

A new behavioural intervention for tackling obesity

Do something different

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INTRODUCTION

Obesity is routinely tackled by dieting. In the USA one in five women is on a diet at any one time (1). Dieting can produce significant short term weight loss (2), however most people who lose weight slip back into their old eating habits (3) and put it back on. Around half of all dieters eventually end up heavier than when they began (4). Those who diet repeatedly compromise their immunocompetence and natural killer cell cytotoxicity (5), and there is growing evidence that this may increase mortality rates in the long term (6). Since diets are, at best, ineffective and, at worst, potentially dangerous alternative weight loss solutions must be sought. Research is converging on the view that lifestyle modification is a viable and effective approach to tackling obesity. Dansinger and Schaefer (7), for example, claim that "most able-bodied persons who

ABSTRACT

Objective: To pilot a simple behavioural weight loss intervention based on increasing behavioural flexibility to break habits, rather than tackling over-eating or lack of exercise.

Design: A one-month longitudinal study of 15 participants on a "Do Something Different" intervention programme that prescribes daily 'habit-breaking' tasks. **Measurements:** Weight, BMI and a measure of Behavioural Flexibility at baseline. Re-weighing weekly during the intervention and at 1 month and 2 months post intervention. Diet, exercise, anxiety and depression were also measured.

Results: All but one of the participants lost weight ($m = 2.61$ kg) during the intervention. Weight loss continued post-intervention ($m = 4.45$ kg). Weight loss was attributable to increased Behavioural Flexibility.

Conclusion: Targeting lifestyle habits, rather than food or exercise, increases behavioural flexibility that results in sustained weight loss.

can find a way to overcome [...] the psychological barriers that prevent the full application of lifestyle change can reverse obesity within months" (p.95). All too often the behaviours that lead to a person over-eating are an integral part of their lifestyle and this is where intervention programmes should be targeted. However, radical change - like drastic dieting - is difficult to implement and almost impossible to sustain over time. People have limited willpower or self-control and these resources weaken the more they are called upon (8). Just as people do not have the resolve to make every day a diet day, a successful behavioural approach should not over rely on the participant's willpower (8). Our previous research found that overweight people have low Behavioural Flexibility (9) - their range of behaviours is limited and they are more habitual. Using The FIT Profiler (10) to measure Behavioural Flexibility we found it correlated negatively and significantly with BMI in over 1000 people sampled. Heavier people were more habitual and less behaviourally flexible. This led us to hypothesise that, if Behavioural Flexibility is negatively correlated with BMI, increasing it would lead to weight reduction. One intervention based on FIT (11) (Framework for Internal Transformation) that increases Behavioural Flexibility is the Do Something Different (DSD) programme. In the first trial of this approach, 55 volunteers were encouraged to Do Something Different every day for 28 days and try two new activities each week. All participants lost weight on the programme. More crucially, the weight loss continued post-intervention because participants had integrated the changes into their lifestyle. A key finding was a dose relationship between changes in Behavioural Flexibility that occurred as a result of the DSD programme and the amount of weight loss observed. This supported the hypothesis that the changes in Behavioural Flexibility were responsible for the weight loss because that helped to weaken poor habits overweight people develop. Structural equations modelling confirmed this. The trial above required the participants to invent their own new way of interacting with a person or dealing with a situation each day. The next step in developing the Do Something Different approach is to offer a programme that stipulates the activity for the

participant to undertake every day. Here we pilot a more prescriptive version of the original programme that leaves less to the individual and which may be more appropriate for the less motivated person for whom other weight loss methods have failed.

METHOD

Participants

15 females and 2 males participated, mean age 44.2 years (SD = 9.3). BMI for the group ranged from 21.50 - 47.23. - 5 were overweight (BMI 25-30) 9 were obese (BMI >30). Over half had tried 3 or more diets, and over one quarter had tried more than 5 diets, mean age when dieting started was 23.2 years (SD = 9.0 years, range = 10-40 years). Participants were recruited via posters and referral from an occupational health department and all were employees within a public organisation. None had known relevant medical conditions.

