (i.e., at the parent-child level). However, their impact may be lower in addressing other significant issues at the parent level (such as maternal depression) or at the family level (such as poverty, isolation).³⁶ Conversely, certain studies indicate that this method is notably effective in families facing significant challenges, such as those affected by domestic violence, adult mental health issues, and parental substance abuse.⁴⁶ Consequently, parent intervention programs targeting families with significant accompanying risk factors should be an integral part of a comprehensive treatment process.

VIG is recognized today as an evidence-based intervention program. It has been recommended as an effective method in the National Institute for Health and Care Excellence guidelines and the Wave Trust's overview of effective interventions from pregnancy to age 2.^{47,48} It is currently widely implemented in different countries around the world.⁴⁹ This intervention program appears to be a promising method not only for parents but also for educators working with infants and young children in enhancing their social and emotional support for children.⁵⁰ Comprehensive follow-up studies on this topic will enhance our current knowledge.

Study Limitations

This study has several limitations. First, our sample size was insufficient to generalize the findings. The results need to be confirmed in larger samples. Furthermore, in our study, the effectiveness of the video-based interactive guidance program was evaluated in infant-mother dyads with different psychopathologies. To eliminate the effect of possible confounding factors related to psychopathology, evaluation in a more homogeneous group may provide important results.

Conclusion

Our research reveals evidence of favorable alterations in parent-infant interaction and a reduction in parents' ineffective coping strategies following participation in the video-based interactive guidance program. Reflecting on advancements thus far, addressing infant mental health within the framework of their primary relationships, with a focus on relationships, holds

significant importance in comprehending the onset of psychopathology. Consequently, parenting education programs implemented in clinical settings are poised to serve as effective interventions within broader systems that encompass both infants and their parents.

Ethical Approval: The study was approved by the Ankara University Human Research Ethics Committee (date: 25.04.2024 and decision number: İ03-283-24).

Informed Consent: Because the study was designed retrospectively no written informed consent form was obtained from the patients.

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