Dietary, Nutrient Patterns and Blood Essential Elements in Chinese Children with ADHD

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Abstract

Dietary or nutrient patterns represent the combined effects of foods or nutrients, and elucidate efficaciously the impact of diet on diseases. Because the pharmacotherapy on attention deficit hyperactivity disorder (ADHD) was reported be associated with certain side effects, and the etiology of ADHD is multifactorial, this study investigated the association of dietary and nutrient patterns with the risk of ADHD. We conducted a case-control study with 592 Chinese children including ADHD (n = 296) and non-ADHD (n = 296) aged 6–14 years old, matched by age and sex. Dietary and nutrient patterns were identified using factor analysis and a food frequency questionnaire. Blood essential elements levels were measured using atomic absorption spectrometry. A fish-white meat dietary pattern rich in shellfish, deep water fish, white meat, freshwater fish, organ meat and fungi and algae was inversely associated with ADHD (p = 0.006). Further analysis found that a mineral-protein nutrient pattern rich in zinc, protein, phosphorus, selenium, calcium and riboflavin was inversely associated with ADHD (p = 0.014). Additionally, the blood zinc was also negatively related to ADHD (p = 0.003). In conclusion, the fish-white meat dietary pattern and mineral-protein nutrient pattern may have beneficial effects on ADHD in Chinese children, and blood zinc may be helpful in distinguishing ADHD in Chinese children.