



# Investigation of the Evolution of Attention Abilities, and Emotional Recognition in Children with Normal and Abnormal Development

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## Abstract

**Aim:** The purpose of the present study was to investigate the evolution of attention and emotional recognition abilities in preschool and elementary school children with normal and abnormal development. **Methods:** The current research was a descriptive and comparative study. The research population included all hyperactive children under treatment at Mashavah Rouhana and Tivat centers and preschool and primary school children in schools in District 1, 2 and 3 of Tehran in the academic year of 2017-2018. Among these children, 410 children were selected using a multi-stage random sampling method. To collect data, the continuous performance test of Rossold et al. (1956) and Ekman's emotion recognition test (2007) were used. To analyze the data, one-way analysis of variance and Tukey's post hoc test were used by SPSS-22. **Results:** The results of the analysis of variance showed that the participants in two groups, normal and hyperactive, have different ability to pay attention and recognize emotions, and this difference is significant in all components at the 0.001 level. **Conclusion:** According to the results of the present study, attention and emotional recognition in children play an important role in improving their social communication and academic performance. Therefore, examining and strengthening it in primary school ages around 4 to 8 years old and even up to 12 years old when the transformation of the frontal parts is complete, plays an important role in academic success. **Keywords:** Attention Abilities, Emotional Recognition, Normal and Abnormal Development.

## Introduction

The foundations of knowledge, skills, and attitudes are formed from the preschool Age. Therefore, it is necessary to pay attention to any educational development and innovation from the early years of childhood. Unlike children with normal development, children with attention deficit hyperactivity disorder have many problems developing mental and cognitive abilities and do not grow normally in this area. Attention Deficit Hyperactivity Disorder is a pattern of problems that usually occur in childhood. This disorder is associated with attention deficit, hyperactivity disorder, impulsive behaviors, or a combination. The importance of addressing the cognitive-emotional development of children and its role in learning and, consequently, the future life of children is undeniable. Numerous researches have been done on attention abilities, and emotional recognition in preschool and primary school children, but so far, comprehensive research has yet to be conducted on the evolution of the mentioned abilities in preschool and primary school children with natural and non-natural development. Thus, such research helps to examine the evolution of children's attention and emotional recognition. This study investigated the evolution of attention abilities and emotional recognition in preschool and primary school children with Normal and abnormal development.

## Method

The present study was descriptive and comparative. The study population included all preschool and elementary school students in school districts 1, 2 and 3 of Tehran and hyperactive children treated in Rouhana and Taadol counseling centers in the 2018-19 academic year. 410 children were selected from these children using a multi-stage random sampling method. In order to select the sample of natural students, first from preschool and primary school centers in Tehran, 3 districts were randomly selected, and then from among these three districts, 3 schools were randomly selected. Then, 2 classes were randomly selected from each school in each grade. After that, according to the inclusion and exit criteria of the research, 410 students from these classes were selected as a sample group with natural evolution. Inclusion criteria in this group were: being a preschool and primary school student in the chosen area, Conscious satisfaction and desire to participate in research. Also, to select a sample of students with abnormal development, 60 students with ADHD disorder were purposefully selected as a sample group from those referred to Rouhana and Taadol Counseling Centers. Inclusion criteria in this group were: Diagnosis of ADHD according to the opinion of relevant experts and age range appropriate for preschool and elementary school. Exclusion criteria; Physical problems affecting the result of the research, do not answer more than 30% of questions. Ethical considerations: All subjects who received information about the study at any time could leave the study. They were assured that all information would remain confidential and only be used for research purposes. For privacy reasons, the subjects' details were not recorded. In the end, all of them received informed consent. Continuous performance test, N-BACK test and emotion recognition test were used to collect data. One-way analysis of variance and Tukey post hoc test by SPSS-22 were used to analyze the data.

## Results

Findings from demographic data showed that among 410 subjects, 199 (48.5%) were girls and 211 (51.5%) were boys. The study subjects had an age range of 5 to 11 years, among which 8 years had the highest frequency (15.6%). Analysis of variance test was used to compare attention abilities and emotional recognition in preschool and elementary school children with normal and abnormal development. Before presenting the results of the analysis of variance, the assumptions of parametric tests (Normality of data distribution, homogeneity of variance, Equality of variances assumption) were evaluated. First, the Normality of data distribution was checked and confirmed using Kolmogorov-Smirnov Test ( $p > 0.05$ ). Levene's test also tested the assumption of homogeneity of variance, which showed the results for the variables of ability to pay attention ( $F=2.56$ ,  $P=0/194$ ) and emotional recognition ( $F=1.44$ ,  $P=0/264$ ) were not significant. So, the assumption of homogeneity of variance was observed. Also, the results of the Mauchly test showed that the equality of variances assumption was observed in the variables of ability to pay attention and emotional recognition ( $P < 0.05$ ). The results showed that attention abilities and emotional recognition improve in children with normal development as they age. The analysis of variance showed that participants in normal and hyperactive groups have different abilities of attention and emotional recognition. This difference is significant in all components at the level of 0.001. Tukey post hoc test was used to examine the differences between the two groups in more detail in the mentioned variables. The post hoc test results showed that the group of normal children in all components had higher scores than the group with hyperactivity and the difference between the two groups was significant at the level of 0.001.