Materials

Demographics and diet history were gathered in a pre-trial questionnaire. In addition, participants were weighed and completed The FIT Profiler, a psychometric instrument composed of 75 items contained within 7 sub-scales. It measures outer Behavioural Flexibility and five inner Constancies (Awareness, Balance, Conscience, Fearlessness and Self-Responsibility).

The four Weekly Task booklets for the Do Something Different (DSD) Programme, involved:

- Week 1 - preparation for change. It encourages people to try simple new or different behaviours every day. The programme specifies a task for each day of week 1. Two additional weekly tasks



have to be completed from 25 specified activities.

- Week 2 focuses on expanding behaviours measured in The FIT Profiler. Daily tasks focus on trying new ways of behaving each day with the aim of becoming more behaviourally flexible.
- Week 3 focuses on changing habits in relation to interactions with other people and other everyday behaviours, with a different task for each day of the week. Two additional weekly tasks have to be completed from 25 specified activities.
- Week 4 targets thinking and each daily task focuses on a different FIT dimension (Self-Responsibility, Awareness, Balance, Fearlessness, Conscience, Emotional Intelligence and Social Intelligence) and the new behaviours to be guided by these.

Procedure

At a 2-hour group induction participants were introduced to the programme, completed a pre-trial questionnaire, were weighed, and received instructions. Each week for the following 3 weeks participants attended group follow-up sessions. The final data collection occurred, on average, 86 days following the end of the intervention.

RESULTS

Of the original 17 participants, two women, - one obese and one of healthy BMI - dropped out of the trial before they had completed all the 4 phases. The other 15 completed the programme.

Participants' diet history

Pre-intervention BMI was significantly correlated with number of previous diet attempts (Pearsons $r [n = 15] = 0.53, p = 0.04$) and with the age at which participants started dieting ($r [n = 15] = -0.54, p = 0.03$). Those with higher BMIs had been on more diets and had started dieting at a younger age.

Participants' FIT Profiles pre-intervention and BMI scores

Using Pearson correlations, FIT Behavioural Flexibility was negatively correlated with BMI as predicted ($r [n = 15] = -0.48, p = 0.03$) indicating that participants with a higher BMI were less behaviourally flexible. Those with higher BMIs also reported being more fixed in their personality (as measured by the number of extremity scores on the FIT behavioural dimensions, $r [n = 15] = 0.61, p < 0.01$).

Weight loss during and post intervention

Table 1 shows participants' mean weight pre-trial, at each phase of the DSD programme, and at follow-up. It shows that weight loss is gradual and continues throughout the intervention phases and post-intervention. During the intervention, i.e. from T0 to T4, the average weight loss was 2.61 kg, giving a healthy mean weight rate loss of 0.65 kg per week. The largest weight loss during the intervention period was 7.4 kg.

The only participant not to lose weight during the intervention period (T0-T4) already had a 'healthy' BMI of 21.70 pre-intervention.

Since stopping a food diet leads to regain of weight we were interested in whether participants would continue to lose weight after the DSD programme.

At the final follow-up (from T4-T5), 86 days post-intervention, the mean weight loss had increased to 4.45 kg, which suggests that the changes effected over the intervention phase were maintained.

Over the trial period, from T0 to T5, the average weight loss of 4.45 kg was statistically significant, $F(2.04, 28.50) = 16.66, p < 0.01, \text{partial } \eta^2 = 0.54, \text{Power} = 0.99$. The pattern of means followed a linear trend, $F(1, 14) = 29.34, p < 0.01, \text{partial } \eta^2 = 0.68, \text{Power} = 0.99$ and gradual and significant weight loss was shown throughout the DSD programme and follow-up period (as indicated by significant deviation contrasts, all $p < 0.05$). FIT Profiler scores (in addition to Behavioural Flexibility) were also highly predictive of weight at final follow-up (Self-Responsibility $r = -0.70$; Awareness $r = -0.65$; Fearlessness $r = -0.63$; Integrity $r = -0.71$; $n = 15, p < 0.01$ in each case).

