

Non-dieting group interventions for overweight and obese women: what predicts non-completion and does completion improve outcomes?

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Abstract

Objective: To determine factors which predict non-completion of group non-dieting interventions for overweight women, and to investigate whether completion improves outcomes.

Design: First, baseline predictors of non-completion were identified; then changes at 10 weeks and 12 months were compared between completers and non-completers of 10-week non-dieting interventions.

Setting: General community.

Subjects: Participants were 119 women (aged 25–65 years, BMI ≥ 28 kg/m²) with at least one cardiovascular risk factor. Participants who attended at least eight of the ten sessions were classified as completers, and non-completers were those who attended fewer than eight sessions. Measures included BMI, blood pressure, psychological distress, lifestyle behaviours and eating self-efficacy.

Results: Logistic regression analyses indicated that women were less likely to be non-completers at non-dieting group programmes if, at baseline, they were more highly educated or had healthier nutrition behaviours (controlling for education). Only healthier nutrition behaviour was negatively associated with non-completion in the final model. Twelve months after the intervention, completers showed significantly greater improvements in body weight (mean change -0.53 kg), systolic and diastolic blood pressure (-6.3 and -4.1 mmHg, respectively), stress management behaviour score ($+0.5$) and psychotic symptoms score (-0.1) than non-completers (all $P < 0.05$).

Conclusions: Highly educated women already engaging in some healthier lifestyle choices were less likely to be non-completers in non-dieting group programmes. Since important treatment outcomes vary according to attendance, future trials of non-dieting interventions should report the effects of completion on outcomes.

Keywords
Non-dieting
Stress management
Completion
Nutrition
Overweight

In response to the poor long-term success and high rates of weight regain associated with deliberate caloric restriction^(1,2), non-dieting approaches (also known as 'health at every size') have been advocated for overweight and obesity^(3,4). Non-dieting approaches encourage eating in response to physiological hunger and satiety cues, rather than deliberate restriction of food intake^(5–7). This style of eating, termed intuitive eating^(6,8), is proposed to lead to a reduction in eating that occurs when one is not physically hungry. Such approaches do not involve a preoccupation with food regimens or weight-loss goals; reduce the feelings of guilt and deprivation often associated with dieting⁽⁶⁾; and help to alleviate the psychological distress caused by long-term dieting failure and perceived lack of self-control⁽⁹⁾.

In contrast to the large body of literature evaluating interventions that have a weight loss or dieting focus,

there have been relatively few published randomized trials of non-dieting interventions^(5,7,10–21). Non-dieting group-based programmes for overweight and obese women have produced greater psychological benefits^(5,7,12,15) and improvements in eating behaviours^(5,7,15) than dieting (i.e. weight loss-focused) group programmes. Most non-dieting programmes are associated with weight maintenance^(5,7,11,15,16,19,20). Inclusion of intensive stress management training in a non-dieting group programme for overweight women has been shown to enhance stress management and medical symptom outcomes, but not weight outcomes⁽²⁰⁾.

To date, among studies of group non-dieting interventions^(5,7,10,16–19,21), only one has reported attendance/completion data⁽¹²⁾. Rapoport *et al.*⁽¹²⁾ reported significantly higher binge eating, but no significant BMI, depression or demographic differences in women who

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attended fewer than seven out of ten sessions compared with those who attended at least seven sessions. In an evaluation of a group intervention focused on training in techniques for eliciting the relaxation response, participants who attended at least seven of ten sessions had lower levels of psychological distress, were more highly educated and more likely to be married and gainfully employed at baseline than those who attended fewer than seven sessions⁽²²⁾. Even in group interventions with a clear weight-loss focus, predictors of completion are seldom reported⁽²³⁾.

The aims of the current study were: (i) to examine whether demographics, lifestyle behaviours, health outcomes or psychological factors predict non-completion of group non-dieting interventions for overweight and obese women; and (ii) to test the hypothesis that completers benefit more from group non-dieting interventions than non-completers. To our knowledge, this is the first study to examine these questions. The challenging process of shifting from diet-thinking and weight-loss goals to intuitive eating^(6,20) may be facilitated by more regular attendance at group programmes, and thus we hypothesized that completers experience greater benefits than non-completers.