## Conclusion

The results of this study indicated that attentional abilities and emotional recognition in students are age-dependent and with age increase, attentional abilities and emotional recognition grow and develop. According to the results of the present study, attention and emotional recognition in students have an important role in improving their social relationships and academic performance. Therefore, examining and strengthening it in primary school, ages 4 to 8 years old and even up to 12 years old when the development of forehead parts is complete, has an important role in academic success. On the other hand, it is suggested that attention abilities and emotional recognition be examined through standardized tests and the results be recorded in the student's files. Like other studies, the present study has some limitations. Among the limitations of the present study, we can mention the present study's design and the use of cross-sectional methods, which will not lead to the stability of results. Among the other limitations of the present study, we can mention the limited research on preschool and elementary school students in Tehran, so it is suggested that other similar research be done with different occupational groups in other cities and with different cultures to Remove the limit of generalizability of the results.

### References

- Arlington, V. A. (2013). Association, AP Diagnostic and Statistical Manual of Mental Disorders. *Am. Psychiatr. Assoc*, 5, 612-613.
- Conway, A. R., Kovacs, K., Hao, H., Rosales, K. P., & Snijder, J. P. (2021). Individual differences in attention and intelligence: A united cognitive/psychometric approach. *Journal of Intelligence*, 9(3), 34.
- Denervaud, S., Mumenthaler, C., Gentaz, E., & Sander, D. (2020). Emotion recognition development: Preliminary evidence for an effect of school pedagogical practices. *Learning and Instruction*, 69, 101353.
- Dzedzickis, A., Kaklauskas, A., & Bucinskas, V. (2020). Human emotion recognition: Review of sensors and methods. *Sensors*, 20(3), 592.
- Ekman, P., & Revealed, E. (2007). Recognizing faces and feelings to improve communication and emotional life. *Emotions revealed*.
- Hafezi, A., Yarmohamadian, A., & Ghamarani, A. (2018). comparison of attentional abilities of preschool children aged 5 to 7 years. *Advances in Cognitive Science*, 19(4), 84-93.
- Konowalek, Ł., & Wolańczyk, T. (2020). Attachment and Executive Functions in ADHD Symptomatology—Independent Inputs or an Interaction?. *Brain Sciences*, 10(11), 765.
- Krasner, A. (2021). Adhd Behaviors And Social Functioning In Preschool Children: The Moderating Roles Of Inhibitory Control And Emotion Recognition.
- Lindsay, G. W. (2020). Attention in psychology, neuroscience, and machine learning. *Frontiers in computational neuroscience*, 14, 29.
- Liu, Y., & Gu, X. (2020). Media multitasking, attention, and comprehension: A deep investigation into fragmented reading. *Educational Technology Research and Development*, 68(1), 67-87.
- Martin, D., Croft, J., Pitt, A., Strelchuk, D., Sullivan, S., & Zammit, S. (2020). Systematic review and meta-analysis of the relationship between genetic risk for schizophrenia and facial emotion recognition. *Schizophrenia research*, 218, 7-13.
- Mir Mohammad Sadeghi M, Fahimifar MJ, Azad Manjir F. (2021). A systematic review of programs improving executive functions and social-emotional skills of preschoolers. *Advances in Cognitive Sciences*. 22(4):94-113.
- Neves, L., Martins, M., Correia, A. I., Castro, S. L., & Lima, C. F. (2021). Associations between vocal emotion recognition and socio-emotional adjustment in children. *Royal Society Open Science*, 8(11), 211412.
- Reisberg, K., Riso, E. M., & Jürimäe, J. (2021). Physical fitness in preschool children in relation to later body composition at first grade in school. *PLoS One*, 16(1), e0244603.
- Rodríguez-Negro, J., & Yanci, J. (2022). Effects of two different physical education instructional models on creativity, attention and impulse control among primary school students. *Educational Psychology*, 42(6), 787-799.
- Schneider, J., Sandoz, V., Equey, L., Williams-Smith, J., Horsch, A., & Graz, M. B. (2022). The role of face masks in the recognition of emotions by preschool children. *JAMA pediatrics*, 176(1), 96-98.
- Shamsi, Y., Nikhat, S., Mukherjee, A., Gombar, V., & Sinha, S. (2019). Role of unani neuroprotective herbal drugs in the management of autism. *Int J Med Res Rev*, 6(9), 12-20.
- van den Bogerd, N., Dijkstra, S. C., Tanja-Dijkstra, K., de Boer, M. R., Seidell, J. C., Koole, S. L., & Maas, J. (2020). Greening the classroom: Three field experiments

on the effects of indoor nature on students' attention, well-being, and perceived environmental quality. *Building and Environment*, 171, 106675.

Young, J. R., Yanagihara, A., Dew, R., & Kollins, S. H. (2021). Pharmacotherapy for preschool children with attention deficit hyperactivity disorder (ADHD): Current status and future directions. *CNS drugs*, 35(4), 403-424.

Yun, M. R., Shin, N., Kim, H., Jang, I. S., Ha, M. J., & Yu, B. (2020). Effects of school-based meditation courses on self-reflection, academic attention, and subjective well-being in South Korean middle school students. *Journal of Pediatric Nursing*, 54, e61-e68.