

Nutrition and Lifestyle

Chairpersons: M Reid, W Adu Krow

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Unhealthy eating patterns in Suriname: Part of the Suriname Health Study

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Objective: To explore unhealthy eating behaviour in association with subject characteristics as gender, age, ethnicity, geographical living area, level of education and income in Suriname.

Design and Methods: A nationally representative sample of 5748 subjects (15–65 years) was surveyed using a stratified multi-stage cluster sample. Subject characteristics and food consumption patterns were obtained by interviewer administered questionnaires. A person's eating pattern scored unhealthy if three out of the following five-items scored positive, a person consumed for three or more days a week of snacks, sweets, fast-food, soft-drink, or always adding salt while preparing a warm meal instead of frequently to never. After univariate analyses (Chi-squared test), backward logistic regression modelling was used to explore the predictive value of subject characteristics and unhealthy eating behaviour ($p_{\text{removal}} = 0.20$).

Results: Nine hundred and ninety-three Subjects (17.2%) ate unhealthy (15.9%, 14.6%, 3.0%, 47.5%, and 88.1% consumed too much snacks, sweets, fast-food, soft-drinks and salt, respectively). Less women (17.0%) than men (19.3%), and less Maroons (10.9%) and Amerindians (9%) ate unhealthy ($p < 0.05$). Further, unhealthy eating decreased with age, but increased with urbanization, education and income level ($p < 0.05$). Backward regression analyses showed that all characteristics, but not gender, remained in the prediction model. The highest predictive value was seen for age [in years] (adjusted OR 0.96 95% CI 0.95–0.96).

Conclusion: To improve food consumption behaviour and prevent diet-related non-communicable diseases, nationwide intervention programmes should focus on young adults and their surroundings, particularly in the coastal areas. Soft-drink and salt consumption need prevention-priority.

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Prevalence of obesity among adults in the parish of St George, St Vincent and the Grenadines, and its relation to cardiovascular disease

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Objective: To determine the prevalence of obesity in St George, St Vincent and the Grenadines among those aged 18 years and above, and its relevance to the development of cardiovascular disease within the population.

Design and Methods: A sample population of 381 individuals aged 18 years and older were surveyed using convenience sampling in the parish of St George. Pearson's correlation was utilized to analyse the relationships between obesity and the sample demographics, such as: body mass index (BMI) and residence, age, exercise, income, marital status as well as family history of cardiovascular disease and BMI.

Results: Based on data analysis of 381 respondents (M 202, F 179), there was a 26% prevalence of obesity amongst the participants, 34% of respondents were categorized as overweight, 37% were categorized as normal and 3% were categorized as underweight. The mean BMI for all participants was 27.3 kg/m². The community of Stubbs had the highest represented average BMI of 28.98 kg/m². In each community, women were found to have a greater average BMI to men ($p = 0.001$) when analysed by a two-tailed *t*-test. The prevalence of hypertension was found to be greatest among the respondents that were classified as obese ($p = 0.02$).

Conclusion: It is reflected that 26% of the population of St George parish has a prevalence of obesity. The data show those that had the highest representation of hypertension fell within the category of obese (21.2%). Therefore, a higher predisposition to cardiovascular disease is attributed to a higher BMI.

Discordance between perceived body size and actual body size and psychological well-being in adolescence: Evidence from the DASH longitudinal study

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Objective: To examine the influence of discordance between perceived bodyweight and actual weight on psychological well-being among a multi-ethnic cohort of British adolescents.

Design and Methods: Multivariate multilevel models were used to examine the association between psychological well-being, measured by the total difficulty score (TDS) from Goodman's Strengths and difficulty Questionnaire, (higher scores correspond with greater difficulties) and discordance among 3228 adolescents in 49 London schools in the determinants of adolescent social well-being and health longitudinal (DASH) study. Self-perception of bodyweight, measured anthropometry and psychosocial factors were collected at 11–13 years and again at 14–16 years.

Results: Forty per cent of adolescents had a discordant perception of weight (*ie* underestimated or overestimated actual weight), with girls being more likely than boys to be discordant ($p < 0.05$). Discordance was related to age, ethnicity, gender, family life and racism. Among those who measured overweight/obese, more Black Caribbean's (11.9%, 95% CI 9.7, 14.6) and Black Africans (10.5%, 95% CI, 8.5, 12.8) than White British (6.9%, 95% CI 5.40, 8.81) reported normal weight. Compared with concordance (accurate perception of weight), discordance was associated with higher TDS at 14–16 years, (+0.56, 95% CI 0.25, 0.87, $p = 0.01$), independent of all confounders. Increase in discordant perceptions between 11–13 years and 14–16 years was also associated with increasing TDS (+0.23, 95% CI 0.10, 0.46, $p = 0.04$), which attenuated on adjustment for racism. These effects did not vary by ethnicity.

Conclusion: Misperception of weight is common and associated with worse psychological well-being in adolescence. Interventions that engage with the underlying determinants of discordance, such as racism and target families with young children could have profound benefits.

Sodium and potassium excretion in an adult Caribbean population of African descent with a high burden of cardiovascular disease

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Objective: To estimate sodium and potassium excretion, assess compliance with recommended intakes and to identify the main food sources of sodium in Barbadian adults.

Design and methods: In a population-based study of adults aged 25–64 years, a single 24-hour urine sample was collected from each individual for the measurement of sodium and potassium excretion. Sodium-to-potassium ratio and proportions of participants meeting World Health Organization (WHO) recommended daily intakes of < 2000 mg sodium and > 3500 mg potassium were calculated. Multiple linear regression was used to examine differences by age, gender and education. Two 24-hours recalls were used to identify the main dietary sources of sodium. All analyses were weighted for the survey design.