Methods

The current study is part of a larger randomized trial of a non-dieting stress reduction intervention⁽²⁰⁾. The trial, comparing three non-dieting interventions, took place in Dunedin, New Zealand between 2002 and 2003. Two of these non-dieting interventions were group programmes: one focused on stress reduction and relaxation training; the other focused on healthy lifestyle change.

Participants

Women were recruited by newspaper advertisements and locally distributed fliers. Participants were aged between 25 and 65 years, with a BMI ≥ 28 kg/m² (indicating substantial overweight or obesity) and at least one other CVD risk factor (hypertension $\geq 140/90$ mmHg, total cholesterol ≥ 5.5 mmol/l, type 2 diabetes or current smoker). Respondents were excluded if they had been previously diagnosed with heart disease or cancer, were pregnant, insulin-dependent, had binge-eating disorder, were taking medications for a psychiatric illness, or were involved in another lifestyle intervention programme.

In the larger trial, randomization was stratified by age and BMI and performed independently by a statistician. Study protocol was approved by the Ethics Committee of the University of Otago, Dunedin, New Zealand.

Interventions

During the first phase (10 weeks) of the group non-dieting interventions, participants attended weekly two-hour group sessions. During the second phase (8 months), group

sessions were provided biweekly and then monthly, with the aim of reinforcing programme content through the provision of ongoing support for healthy behaviour change.

In both group interventions (Programme 1, P1 and Programme 2, P2), participants were encouraged to let go of their dieting habits, and shift focus away from body-weight goals towards developing healthy lifestyle changes that are sustainable in the long term. Although guidelines on healthy eating were provided, interventions recommended eating that was regulated by body signals of hunger and satiety, and encouraged greater awareness of the triggers to eating that are unrelated to physical hunger. The differences between P1 and P2 are described in detail elsewhere⁽²⁰⁾. Briefly, P1 was based on the Harvard Mind/Body Medical Institute Medical Symptom Reduction programme^(24,25). Each session included intensive instruction and practice in eliciting the relaxation response. Techniques included progressive muscle relaxation, abdominal breathing and hatha yoga. Based on Social Cognitive Theory⁽²⁶⁾, P2 included a greater focus on nutrition and physical activity than P1, but was consistent with non-dieting principles. P2 had no relaxation response training.

Attendance criteria

Participants who attended at least eight of the initial ten group sessions were classified as completers. Women who attended seven or fewer sessions were regarded as non-completers.

Measures

Participants completed assessments at baseline, 10 weeks and 12 months.

Demographics

At the baseline visit, information on demographic factors such as age, highest attained education level, relationship status and occupation was collected.

Lifestyle behaviours

The fifty-two-item Health-Promoting Lifestyle Profile II (HPLP-II)⁽²⁷⁾ was used to assess the frequency with which participants engaged in a variety of lifestyle behaviours and has been used in evaluations of the Harvard Mind/Body Medical Institute's Medical Symptom Reduction programme^(22,25). Results of three subscales from the HPLP-II (stress management, physical activity and healthy nutrition-related behaviours) are presented. At each visit, participants provided information on smoking status.

Health outcomes

For height and weight measurements, participants removed shoes and wore light clothing. Height was measured to the nearest 0.1 cm using a stadiometer (Holtain Ltd, Crymch, UK) and weight was measured to the nearest 0.1 kg using a calibrated electronic scale (model Alpha 770; Seca, Hamburg, Germany). BMI (kg/m²) was calculated to the

nearest 0.1 units. Blood pressure was assessed using an Accoson sphygmomanometer (Hospital Model; London, UK), with participants in the seated position. Systolic and diastolic pressures were measured twice, and an average calculated. Large or small blood pressure cuffs were used as appropriate.

Psychological factors

The Eating Self-efficacy Scale⁽²⁸⁾ measured perceived difficulty in controlling overeating in different situations.

The Revised Symptom Checklist-90 (SCL-90-R)⁽²⁹⁾ has been used extensively to monitor psychological distress^(24,30). The current study includes results for the ninety-item Global Severity Index (GSI), and the nine dimensions of somatization, obsessive-compulsiveness, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism.

Analyses

To ensure that completer and non-completer groups were of sufficient size for multivariate analysis, a cut-off of at least eight sessions was used to denote completion. Means, standard deviations and frequencies (where appropriate) were calculated for all baseline variables.

