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Diet and CVD risk factors in Botswana

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Populations in sub-Saharan Africa are in economic and cultural transition[(1)], with suspected increases in CVD risk factors including obesity[(2)] and hypertension[(3)] possibly reflecting changes in diet and lifestyle[(4)]. Furthermore, a marked increase in the occurrence of CVD in the urban African population is inevitable in the next generation[(5)]. Data on the association between diet and CVD risk is lacking in Botswana, therefore this study aimed to assess whether diet is associated with CVD risk factors in Gaborone, Botswana.

A cross-sectional study was carried out involving 790 participants aged 18–75 years of which 586 (232 men and 354 women) were healthy (free of CVD, hypertension or diabetes). Dietary data was collected using a locally validated FFQ and a structured questionnaire was used to assess socio-demographic and lifestyle characteristics. Body weight, height, waist and hip circumference, body composition and blood pressure were also measured. Blood samples were collected for analysis of blood lipids and random glucose.

Mean BMI was lower in men (22.0 kg/m^2) than women (26.0 kg/m^2) ($P<0.0001$), and 4 and 23 % of men and women respectively were obese (BMI ≥ 30 kg/m^2). Similarly, 2.2 and 22.5 % of men and women respectively had abdominal obesity (waist circumference >102 cm in men or >88 cm in women). Mean systolic blood pressure was higher in men than women (125 *v.* 120 mmHg, $P<0.0001$), however, diastolic blood pressure was not different between sexes. Compared with men, women had significantly higher levels of plasma total cholesterol ($P = 0.001$) and LDL cholesterol ($P<0.0001$) but lower plasma TAG levels ($P = 0.001$). There was no difference between sexes in HDL cholesterol levels, however more women than men had below optimum levels of HDL cholesterol (men <1 mmol/l and women <1.3 mmol/l, $P<0.0001$). The table shows median (inter-quartile range) intakes of fat and fibre. Spearman correlation coefficients between these nutrients and plasma lipids were weak ($r<0.1$).

Nutrient	All	Men	Women
Total fat (% energy)	26.9 (21.4, 31.6)	26.3 (20.9, 31.9)	27.2 (21.7, 31.9)
SFA (% energy)	8.1 (6.4, 10.4)	8.1 (6.2, 10.4)	8.1 (6.5, 10.5)
MUFA (% energy)	8.8 (6.8,11.0)	8.9 (6.8, 10.9)	8.8 (6.9, 11.1)
PUFA (% energy)	6.1 (4.5, 7.8)	5.8 (4.2, 7.7)	6.4 (4.8, 7.8)
Fibre (g/d)	32.7 (22.3, 48.5)	31.0 (20.8, 46.0)	33.7 (23.4, 49.4)

High levels of obesity, hypertension and dyslipidaemia follow similar patterns observed in other Sub-Saharan countries[(1)] undergoing transition. There is a need to understand predictors of these risk factors so that prevention strategies can be developed. Statistical analysis is ongoing to determine predictors of CVD risk factors in this population.

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