

2.118. *Low Dietary Zinc Intake Is Associated with High Psychological Distress in Japanese Workers*

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Mental health disorders are one of the important health concerns for workers. To explore the primary prevention strategy, the association between dietary zinc intake and psychological distress was investigated. A questionnaire survey was conducted at 43 companies in 2013–14. Dietary intake was estimated by a validated food frequency questionnaire for Japanese. The total energy intake was adjusted by residual methods. Psychological distress was assessed using the six-item Kessler Psychological Distress Scale (K6). High psychological distress was determined by a score of 13 and more. Sex and age adjusted means and 95% confidence intervals (CIs) for zinc intake and psychological distress were obtained by analysis of covariance. A logistic regression analysis was performed to obtain odds ratios (ORs) and 95% CIs for high psychological distress according to quartile of zinc intake while adjusting for age and sex, with the highest quartile (Q4) as a reference. Valid answers for sex and K6, age 18 to 70, total energy intake within 500–4000 kcal/day, and no history of depression were obtained from 2089 men and women. The proportion of high psychological distress was 8.1% for men and 4.2% for women. Mean zinc intakes were 7.50 mg (95% CI, 7.34–7.67) for high psychological distress and 7.84 mg (7.80–7.89) for low psychological distress. ORs for high psychological distress were 1.75 (1.07–2.87) for the lowest (Q1) quartile of zinc intake, 1.26 (0.75–2.11) for Q2 and 0.80 (0.46–1.41) for Q3. Low dietary zinc intake is associated with high psychological distress. Further research on the association should be encouraged.

2.119. *Multiple Micronutrient Deficiencies Persist Among Young Children in Malaysia*

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Malaysia has undergone steady economic growth, industrialization and technological development to become an upper-middle income economy. Occurring in tandem has been an improvement in the nutritional status of young children in terms of anthropometric indicators. Nonetheless, the results on dietary intake and from blood assessments in recent years have revealed that multiple micronutrient deficiencies prevail in young children. A nationally representative study reported a noteworthy prevalence of inadequate intake of calcium, iron, and vitamins A and D among children aged 0.5–6.9 years. Based on two-day weighed food records, the dietary intake of calcium, iodine, zinc, selenium, niacin, folate, and vitamins C, A, D and E were lower than the recommended levels among toddlers aged 15–21 months from urban communities. Using a similar assessment approach for subjects aged 0.5–23.9 months, an inadequate intake of zinc, thiamin, riboflavin, niacin, and vitamins A and C was found. Of the few dietary studies that included blood assessments, notably high serum vitamin D insufficiency was recorded in preschool and school-aged children of both sexes, whilst iron deficiency anaemia prevailed in female children from rural areas. These findings occurred in the face of various child health improvement programmes in communities, schools, preschools, day care centres and clinics. The National Plan of Action for the Nutrition of Malaysia (NPANM, 2016–2025) includes several strategies and interventions to address micronutrient deficiencies in children. There is a need for more rigorous monitoring and outcome-based evaluation of public health programmes, and research for a better understanding of the existence of multiple micronutrient deficiencies among young children in an affluent nation.

2.120. *Self-Compassion Interventions for Nutrition Habits, Eating Behaviour, Body Weight and Body Image: A Systematic Review*

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Overweight and obesity are universal health challenges, with behavioural weight-management often failing to produce long-term effects. Various psychological factors such as body dissatisfaction and disordered eating have been linked to weight gain over time; however, the majority of weight loss programs have not addressed these factors. There has been a growing interest in the potential benefits of self-compassion as a new approach to promoting both physical and mental health. This systematic review investigates the effect of interventions that aim to increase self-compassion in obesity and weight-related psychological conditions. Four electronic databases were searched, adapting search terms from previous systematic reviews on nutrition and body weight, compassion, eating disorders and body image. This review was conducted using the PRISMA guidelines for systematic reviews. The search identified six studies that met the eligibility criteria for the review. Results show that self-compassion can be beneficial for weight loss, nutrition behaviours, eating behaviour and body image. However, the numbers of studies are limited, and most of the studies have serious limitations. Further research with a robust methodology is needed to determine the efficacy of self-compassion on behaviour that is related to obesity.

2.121. Relationship between Erythrocyte Membrane Phospholipid Fatty Acids and Obesity in Chinese Children and Adolescents

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The association between circulating fatty acid (FA) composition and obesity risk remains largely unclear in children and adolescents. We conducted a case-control study of 1442 pairs of obese and normal-weight children and adolescents matched by age and sex. Multivariable-adjusted odds ratios (ORs) and 95% confidence intervals (CIs) of obesity risk for per one standard deviation (SD) difference for each FA were estimated by fitting conditional logistic regression models. A literature-based meta-analysis was additionally conducted to compare the FA patterns in different body weight groups from our findings with summary results from existing evidence. In the present study, the cases showed higher proportions of five saturated FAs (SFAs) (14:0, 16:0, 17:0, 18:0, 20:0), but lower proportions of all n-3 polyunsaturated FAs (PUFAs) (18:3n-3, 20:3n-3, 20:5n-3, 22:5n-3, 22:6n-3) than controls, summary mean group differences from the meta-analysis were only consistent in 22:5n-3 and 22:6n-3. In the conditional logistic regression models, five SFAs (14:0, 16:0, 17:0, 18:0, 20:0) were significantly positively associated with obesity risk, with per one SD OR (95% CI) as 1.22 (1.12, 1.32), 1.43 (1.32, 1.57), 1.13 (1.07, 1.20), 1.08 (1.03, 1.13) and 1.33 (1.22, 1.44), respectively. All n-3 PUFAs were significantly inversely associated with obesity risk, the per one SD OR (95% CI) were 0.81 (0.71, 0.91) for 18:3n-3, 0.70 (0.61, 0.80) for 20:3n-3, 0.69 (0.60, 0.79) for 20:5n-3, 0.60 (0.52, 0.69) for 22:5n-3 and 0.57 (0.51, 0.64) for 22:6n-3, respectively. The present study found that erythrocyte SFAs were positively associated with childhood obesity risk, while n-3 PUFAs were inversely associated with childhood obesity risk.

2.122. Effect of an Interdisciplinary Intervention on Health-Related Quality of Life: Secondary Analysis of the HealthTrack Study

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