Participants in the two different group interventions (P1 and P2) showed few statistically significant differences at baseline. The combination of participants from these two group non-dieting interventions was decided upon a priori, as there was no expectation that the predictors would differ in their effect between the two programmes, in order to maximise statistical power and to permit more complex multivariate models to be investigated. Interactions between programmes and predictors were checked in all cases.

Univariate logistic regression models were employed to determine which non-modifiable factors (age, education, relationship status and employment) significantly differ-

entiated non-completers (coded as 1) from completers (coded as 0). A series of logistic regression models was then developed, including other potential discriminating measures, one at a time (baseline BMI, weight, blood pressure; baseline eating self-efficacy, HPLP-II and SCL-90-R scores; and smoking status), with all of the non-modifiable predictors which had univariate $P < 0.20$ included in each model. Smoking status was modelled using three categories: never smoker, former smoker and current smoker. Pairwise comparisons between levels of categorical variables (smoking and employment status) were examined for statistical significance only where the overall effect was statistically significant. Variables which had $P < 0.10$ in the two-variable logistic regression models were then included in the final multiple logistic regression model. Final results were considered significant where $P < 0.05$. Because there were only fifty cases of non-completers and sixty-nine completers, only five predictors could be included in the final model.

The *t* test (assuming unequal variance) was employed to identify differences in 10-week and 12-month changes between completers and non-completers.

All analyses were conducted using the SAS statistical software package version 9.1.2 (SAS Institute Inc., Cary, NC, USA)⁽³¹⁾.

Results

Of the 119 participants who completed baseline assessments, sixty-nine (58%) attended eight or more sessions and fifty (42%) attended fewer than eight sessions. Demographic characteristics for participants (including for completers and non-completers) are shown in Table 1. At baseline, the majority of participants were middle-aged, educated, in relationships, employed for wages or salary, obese, and with moderate blood pressure.

Table 1 Baseline demographic characteristics of participants: women (aged 25–65 years, BMI \geq 28 kg/m²) with at least one cardiovascular risk factor, Dunedin, New Zealand, 2002

Characteristic	Total	Completers	Non-completers
<i>n</i>	119	69	50
Mean age (years)	46.3	46.6	46.0
Education (%)			
Did not complete high school	19.3	13.0	28.0
Completed at least high school	80.7	87.0	72.0
Relationship status (%)			
With partner	74.8	75.4	74.0
Without partner	25.2	24.6	26.0
With children	55.5	59.4	50.0
Without children	44.5	40.6	50.0
Occupation (%)			
Employed full-time	31.9	30.4	34.0
Employed part-time	41.2	40.6	42.0
Not employed	26.9	29.0	24.0
Smoking status (%)			
Never smoker	57.1	56.5	58.0
Former smoker	23.5	30.4	14.0
Current smoker	19.3	13.1	28.0

Intervention-by-predictor interactions

Of the intervention-by-predictor interactions, only the effect of anxiety was statistically significant ($P = 0.041$, all other $P > 0.165$). The effect of anxiety was opposite to that expected (higher values were associated with completion in P2 and non-completion in P1) and the effect of anxiety was not statistically significant within either intervention group ($P = 0.095$ for P1, $P = 0.234$ for P2). As this result is difficult to interpret, the results in Table 2 for anxiety are from the main effects model which does not include the interaction, and which shows no overall evidence of an effect of anxiety ($P = 0.955$).

Predictors of non-completion: logistic regression analyses

Univariate analyses of non-modifiable variables (age, education, relationship status and occupation) showed that only education significantly differentiated completers

from non-completers. The odds of those who did not complete high school being non-completers were 2.59 (95% CI 1.02, 6.60; $P = 0.046$; see Table 2). Subsequently, all other baseline predictors were examined in separate logistic regression analyses, in which education was controlled for. Smoking status showed potential for differentiating completers from non-completers ($P = 0.043$ for the overall test of differences between all three categories). However, pairwise comparisons between the smoking categories revealed no statistically significant differences between current and never smokers or between former and never smokers, although there was strong evidence of a difference between current and former smokers (OR = 4.75; 95% CI 1.40, 16.15; $P = 0.013$). The odds were non-statistically significantly elevated for current smokers (OR = 1.95; 95% CI 0.73, 5.22; $P = 0.183$) and reduced for former smokers (OR = 0.41; 95% CI 0.15, 1.12; $P = 0.083$). Two other variables

Table 2 Univariate logistic regression analysis for predictors of being a non-completer of group non-dieting interventions for overweight women, Dunedin, New Zealand, 2002–3

