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Anthropometric characteristics and nutrition intake of children with intellectual disabilities in Japan

R. Ito[1], H. Suzuki[1] and A. Nishide[1]
[1]*Ibaraki Christian University, Hitachi, Japan.*

It is recognised that children with intellectual disabilities have a greater propensity to being overweight than children with no intellectual disabilities [1,2]. The aim of this study was to examine the differences in nutrient intake of children with intellectual disabilities, divided into groups according to their anthropometric characteristics and grades lower through upper grades.

A cross sectional study was conducted involving eighteen schools for special needs education in Ibaraki prefecture and others in Japan. A brief self-administered diet history questionnaire (BDHQ) was distributed to the parents of all first to sixth grade elementary school children, aged between 6 and 12 years old, on 2nd September, 2022. Only full completed questionnaires, received by 9th September 2022, were analyzed. The exposure variable was the adequate or inadequate intake of nutrients such as protein, fat, carbohydrate, Vitamin A, Vitamin B1, Vitamin B2, Vitamin C, Calcium, Iron and Sodium. This variable was compared with a cutoff value at 95% of the recommended dietary allowance (RDA) or, for Sodium where an RDA was unavailable, the tentative dietary goal for preventing lifestyle related diseases (DG) was used[3]. Using self-reported height and weight figures, the participants were divided into two groups: a non-overweight group (non-ob), and an overweight group (ob). Obesity is defined using the obesity index; (real weight – standard weight)/standard weight × 100, more than 20%[4]). Only six children were classified as lean (-20% or less), thus, they were included in the non-ob. The analysis of covariance adjusted for grade (means were shown with SD), the Cochran-Mantel-Haenszel test adjusted for grade, or a chi square test for lower, middle, upper grade children when the chi square test was stratified by grade category, were performed.

As there were only a few girls participating in this study, this analysis made no adjustment for gender.

Out of 450 participants contacted 27.7% participated in the study. The participants had a higher frequency of overweight/obesity (23.8%) compared with 2021 national statistics[5]. Comparisons were also made between various grades and there were more ob participants in upper grade (39.0%, $p < 0.01$) as compared to lower grade (16.1%).

No significant differences in total energy intake were found between the non-ob and ob ($p = N.S$, 2066 ± 607Kcal, 2191 ± 650Kcal, respectively), and adequate intake was observed for each nutrient ($p = N.S$). However, a higher percentage of inadequate vitamin B2 intake was observed in the non-ob middle grade children compared with the ob group ($p = 0.029$, 31.2%, 12.1%, respectively).

Nutrition support is needed for both non-ob and ob children with intellectual disabilities. More research is required to develop effective support to encourage the development of healthy eating behaviours of both children with intellectual disabilities. This would result in healthy development and growth, principal factors which determine their future quality of life.

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