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Cross-sectional analysis of the characteristics of young women in a weight loss trial and factors related to attrition

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Background – Young women are at high risk of weight gain. They also have poorer lifestyle pattern and more likely to drop out of weight loss interventions compared to older women. Identifying factors associated with BMI, lifestyle behaviour and treatment attrition may assist in program development for this group.

Objective – To determine the correlates of BMI, lifestyle behaviours, and attrition in overweight and obese young women registered for a weight loss trial.

Design – Cross-sectional analysis of the characteristics of young women in a weight loss trial (n=113, mean age 28.19 ± 4.72, mean BMI 34.17 ± 4.65). Socio-demographic characteristics, psychological outcomes (GHQ—General Health Questionnaire, RSE-B—Bachman’s revision of Rosenberg’s Self-Esteem Scale) and health behaviours such as alcohol consumption and smoking were assessed through an online questionnaire administered prior to weight loss intervention. Dietary intakes were obtained from a pre-intervention 3-day weighed food diary. The relationships between variables were assessed using bivariate correlation and one-way ANOVA.

Outcomes – Lower self esteem (r=0.23, P<0.05) and lower internal weight locus of control (r=-0.30, P<0.01) was associated with higher BMI. Higher self-esteem was reported by those who exercised for at least 1 hour per week (19.9 ± 6.1 vs 22.9 ± 6.9, P<0.05). Internal weight locus of control was significantly correlated to diet quality as shown in the intakes of iron, total vitamin A equivalents and magnesium (P<0.05). In terms of attrition, drop-outs had greater psychological morbidity reflected in higher GHQ scores compared to completers (mean score 15.08 ± 6.06 vs 12.83 ± 4.84, P<0.05). Drop-outs also reported a poorer diet as shown in lower intakes of all micronutrients assessed, of which differences in niacin, magnesium, phosphorus and iron reached statistical significance (P<0.05).

Conclusions – Psychological factors such as self-esteem and internal weight locus of control are important correlates of obesity and lifestyle behaviours in young women. Young women with greater psychological distress and poorer lifestyle patterns are more likely to drop out of weight loss interventions.

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Ethnic differences in body composition of 2 year old children

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Background – Throughout the life cycle body composition, including the distribution of fat and muscle, has important relationships to future health. In particular, central obesity is a risk factor for diabetes. There are known ethnic differences in body composition in adults, but little is known about the differences in very young children.

Objective – To investigate ethnic and gender differences in body composition differences in two year old children

Design – Longitudinal follow up of children born to women with gestational diabetes who were randomised to metformin or insulin treatment, aiming to show that metformin is an effective alternative treatment to insulin. As part of this study body composition of the offspring at two years was measured using anthropometry. In addition, whole body dual energy Xray analysis (DEXA) scans and measurements were performed when possible.

Outcome – Based on the data collected to date 45 children (16M, 29F) with a mean age 2.2 yrs (range 1.9-3.1) have been scanned with appropriate quality. There were no differences between male and female in height or weight or any of the body composition variables measured by DEXA. When separated by ethnicity, there were 15 European, 8 Pacific, 8 Chinese, 7 Indian, 4 Maori, and 3 Other children. Analysis of covariance with adjustment for age revealed that European (17.0%) had significantly less percentage abdominal body fat than Pacific (23.7%, P=0.04), Chinese (23.2%, P=0.04) and Indian (25.1%, P=0.01) but not Maori (16.8%, P=0.99). No differences in abdominal body fat percent were found between the insulin and metformin treatment groups corrected for age and ethnicity.

Conclusion – These initial findings provide early evidence for ethnic differences in the distribution of fat and may have implications for the prediction of risk for chronic disease including type 2 diabetes. Understanding the differences between ethnic groups, especially at such a young age, should be a focus of future research.