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The Effectiveness of the Family-Centered Sensory and Motor Interactive Games Program on Strengthening the Developmental and Motor Skills of Children aged 12 to 24 Months Who Have a Prior History of Low Birth Weight

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Extended Abstract

Aim

Ongoing interventions in the biological, motor, cognitive, and affective domains are necessary for infants with low birth weight (White-Traut et al., 2018). Low birth weight is a condition in which the mass of the newborn is below 2500 grams. Developmental delay is three times more prevalent in neonates weighing less than 2500 g compared to infants of normal weight (Drozd-Dąbrowska, Trusewicz & Ganczak, 2018). Particular emphasis is placed on developmental and motor skills during childhood, especially in infants with a family history of low birth weight. This is due to the combination of low birth weight and inadequate motor abilities, coupled with parental apprehension and pressure phobia. Particular emphasis must be placed on the instruction of games and activities that are conducive to the motor and developmental skills of young children during their formative years. Yu & Smith (2017) concluded in their study titled “Effectiveness of sports-motor interventions on improving the motor performance of children with motor delay” that a course of sports-motor intervention exercises improves the motor performance of children with motor delay. However, the effectiveness of these programs for children with sensory problems has been the subject of few studies. Consequently, further investigation into the efficacy of sensorimotor interactive games was warranted. In light of this, the current investigation was undertaken to address the following query: “To what extent do family-oriented sensory-motor interactive games contribute to the enhancement of motor and developmental abilities in children between the ages of 12 and 24 months who have a prior history of low birth weight?”

Methodology

The current study employs a combined methods approach, incorporating both qualitative and quantitative methods. In Tehran in the year 2021, the statistical population of the present research comprised infants between the ages of 12 and 24 months who had a documented history of low birth weight. 38 infants who met the inclusion and exclusion criteria (weighting less than 2500 grams at birth, age range of twelve to twenty-four months, and first birth order, as well as concurrent participation in the same educational intervention, absence of more than two sessions in educational sessions, and hearing and vision impairments) were selected using the available sampling method among infants with a history of low birth weight in Tehran. In addition to 16 sessions, the intervention program for infants with a history of low birth weight consists of two 50-minute sessions dedicated to mother's education and interactive sensory-motor games. The research data were analyzed using two

distinct types of statistical methods: descriptive and inferential. Data analysis was done using statistical analysis software in social sciences version 26.

Findings

An analysis of the developmental skills components (communication skills, gross motor skills, fine motor skills, problem solving, and social skills) of infants aged 12 to 24 months with a history of low weight was conducted under the assumption of normality. As evidenced by the significance level values exceeding 0.05 for all components of developmental skills on both the pre-test and post-test, the assumption of normality regarding the distribution of the variables was confirmed in the examined infants. The results of covariance analysis were utilized to investigate the impact of a family-oriented interactive sensory and motor games program on children between the ages of 12 and 24 months who had a prior history of low birth weight. Specifically, the analysis compared the scores of the developmental skills components of the entire test in the post-test with those of the control group. Significance is present (at a significance level below 0.05). Thus, it is evident that children with a history of low birth weight between the ages of 12 and 24 months who receive intervention possess a greater variety of developmental skill dimensions than other children.

Conclusion

The purpose of this research was to examine the efficacy of a movement and sensory interactive games program designed for families on infants between the ages of 12 and 24 months who have a medical history of low birth weight. The findings of this research investigation indicate a statistically significant disparity in the mean scores of the developmental skills subscales between the experimental and control groups. To clarify, the experimental group children exhibit a greater degree of developmental proficiency in comparison to the control group children subsequent to their participation in the educational program. Drawing from prior investigations, it is possible to assert that family-oriented sensory and motor interactive activities have the potential to directly enhance the developmental capabilities of children who have experienced a history of being underweight, as described in the present study's findings. It is followed by the occurrence of normal growth and delivery. According to the results of this study, a critical measure for enhancing children's motor skills is a radical shift in the perspective of parents and an emphasis on educational and practical games. In other words, parental involvement and consideration of useful and practical games are essential for this to be effective.

Keywords: Children, Developmental Skills, Low Birth Weight, Motor Skills, Sensory and Motor Interactive Games Program.

Ethical Considerations

In order to adhere to ethical principles, parental consent was obtained for participation in the intervention program, and all intervention stages were communicated. Additionally, parents in the control group were assured that they would receive the intervention after the research process was completed. Participants in both groups were assured that their information would remain confidential and anonymity was ensured. This research has been approved by the ethics code IR.UT.PSYEDU.REC.1400.051 from the University of Tehran.

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Conflict of Interest

According to the authors' statements, there are no conflicts of interest in this research.

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