Variable	OR	95% CI	P value
Non-modifiable			
Education			
Did not complete high school v. completed at least high school	2.59	1.02, 6.60	0.046*
Relationship status			
With partner v. without partner	1.07	0.47, 2.48	0.866
With children v. without children	1.46	0.70, 3.05	0.308
Occupation			0.820
Employed full-time v. employed part-time	1.08	0.46, 2.54	
Employed part-time v. not employed	0.80	0.32, 1.99	
Modifiable (controlling for education)			
BMI (kg/m ²)	1.03	0.97, 1.11	0.319
Weight (kg)	1.01	0.99, 1.04	0.400
Smoking			0.043
Current smoker v. never smoker	1.95	0.73, 5.22	
Former smoker v. never smoker	0.41	0.15, 1.12	
Blood pressure (mmHg)			
Systolic	0.98	0.95, 1.00	0.076
Diastolic	0.98	0.95, 1.02	0.348
Eating self-efficacy score†			
Negative affect	1.00	0.99, 1.02	0.676
Socially acceptable circumstances	0.98	0.95, 1.02	0.317
HPLP-II‡			
Nutrition	0.40	0.19, 0.85	0.017*
Physical activity	0.57	0.27, 1.23	0.153
Stress management	1.00	0.42, 2.37	0.993
SCL-90-R§			
GSI	0.93	0.37, 2.36	0.879
Depression	1.02	0.57, 1.84	0.945
Anxiety	1.02	0.44, 2.39	0.955
Hostility	1.01	0.53, 1.92	0.987
Interpersonal sensitivity	0.64	0.32, 1.29	0.213
Obsessive compulsive	1.00	0.51, 1.93	0.990
Paranoid ideation	0.88	0.39, 1.97	0.752
Phobic	0.36	0.07, 1.85	0.223
Psychotic	0.54	0.16, 1.80	0.314
Somatization	1.39	0.65, 2.95	0.398

HPLP-II, Health-Promoting Lifestyle Profile II; SCL-90-R, Revised Symptom Checklist-90; GSI, Global Severity Index.

* $P < 0.05$.

†Eating self-efficacy factors were rated on a 7-point Likert scale from 1 (no difficulty controlling overeating) to 7 (most difficulty controlling). Lower scores indicate higher self-efficacy.

‡Dimensions of the HPLP-II were scored using a Likert scale from 1 (never) to 4 (routinely). Higher scores indicate healthier behaviours.

§The SCL-90-R was scored on a 5-point scale from 0 (not at all) to 4 (extremely). Lower scores indicate lower levels of psychological stress.

also had $P < 0.10$, showing potential for differentiating non-completers from completers: systolic blood pressure (OR = 0.98; 95% CI 0.95, 1.00; $P = 0.076$) and (HPLP-II) nutrition (OR = 0.40; 95% CI 0.19, 0.85; $P = 0.017$; Table 2). These univariate results indicate that current smoking was associated with higher odds of being a non-completer, whereas higher nutrition values and higher blood pressure were associated with lower odds of being a non-completer.

Based on the results from these preliminary models, a final multiple logistic regression model was created using education, smoking status, systolic blood pressure and HPLP-II nutrition score to assess their independent effects on non-completion status (Table 3). After controlling for

other variables in the model, only nutrition behaviours significantly differentiated non-completers from completers. Specifically, women with higher nutrition scores at baseline were less likely to be non-completers (OR = 0.46; 95% CI 0.21, 1.00; $P = 0.0497$). There was also a tendency for higher values of systolic blood pressure to be associated with lower odds of being a non-completer (OR = 0.98; 95% CI 0.95, 1.00; $P = 0.070$). Additionally, there was a tendency for a difference between smoking categories (overall $P = 0.076$). While this was not statistically significant, we note that current smokers had higher odds of being non-completers compared with never-smokers (OR = 1.93; 95% CI 0.70, 5.36). However, former smokers were less likely to be non-completers than never smokers (OR = 0.45; 95% CI 0.16, 1.28).

