Title | Plant foods consumption and its association with cardiovascular disease risk profile in South Africans at risk of diabetes

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Background and Objectives

Plant foods contain beneficial nutrients, dietary fibre, and bioactive compounds that function as antioxidants. Consuming plant foods may reduce the risk of developing non-communicable diseases (NCDs) such as type 2 diabetes mellitus (T2DM).

This study aimed to determine:
distribution of plant food consumption by
1. socio-demographic and behavioural factors
2. associations of plant food consumption with hypertension, T2DM, dyslipidaemia, obesity, and subclinical inflammation

Methods

The South African Diabetes Prevention Programme (SA-DPP)
- conducted between August 2017 and July 2019 in Cape Town, South Africa
- community-based study that included 16 low socioeconomic areas

This current study had a cross-sectional design and performed secondary data analyses.
Participants at high risk for T2DM were identified using the African Diabetes Risk Score and recruited into the study.
Eligible study participants were asked to fast for at least 10 hours for further evaluations:

(1) an oral glucose tolerance test (OGTT) and various biochemical analyses

(2) physical examination

(3) administered questionnaire
- dietary assessment (24-hour recall)

Results

N = 693 participants; mean age = 51 ± 8.95 years

N = 131 N = 562

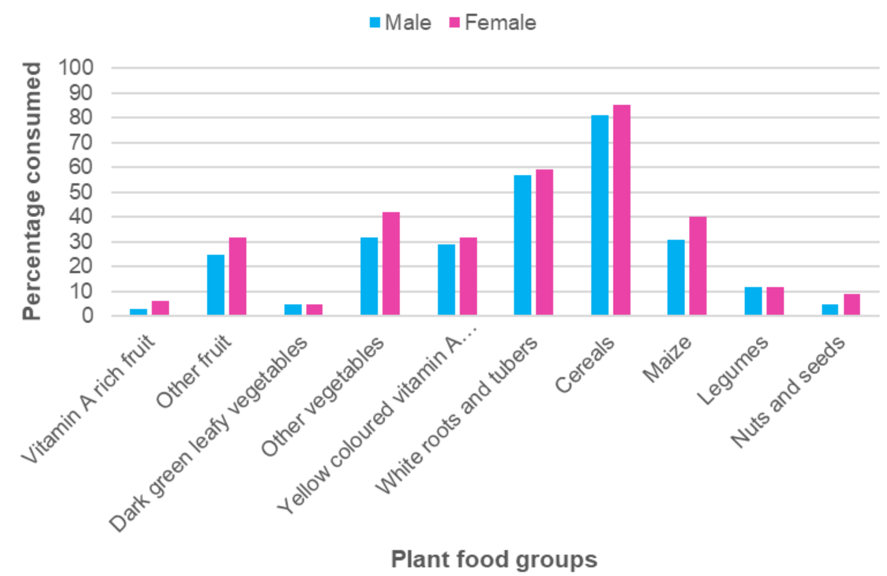
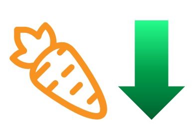


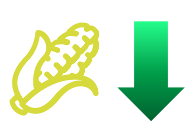
Figure 1. The distribution of plant foods consumption by sex

❖ Consumers of yellow-coloured vitamin A-rich vegetables and tubers had lower levels of:



systolic blood pressure
(125 vs. 128 mmHg, p=0.030)
triglycerides
(1.2 vs. 1.3 mmol/L, p=0.028)

❖ Consumers of maize had lower levels of:



fasting insulin
(7.8 vs. 9.6 mIU/L, p<0.001)
LDL-cholesterol
(3.0 vs. 3.2 mmol/L, p=0.011)
triglycerides
(1.2 vs. 1.3 mmol/L, p=0.023)
fibrinogen
(3.6 vs. 3.8 g/L, p=0.005)

Results

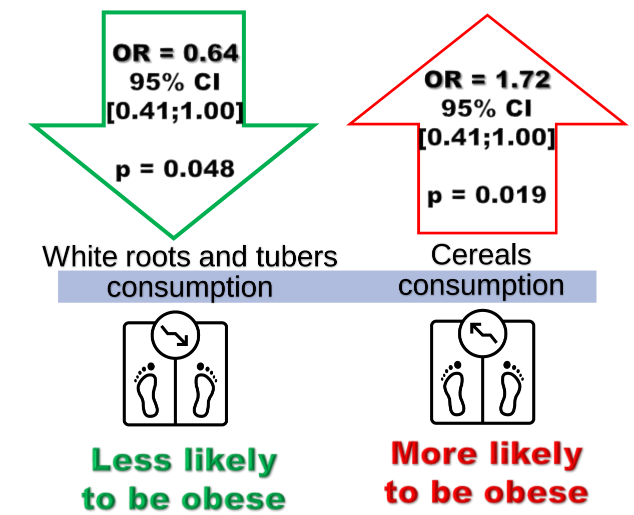


Figure 2. Significant association between certain plant foods and obesity

Conclusions

This study reported that the consumption of some healthy plant foods was associated with decreased risk and lower levels of some biochemical risk factors for CVD. A further in-depth investigation is needed to understand these associations.

Keywords

plant foods;
cardiovascular disease risk factors;
type 2 diabetes

Conflict of Interest

None.

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