The Study of Serum Lead Level in Children With ADHD Referring to Psychiatric Clinic of Baharan Hospital, Zahedan, Southeastern Iran

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Background:
Contamination by pollutants has been considered as one of the environmental concerns during the recent years. Lead is one of the most common industrial contaminants all over the world and increase in lead level is associated with behavioral and cognitive problems. Attention deficit hyperactivity disorder (ADHD) is among the most common psychological-behavioral disorders among children, with the incidence rate of 4% - 12%.

Objectives:
This study aimed to investigate the relationship between serum lead level and ADHD through comparison of serum lead level between children with ADHD and the control group.

Patients and Methods:
This case-control study was conducted on 20 children with ADHD and 23 healthy children in the control group. The serum Lead level measured by an atomic absorption spectrometer, equipped with graphite furnace system, was compared between the two groups. The data were analyzed using the SPSS statistical software, version 16.

Results:
The mean level of serum lead was higher in the ADHD children (6.7330 ± 2.39747) compared with the control group (3.0304 ± 1.30573) (P = 0.001). However, no significant difference was observed between the two genders regarding the mean level of serum lead in the case (P = 0.088) or the control group (P = 0.365).

Conclusions:
Based on the study results, the mean level of serum lead was significantly higher in the ADHD group in comparison to the control group (P < 0.001). Thus, environmental contaminants, such as lead, can be associated with increasing incidence of ADHD. Yet, further studies on larger sample sizes are recommended to confirm our findings.