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Dietary fibre intake, adiposity, and metabolic disease risk in Pacific and New Zealand European women

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The aim of this study was to explore associations between habitual dietary fibre intake, adiposity, and biomarkers of metabolic health in Pacific and New Zealand European women who are known to have different metabolic disease risks. Pacific (n = 126) and New Zealand European (NZ European; n = 161) women (18-45years) were recruited to the PROMISE cross-sectional study(1) based on normal (18-24.9kg/m2) and obese BMI (≥30kg/m2). Body fat percentage (BF%), measured using whole body DXA, was used to stratify participants into low (<35%) or high (≥35%) BF% groups. Habitual dietary intake was calculated using the National Cancer Institute method, involving a 5-day-food-record and a semi-quantitative FFQ. Fasting blood was analysed for glucose, insulin, and lipid profile. NZ European women in the low- and high-BF% groups were older, less socioeconomically deprived, and consumed more dietary fibre (median 23.7g/day [25-75-percentile, 20.1, 29.9]; 20.9 [19.4, 24.9]) than Pacific women (18.8 [15.6, 22.1]; 17.8 [15.0, 20.8]; both p<0.001), respectively. Pacific women consumed a higher proportion of their total fibre intake from discretionary fast foods, in contrast NZ European women consumed more dietary fibre from wholegrains. Regression analysis controlling for ethnicity, age, socioeconomic deprivation, energy intake, protein, total carbohydrate, and fat intake showed significant inverse associations between higher dietary fibre intake and BF% and visceral fat% (β = −0.47, 95% CI = −0.62, −0.31, p<0.001; β = −0.61, [−0.82, −0.40], p<0.001, respectively) among both Pacific and NZ European women. LDL-C (β = −0.04, [−0.06, −0.01]) was inversely associated with fibre intake following further adjustment for BF%-groups in NZ European women. Despite differences in intake, dietary fibre was inversely associated with adiposity and metabolic disease risk in both Pacific and NZ European women. However younger woman living in areas of higher socio-economic deprivation who consumed a higher proportion of total dietary fibre intake from discretionary fast foods were more likely to have low dietary fibre intakes than older, wealthier women. These women were also more likely to be Pacific women. Increasing habitual dietary fibre intake could help to reduce adiposity and metabolic disease risk; so implementing policies that make health-promoting high fibre foods more affordable, ensuring households have sufficient income to purchase nutritious food and limiting the amount of unhealthy food marketing that low income communities are exposed to should be public health priorities.

Keywords: dietary fiber; adiposity; obesity; metabolic diseases

Ethics Declaration

Yes

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Reference

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