Body mass index and cardiovascular risk factors in Pacific Island Polynesians and Europeans in New Zealand

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Relationships between body mass index (BMI) and cardiovascular risk factors were compared between European and Pacific Island (Polynesian) New Zealand residents in a cross-sectional survey of 510 (279 European, 231 Pacific Island) Seventh-day Adventist church members. Participants were recruited while attending annual camp meetings or churches and response rates were 72% for Pacific Islanders and 95% for Europeans. The age range was 39-90 years. Age adjusted BMI was higher in Pacific Islanders than Europeans (mean(SE): 32.8(0.3) v 25.6(0.3), p=0.0001). Among Europeans, BMI was positively associated ($p<0.05$) with systolic and diastolic blood pressure, triglyceride, total cholesterol, LDL cholesterol and fasting glucose, and negatively associated with HDL cholesterol. In contrast, BMI was only significantly ($p<0.05$) associated with systolic and diastolic blood pressure, and with HDL cholesterol in Pacific Islanders. Associations were stronger in Europeans compared to Pacific Islanders, there being a significant difference ($p<0.05$) between Pacific Islanders and Europeans in ethnic specific regression coefficients for systolic blood pressure, triglyceride, and total cholesterol. We conclude that BMI has a weaker association with cardiovascular risk factors in Polynesians than Europeans. These results suggest that interventions to decrease BMI levels in Polynesian populations may not decrease risk of cardiovascular diseases to the same extent as in European populations.

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