Methods of dietary pattern analysis in weight-loss dietary interventions: detailed food categories and a diet quality tool.

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Introduction

- Foods are more complex than the sum of nutrients they contain
- Dietary pattern research within dietary interventions may be useful in understanding the dietary causes of overweight and...

- The specific food choices of dieters may be important in weight-loss success (diet quality).
- A framework for examining dietary patterns and measuring changing diets aligned with clinical practice is lacking.

Development and validation of a Food Choices Score for use in weight-loss interventions

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Abstract

Weight loss results from an energy deficit, although the quality of food choices making up the diet may also be important. The aim of the present study was to develop and validate a diet quality tool based on food categories to monitor dietary change in clinical weight-loss settings. The Food Choices Score (FCS) was based on seventeen food categories, each scoring up to five points, totalling 85. In addition to content validity, the tool was validated using (1) two energy-deficit diet models (6500 and 7400 kJ) assuring nutrient and food-group targets and (2) dietary data from two weight-loss trials (*n* 189). First, the diet models confirmed that an optimal score of 85 was achievable. Second, change in scores was compared with weight loss achieved at 3 months. The trial data produced a mean FCS of 42·6 (SD 8·6), increasing to 49·1 (SD 7·6) by 3 months. Participants who lost weight achieved a higher FCS at 3 months than those who did not

Method

1. 17 food categories derived from a review of the literature
   - associations with health outcomes,
   - existing food categorisation systems
   - the culinary use of foods.

2. A diet quality tool utilising the food categories & dietary modelling with an energy-deficit (6500 and 7400kJ) & adequate nutrient intake.

1. Wholegrain foods (30g)
2. Non-wholegrain cereals (30g)
3. Fruit (150g)
4. Free vegetables (75g)
5. Starchy vegetables (75g)
6. Legumes (75g)
7. Low fat dairy foods:<3.5% fat (150ml)
8. Medium fat dairy foods:3.5-10% fat (150ml)
9. High fat dairy foods: >10% fat (30g)
10. Lean Meat and poultry (30g)
11. Fatty meat (30g)
12. Fish and seafood (30g)
13. Eggs (1 egg)
14. Nuts (and seeds) (30g)
15. Unsaturated oils and margarine (5g)
16. Alcoholic beverages (400kJ)
17.Non-Core foods and drinks (600kJ)

SMART & HEAL trials

Is a higher omega 3 intake advantageous for weight loss? [SMART study]

- CI Tapsell LC, Batterham MJ, Charlton KE
- Funding source: NHMRC project ##514631; ACTR 12608000425392

Importance of high vegetable consumption in controlling weight [HEAL study].

- CI Tapsell LC, Batterham MJ, Price W, Gidley M, Johnson S, Williams D.
- Funding source: Horticulture Australia Ltd using the vegetable levy and matched with funding from the Australian government Project #VG0907. ACTR 12610000784011

Method

- Each method of dietary pattern analysis was applied to data from two weight-loss intervention trials (n=231) at baseline and 3-months

- The dietary patterns were described using the food categories and using the summative FCS

- Dietary pattern changes, ΔFCS and weight-loss.

Results

- **Baseline score improved by 3-months** (42.6±8.6 versus 48.9±7.8).

- **Those losing ≥5% weight showed greater improvement in FCS** (n=100; P=0.024) than those losing <5%.

- **More weight-loss was achieved by those with a greater change in FCS** ($\Delta \geq 7$; n=100; P=0.044).

- **Those losing more weight consumed**
  - more fruit (P=0.009)
  - more low-fat dairy food (P=0.004),
  - less fatty meat (P<0.001),
  - less non-wholegrain cereals (P<0.001),
  - less non-core foods and drinks (P<0.001).

Conclusions…

- The FCS and ΔFCS proved valid for assessing diet quality and change in diet quality in weight loss settings

- The defined 17 food categories provided a more detailed perspective as to the changes in food choices actually made, complementing nutrient analysis of the diets

- The 17 food categories provides a simple framework for future research

References

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