

The daily energy and macronutrient intake of Black African women pregnant in their 2nd trimester - preliminary findings in Liverpool, UK

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Adequate maternal nutrition is crucial for the optimum fetal growth and development⁽¹⁾. Black pregnant women in the UK have higher odds of adverse pregnancy outcomes⁽²⁾, however, they remain underrepresented in studies that assess dietary intake. Therefore, this study aimed to determine the energy and macronutrient intake of Black women during pregnancy.

Eight pregnant women of Black African ethnicity were recruited in Liverpool (n = 4 at Liverpool Women's Hospital; n = 2 online; n = 2 via snowballing). Mean gestation = 20 ± 3.53 weeks; age = 31 ± 3.38 years; weight = 76.68 ± 14.6 kg. Women completed four-day estimated food diaries. Portion sizes were estimated and verified with the photographic atlas⁽³⁾. Mixed meal recipes were decomposed, and portion sizes were converted to grams or millilitres. These standard units were then inputted into Nutritics nutritional software to analyse macronutrient and energy intake. Energy(kcal/day), alcohol, total carbohydrates, free sugars, dietary fibre, protein, total fat, saturated, monounsaturated, polyunsaturated and trans-fatty acids were analysed. Paired-sample-t-tests were conducted to compare the energy and macronutrients dietary intake values to the Dietary Reference Values (DRVs): Estimated Average Requirement (EAR) and Reference Nutrient Intake (RNI)⁽⁴⁾.

The mean energy intake (2141.41 ± 357.08 kcal/day) was not significantly different from the EAR of 2000 kcal/day ($p = 0.30$). Protein intakes (80.71 ± 14.97g/day) met and exceeded the RNI of 45g/day ($p < 0.001$), while dietary fibre intakes (24.99 ± 3.99g/day) were significantly lower than the EAR of 30g/day ($p = 0.009$). However, intakes of total carbohydrates, free sugars, total fat, saturated, monounsaturated, and polyunsaturated fatty acids were not significantly different from the EARs ($p > 0.05$). The percentages of free sugars (2.95 ± 2.10%) and trans-fatty acids (0.28 ± 0.36%) contributing to daily energy intakes were significantly lower than the RNIs of 5% and 2% respectively ($p < 0.05$). There was no significant difference in the percentage contributions of other macronutrients, including carbohydrates and protein, compared to the DRVs. Alcohol intake for the cohort was zero.

Black women in this study were consuming sufficient energy and macronutrients to support pregnancy needs in the 2nd trimester. However, fibre intake was significantly lower than recommended, this is surprising as many traditional African foods are high in complex carbohydrate⁽⁵⁾. Free sugars and trans-fatty acid intakes were well below the upper limit recommended, which is positive and may reduce the risk of non-communicable disease.

The diets of these Black pregnant women show many positive aspects, including adequate protein, with low intake of free sugars and trans-fatty acids. Dietary fibre intakes are a concern and further research is needed to determine how this could be improved.

References

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