Results: Among 364 participants, mean sodium excretion was 2656 (95% CI 2488, 2824) mg/day, with 67% (62, 73%) exceeding 2000 mg. Mean potassium excretion was 1469 (1395–1542) mg/d; only two individuals met recommended intake levels. Sodium excretion was greater by 428 mg/d (91.3, 764.6) in men compared to women. The sodium-to-potassium ratio was inversely and independently associated with age and education.

Main sources of sodium were rice and peas (6.0%), baked chicken (5.6%), macaroni pie (4.3%), white rice (4.2%) and coconut bread (3.8%).

Conclusions: In this first nationally representative, objective assessment of sodium and potassium excretion in a Caribbean population in over 20 years, levels of sodium excretion were high, and potassium very low, with younger age and lower educational level being associated with the highest sodium-to-potassium ratio. These findings provide baseline metrics and identify potential targets for urgently required interventions.

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The proportion of dementia in Barbados explained by common modifiable lifestyle factors

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Objectives: To report on the proportion of dementia cases attributable to six modifiable lifestyle risk factors (mid-life obesity, physical inactivity, smoking, low educational attainment, diabetes mellitus, mid-life hypertension) in Barbados.

Methods: Levin's attributable risk which assumes independence of risk factors was used to calculate the proportion of dementia attributable to the six risk factors under study. Using a recently published modified formula (Norton, Matthews, Barnes, Yaffe and Brayne, 2014) and survey data, a more realistic estimate which accounts for non-independence of risk factors was calculated. Finally, the effect of a 5%–20% reduction in each risk factor per decade on future dementia prevalence was computed.

Results: Assuming independence, the risk factors explained 58.7% of dementia cases in Barbados (1761 cases). Accounting for non-independence of risk factors we estimated the adjusted combined population attributable risk to be 50.9% (1526 cases). We noted that midlife hypertension was related to the greatest proportion of dementia cases when compared to the other risk factors under study (24.4%). We calculated that if each risk factor were to be reduced by between 5% and 20% every 10 years to 2050, dementia prevalence would be reduced by between 3.3% and 31.8% in Barbados.

Conclusion: Our findings present a case for greater investment in intervention programmes that target modifiable factors. As these risk factors have much in common, any intervention that targets even one of them can significantly reduce future dementia prevalence.

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Quality of life after cardiovascular disease in a small island developing state

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Objective: To investigate the quality of life (QoL) in one-year survivors of cardiovascular disease (CVD: stroke and acute myocardial infarction) in Barbados.

Design and methods: Quality of life was assessed in 265 one-year CVD survivors and a random selection of 1234 adult Barbadians ≥ 25 years. Data were collected on the previous year by interview using a health-related QoL (HR-QoL) instrument, the EuroQoL five dimensions questionnaire, covering physical (mobility, self-care, usual activities) and non-physical (pain/discomfort, anxiety/depression) domains. Propensity score matching was used to adjust for confounders between CVD survivors and the general population.

Results: At least one health-related problem was reported by most CVD survivors (79%; 95% CI 73, 84) vs half (51%; 95% CI 48, 54) of the general population. Eleven per cent of CVD survivors indicated problems in all five dimensions, vs < 1% of the population. More stroke survivors (13%; 9–19) had problems in all five dimensions than survivors of acute myocardial infarction (1%; 0–8%). Cardiovascular disease survivors (particularly stroke) had significantly greater prevalence of problems than the population group for the physically active dimensions, but more similar prevalence for the non-physical dimensions.

Conclusions: In Barbados in 2011–2012, HR-QoL for one-year CVD survivors (especially stroke) was significantly lower than for the general population. Mobility was the main QoL limitation. A UK study of minority ethnic groups found similar reductions in HR-QoL for persons with chronic disease, particularly heart-failure and stroke. Future work will investigate use of cardiac rehabilitation services and the impact of the introduction of a stroke unit in 2013.

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Nutritional status of schoolchildren in the amazon rainforest interior of multi-ethnic Suriname: The influence of age, gender and ethnicity

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Objective: Adequate nutrition is critical for normal development during childhood. The nutritional status of schoolchildren living in the interior Suriname, South America, is of growing concern to the provider of healthcare in this region. This study aims to evaluate the nutritional status of these schoolchildren.

Design and Methods: Multiple-model (MM) 2015 interior school screening data on height, weight and demographics of all schoolchildren aged 4–14 years was used in this cross-sectional retrospective study. Malnutrition was defined as body mass index < -2 SD and stunting as height-

for-age z-score < -2 SD. Potential determinants of malnutrition and stunting: age, gender and ethnicity, were assessed using logistic regression analysis.

Results: Of the 3863 schoolchildren, 51% were young (4–8 years), 49% older (9–14 years), 50% male, and 82.6%, 15.3% and 2.1% were of Maroon, Amerindian and mixed ethnicity, respectively. A total of 5.4% of the schoolchildren were thin and 9.2% were stunted, including 1.6% who were severely stunted (< -3 SD). In multi-variable analysis, younger age (OR 1.8; 95% CI 1.4, 2.4) and Maroon children (OR = 2.2; 95% CI 1.3, 3.8 compared to Amerindians) were more often malnourished, gender had

no influence. Boys (OR = 1.7; 95% CI 1.4, 2.2), older children (OR 1.4; 95% CI 1.1, 1.8) and Amerindians (OR = 2.4; 95% CI 1.8, 3.0 compared to Maroons) were more often stunted.

Conclusions: Approximately, 5.4% of Suriname's interior schoolchildren are malnourished and 9.2% are stunted. Younger and Maroon children were more often malnourished, whereas older children, boys and Amerindians were more often stunted. Future studies are needed to determine causes of malnutrition and stunting and may support adaptation of MM schoolchildren nutrition programmes.