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NEWSLETTER

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## **A Longitudinal Study on the Immediate and Long-term Effects of Television Exposure on Preschoolers' Executive Function**

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**E**XECUTIVE function comprises a series of higher-order cognitive abilities of individuals that can effectively regulate their behavior and thinking. It has three main components: working memory, inhibition, and set shifting. Young children need to use their executive function to make plans, eliminate interference, keep focused, and memorize and retain information, as well as to adapt themselves to different rules and perform self-monitoring. Childhood executive function affects children's development in various aspects, such as psychology, social adaptation, early language ability, etc. It can also predict their later academic achievements and lay a foundation for the development of higher cognitive competences in their adulthood. Television is one of the most popular electronic media. Existing research on the impact of television exposure on child development found that children's television viewing time is somewhat correlated with their executive function.

This study adopted longitudinal research design and lasted for one year, aiming to examine the immediate and long-term effects of television exposure on preschoolers' executive function. Cluster sampling were conducted in three kindergartens in Ningbo City of Zhejiang Province and a total of 289 subjects included in the study with 29 kids in the 2-year-old group, 74 in the 3-year-old group, 65 in the 4-year-old group, and 121 in the 5-year-old group. The media use questionnaire (parents' version) and the preschool children's executive function scale were used to collect children's data in the first, sixth, and twelfth months through the same process. The cross-lagged regression was applied in data analysis.

The research results showed that, over time, children's executive function scored significantly more points in the 12th month than at the outset and in the 6th month of the study. At all three points of investigation, children spent more time watching TV on weekends than weekdays, and their weekly television viewing time was negatively related to their executive function, demonstrating that has an immediate negative impact on their executive function. However, television exposure could not predict children's

executive function in a long term, indicating that the longitudinal connection between television viewing time and executive function in young children is not significant.

The study makes the following suggestions to parents of preschool children: (i) Avoid exposing children to television at too early an age; (ii) Set a time limit on children's television watching; (iii) Enrich children's home activities during weekends and holidays; (iv) Engage in high-quality parent-child interaction and reduce dependence on digital games.

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