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Food choices of school children in North-West England: a quantitative study measuring dietary intake

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UK childhood obesity is a growing public health concern. In 2015, 1 in 3 children in year 6 and 1 in 5 children in reception were measured as obese or overweight [(1)]. Recent reports measuring dietary intake have reported various demographic differences such as ethnicity to have a significant impact on dietary intake patterns of the population, specifically children aged 9–11 years old [(2)]. The aim of this study was to examine ethnic differences in food choices in school meals and compare these to current UK recommendations.

Ethical approval was obtained from Liverpool John Moores University. Year 6 and 5 pupils were recruited from a school in Manchester. A 3-day food diary gathered information on dietary intake. Mean intakes of the following nutrients: energy, protein, saturated fat, iron, calcium, folate, zinc, and fibre were calculated from food diaries using the nutritional analysis software Diet Plan 7 and compared to current Dietary References Values (DRVs). To test for normal distribution, a Shapiro-Wilk test was carried out. A one-way analysis of variance (ANOVA) and Pearson's correlation co-efficient were used to test for significant associations between ethnic differences in food choice and dietary variables.

Seventeen children aged 9–11 participated, with White 41.2% (n = 7) and Black 35.3% (n = 6). Compared to the Scientific Advisory Committee on Nutrition (SACN) 2011 recommendations, all children in this cohort exceeded the recommended intakes for sugar, whilst consuming less dietary fibre [(3)]. However, non-Black Minority Ethnic (non-BME) children consumed significantly more saturated fat (23.0g) compared to the Black Minority Ethnic (BME) children (15.0g), ($p < 0.05$). No statistical significance was noted for other dietary variables. However, the non-BME group consumed more of the following: total sugars (81g), Ca (598mg), NSP (15.6g); compared to the BME group (44 g, 332 mg and 6 g respectively).

BME children met the SACN recommended <11% of food energy for saturated fat, with saturated fat contributing to 10% of their food energy intake. Whilst non-BME exceeded this recommendation, with 14% of their food energy coming from saturated fats. Although not statistically significant, an interesting finding was the difference in intake of folate and NSP between BME and non-BME groups. Non-BME children had higher intakes of NSP (15.6g) compared to BME children, who had considerably lower intakes (6g). This is surprising, as many traditional African foods are high in complex carbohydrates [(4)]. BME consumed more folate (134mg) than non-BME (8mg). However, both groups failed to meet the recommendations for the following nutrients: folate (175mg), fibre (23g), but met the recommended DRVs for protein (>35g).

Children in this cohort need to make improvements to the quality of their diet. Health promotion initiatives may need to consider a different focus for children of different ethnic backgrounds in order to be effective.

References

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