	Time 0 (pre-trial)	Time 1	Time 2	Time 3	Time 4	Time 5 (86days later)
Weight (kg) (SD)	86.73 (16.54)	85.87 (16.47)	85.43 (15.93)	84.62 (16.50)	84.12 (16.66)	82.28 (16.59)

Table 1. Participants' mean weight (kgs) at T0-T5

DISCUSSION

The aim of this study was to pilot a new version of the Do Something Different programme for weight loss.

This pilot study trials a version of the programme that is more prescriptive than the earlier, successful programme and acceptable to even the most reluctant participant. It is simple to follow, stipulates a task to be completed each day and gradually eases the participant into a new level of behavioural flexibility. The results build on our earlier finding that the Do Something Different programme is an effective behavioural intervention for purposeful weight loss. We confirmed the findings of previous studies, of a significant relationship between participants' FIT Behavioural Flexibility and their BMI, and that an increase in flexibility brings about a corresponding decrease in BMI.

The fact that the programme did not rely on participants' willpower or focus their attention on food (12) explains why the participants maintained their weight loss and not suffer the rebound effects associated with traditional food diets.

We have proposed a critical relationship between obesity and behavioural flexibility that has now received additional empirical validation.

This points to a positive and progressive way forward in managing weight loss and the Do Something Different programme is an acceptable, effective and workable alternative to unreliable food diets.

REFERENCES AND NOTES

1. R.W. Jeffrey, A.R. Folsom et al., "Prevalence of overweight and weight loss behavior in metropolitan adult population: The Minnesota Heart Survey experience", *American Journal of Public Health*, 74, pp. 349-352 (1984).
2. J.O. Hill, "Obesity treatment: does one size fit all?", *American Journal of Clinical Nutrition*, 81, pp. 1253-1254 (2005).
3. M.R. Freedman, J. King et al., "Popular diets: A scientific review - Executive summary", *Obesity Research*, 9, 1S-40S (2001).
4. T. Mann, A.J. Tomiyama et al., "Medicare's search for effective obesity treatments: Diets are not the answer", *American Psychologist*, 62, 3, pp. 220-233 (2007).
5. E.D. Shade, C.M. Ulrich et al., "Frequent intentional weight loss is associated with lower natural killer cell cytotoxicity in postmenopausal women: Possible long-term immune effects", *Journal of the American Dietetic Association*, 104, pp. 903-912 (2004).
6. T.I.A. Sorensen, A. Rissanen et al., "Intention to lose weight, weight changes, and 18-y mortality in overweight individuals without comorbidities", *PLoS Medicine*, 2, pp. 510-520 (2005).
7. M.L. Dansinger, E.J. Schaefer, "Low-fat diets and weight change", *Journal of the American Medical Association*; 295, pp. 94-95 (2006).
8. R.F. Baumeister, T.F. Heatherton et al., *Losing control: How and why people fail at self-regulation*. San Diego, CA: Academic Press (1994).
9. B (C) Fletcher, J. Hanson et al., "A psychological weight loss intervention programme based on the FIT Framework. In: Division of Health Psychology", *British Psychological Society*, Edinburgh: BPS, 13, p. 67 (2004).
10. B (C) Fletcher, B. Stead (Inner), *FITness & The FIT Corporation*, London: International Thomson Press (2000).
11. B (C) Fletcher, J. Hanson et al., "A behavioral flexibility approach to facilitating purposeful weight loss, Under review (2007).
12. B. (C) Fletcher, K.J. Pine et al., "How visual images of chocolate affect guilt and craving of female dieters", *Appetite*, 48, pp. 211-218 (2007).