Table 3 Multiple logistic regression analysis for independent predictors of being a non-completer of group non-dieting interventions for overweight women, Dunedin, New Zealand, 2002–3

Independent variable	OR	95% CI	<i>P</i> value
Smoking status			0.076
Current smoker v. never smoker	1.93	0.70, 5.36	
Former smoker v. never smoker	0.45	0.16, 1.28	
Systolic blood pressure	0.98	0.95, 1.00	0.070
Nutrition (HPLP-II)†	0.46	0.21, 1.00	0.0497*
Education	2.31	0.83, 6.39	0.108

HPLP-II, Health-Promoting Lifestyle Profile II.

* $P < 0.05$.

†See Table 2 for details of measure.

Changes in outcome measures over time in completers and non-completers

Baseline values and change scores at 10 weeks and 12 months for outcome variables are shown in Table 4. At the end of the 10-week programme, completers showed significantly greater improvements in stress management and interpersonal sensitivity than non-completers. At the 12-month follow-up, completers had lost on average 0.5 kg and experienced decreases in blood pressure of 6.3 mmHg (systolic) and 4.1 mmHg (diastolic). Over the same time period, non-completers had gained 2.6 kg and

Table 4 Baseline means, and 10-week and 12-month changes in outcome variables for completers (*n* 69) and non-completers (*n* 50) of group non-dieting interventions for overweight women, Dunedin, New Zealand, 2002–3

Variable	Baseline				10-week change				12-month change			
	Completers		Non-completers		Completers		Non-completers		Completers		Non-completers	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Weight (kg)	93.6	15.4	95.7	15.1	0.0	2.9	0.0	2.9	-0.5*	5.2	2.6	3.6
BMI (kg/m ²)	34.9	5.4	36.0	6.0	0.1	1.1	-0.9	5.4	-0.2*	1.9	1.0	1.3
Blood pressure (mmHg)												
Systolic	137.1	16.7	131.7	15.1	-1.1	13.3	0.3	12.4	-6.3*	13.8	6.2	14.1
Diastolic	84.9	10.2	83.2	10.8	-1.4	9.4	-4.3	8.6	-4.1*	10.1	2.0	10.2
Eating self-efficacy score†												
Negative affect	59.8	23.2	62.3	23.9	-2.7	23.2	-9.4	30.8	-8.6	25.4	-9.2	29.9
Socially acceptable circumstances	42.7	10.1	40.9	10.4	-2.4	10.9	-3.0	16.8	-5.6	10.2	1.2	14.9
HPLP-II†												
Nutrition	2.8	0.6	2.5	0.5	0.3	0.5	0.3	0.5	0.5	0.5	0.3	0.4
Physical activity	1.8	0.5	1.7	0.5	0.4	0.5	0.2	0.4	0.6	0.6	0.5	0.4
Stress management	2.1	0.4	2.1	0.4	0.4*	0.6	0.2	0.3	0.5*	0.5	0.2	0.4
SCL-90-R†												
GSI	0.5	0.4	0.5	0.4	-0.1	0.3	-0.1	0.2	-0.2	0.3	-0.2	0.2
Depression	0.8	0.6	0.8	0.7	-0.2	0.5	-0.1	0.4	-0.3	0.5	-0.3	0.4
Anxiety	0.4	0.5	0.4	0.4	-0.1	0.4	-0.1	0.3	-0.2	0.4	-0.2	0.3
Hostility	0.4	0.5	0.5	0.6	-0.2	0.5	-0.2	0.3	-0.3	0.5	-0.2	0.4
Interpersonal sensitivity	0.5	0.6	0.6	0.5	-0.3*	0.5	-0.1	0.4	-0.4	0.5	-0.2	0.3
Obsessive compulsive	0.7	0.6	0.7	-0.5	-0.1	0.5	-0.1	0.4	-0.2	0.4	-0.2	0.3
Paranoid ideation	0.4	0.5	0.4	0.4	-1.0	0.4	-0.9	0.3	-0.2	0.4	-0.2	0.3
Phobic	0.1	0.3	0.09	0.2	-0.8	0.3	-0.1	0.1	-0.1	0.2	0.0	0.1
Psychotic	0.2	0.4	0.2	0.3	-0.1	0.3	-0.1	0.2	-0.1*	0.3	0.0	0.1
Somatization	0.5	0.5	0.7	0.5	-0.1	0.4	-0.1	0.4	0.1	0.4	0.0	0.4

HPLP-II, Health-Promoting Lifestyle Profile II; SCL-90-R, Revised Symptom Checklist-90; GSI, Global Severity Index.

* $P < 0.05$ for between-group difference (*t* test) at 10 weeks or 12 months.

