

Sampling methods for a cross-sectional study on the anthropometric characteristics and nutrition intake of children with intellectual disabilities in Japan

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There have been few studies on the children with intellectual disabilities in Japan that has investigated the anthropometric characteristics and nutrition intake using a methodology across several participating schools. A previous study reported that the obesity rates could be varied by areas of participating school⁽¹⁾. In addition, the participant rate could also be varied by schools. Although it seems required to randomly select participants, it is difficult to use this selection method for the school-based study, particularly this for children with disabilities. The aim of the study is to explore the sampling method to reflect the characteristics of target population for this cross-sectional study in children with intellectual disabilities. In the cross-sectional study, diet history questionnaire⁽²⁾ and questionnaire for parents were distributed at the participating schools to the parents of all school children of elementary department. The simulated data for this study were generated following the data collection of preparation of this study (n = 20) and a previous study (n = 8024)⁽¹⁾. The sizes of target population in each school for this study was used for these for simulation. The categories of obesity rate (0–9%, 10–19%, 20–29%, 30%–) were randomly allocated each child to meet the frequency of the previous study⁽¹⁾. The participants in each school were randomly chosen to meet the frequency of participant rate category (-14%, 15–24%, 25%–) in the previous school-based survey (not published, participant rate 28.8%, population n = 1397) with stratified by anthropometric characteristics. The energy intake, which was categorized (over, sufficient or insufficient), was randomly allocated for each child to meet the frequency in data collection of preparation of this study stratified by age. The sample2 consisted of participants excluding the children from the schools which participant rate was less than 10%, since it would be difficult to reflect the characteristics of population in the area without enough number of participants. These variables will be examined to determine logistic regression analysis to estimate odds ratios (ORs) with 95% confidence interval (CI). The simulated data (all: target population, n = 1418; sample1: participants, n = 386; sample2: see methods, n = 354) were analyzed. ORs for overweight/obesity for over energy intake compared with the group for sufficient or insufficient energy intake was 10.4 (CI:6.9 to 15.8) for all, 7.7 (3.4 to 17.4) for sample1 and 9.7 (3.7 to 24.9) for sample2. Over energy intake was significantly associated with being overweight/obesity (<0.01 for all, sample1 and sample2). OR of sample2 was closer to this of all than OR of sample1. Sample2 seems to be better methods, although the CI was wider. It might be needed to analyze simulated data before data collection to explore better method reflecting the characteristics of target population. Further study of the methodology to reduce selection bias are needed to accurately reflect that.

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References

1. Uchino Y, Kano A, Hashimoto S *et al.* (2007) *Bulletin of Center for the Research and Support of Educational Practice* **3**, 87–92.
2. Sasaki S, Ushio F, Amano K, *et al.* (2000) *J Nutr Sci Vitaminol* **46**, 285–296.