

## **Abstract**

Higher blood lead level was found to be associated with sleep disturbance, decreased intelligence and increased behavioral problems. Among the populations, children are more vulnerable to lead poisoning and its health consequences than adults. The current study aims at examining the effect of blood lead level on child externalizing and internalizing behavioral problems through two mediators including sleep disturbance and intelligence and examining the moderation role of breakfast consumption in the mediation analyses. It was found that higher blood lead level would increase behavioral problems by increasing sleep disturbance and decreasing intelligence. Regular breakfast consumption was found to reduce the effects of blood lead level on intelligence and internalizing behavioral problem through sleep disturbance. The results may imply that measures aiming at reducing the impact of lead exposure on behavioral problems can focus on improving sleep quality and increasing intelligence through intervention program, education and cognitive training.