†See Table 2 for details of measures.

experienced increases in blood pressure of 6.2 mmHg (systolic) and 2.0 mmHg (diastolic). Furthermore, completers experienced greater improvements in stress management behaviours (HPLP-II) and a decrease in the psychotic subscale of the SCL-90-R (Table 4). All of these between-group differences were statistically significant ($P < 0.05$).

Discussion

The current study indicates that, among overweight and obese women, a number of factors predict non-completion at non-dieting group interventions. Nutrition behaviours significantly differentiated non-completers from completers after controlling for other factors in the model; there was also a tendency for systolic blood pressure, smoking status and education to differentiate the two groups. Specifically, women who had poorer nutrition behaviours at baseline and had not completed high school or pursued further education were less likely to complete non-dieting group interventions. Surprisingly, there was a tendency for those with lower baseline systolic blood pressure to be non-completers. There was also a tendency for smoking to have an overall effect on non-completion, with current smokers having higher odds and former smokers having lower odds of not completing the interventions compared with never smokers.

It is possible that education level is a marker of socio-economic status in the present study. Other researchers have reported that socio-economic status is predictive of attendance at programmes focused on elicitation of the relaxation response⁽²²⁾. It is possible that lower socio-economic status may negatively influence attendance owing to factors such as lack of childcare, employment situation (e.g. inflexible work hours) or reliance on public transport.

Findings from the Harvard Medical Symptom Reduction programme have suggested that baseline depression and other psychological distress measures are lower among completers than among non-completers^(22,24,25). Thus we were surprised to observe that pre-treatment SCL-90-R depression and anxiety scores did not significantly differentiate completers from non-completers.

Importantly, our results demonstrate that regular attendance translated into improved long-term outcomes. At the 12-month follow-up, compared with non-completers, completers had significantly greater improvements in body weight, systolic and diastolic blood pressure, and stress management behaviours. These findings suggest that attendance is of great importance to the success of group non-dieting programmes.

Although most trials of non-dieting interventions to date have reported weight maintenance (i.e. prevention of further weight gain), findings from the current study

suggest that weight outcomes may differ significantly depending on group programme attendance. It is possible that women who are more highly motivated or better suited to the non-dieting approach may experience a small but gradual weight loss over time. Further research is needed to explore this hypothesis.

In light of the improved outcomes associated with completion of non-dieting group programmes, it would be useful to develop and evaluate strategies to improve attendance at such programmes. Preparatory interventions such as role induction or motivational interviewing have been shown to improve attendance at other group programmes, including a group-based psychological treatment⁽³²⁾ and a behavioural weight-loss programme⁽³³⁾. Thus, it is possible that a preparatory phase may also improve attendance for non-dieting group programmes. The length of successful preparatory interventions has varied from an 11-minute role induction videotape to four 60-minute sessions of experiential pre-training⁽³²⁾. In the future, a short preparatory phase could enable programme facilitators to use motivational interviewing techniques to enhance participant readiness to adopt a non-dieting approach, including a shift in focus away from weight-loss goals. This approach in turn may improve attendance.

The present study has two limitations of note. First, for statistical reasons we employed a stringent cut-off point for regular attendance. Participants were required to have attended at least eight out of ten sessions to be categorised as a completer. If we had used a cut-off of seven sessions to denote completion, the logistic regression model would have been severely compromised. Second, we combined data from two non-dieting group interventions; however, most intervention-by-predictor interactions were non-significant.

The results of the study indicate that nutrition behaviours, systolic blood pressure, smoking status and education may predict non-completion in non-dieting group interventions. These findings may allow researchers to identify those at risk of non-completion and to develop strategies to improve attendance, and thus treatment outcomes. Such strategies could include, for example, group-based preparatory or orientation sessions prior to the start of the programme, email or telephone reminders about session dates and times, provision of childcare, subsidized transport costs or catch-up sessions. Investigation of the effects on both attendance and outcomes of adding a preparatory phase to non-dieting group programmes would be valuable. It is particularly important that future studies of non-dieting group interventions examine the effects of attendance on treatment outcomes. Trials of non-dieting treatments have concluded that this approach prevents weight gain^(5,7,11,15,16,19,20); however, our study suggests that weight and blood pressure outcomes may vary significantly according to attendance, with a gradual weight loss occurring for those who complete group interventions.

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