

ORIGINAL ARTICLE

Retention rates and weight loss in a commercial weight loss program

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Objective: To evaluate and describe retention rates and weight loss in clients participating in a commercial weight loss program.

Subjects: A total of 60 164 men and women ages 18–79 years who enrolled in the Jenny Craig Platinum program between May 2001 and May 2002.

Methods: Retention rates, mean weight loss and percent weight loss were calculated on a weekly basis for the 52-week period following initial enrollment in the weight loss program. Clients were categorized based on final week of participation in the program (weeks 1–4, weeks 5–13, weeks 14–26, weeks 27–39 and weeks 40–52) and weight loss was calculated at final week. A subgroup of clients was identified based on attendance through 13, 26 and 52 weeks. Mean and percent weight loss was calculated for these subgroups of clients.

Results: Of the 60 164 men and women who enrolled in the weight loss program, 73% were retained in the program after 4 weeks, 42% at 13 weeks, 22% at 26 weeks and 6.6% at 52 weeks. Clients who dropped out of the program during the first 4 weeks lost $1.1 \pm 1.6\%$ (mean \pm s.d.) of their initial body weight, whereas clients who dropped out between 40 and 52 weeks lost $12.0 \pm 7.2\%$. Clients in the 13-week, 26-week and 52-week cohorts lost 8.3 ± 3.3 , 12.6 ± 5.1 and $15.6 \pm 7.5\%$ of their initial body weight, respectively.

Conclusion: Weight loss was greater among clients who were retained in the program longer. The findings from this study suggest that a commercial weight loss program can be an effective weight loss tool for individuals who remain active in the program.

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Introduction

The growing prevalence of obesity and overweight has increased the need to find effective weight loss programs. For men and women who are overweight or obese, a modest weight loss of 5–10% of their body weight can lead to significant decreases in the co-morbidities associated with overweight and obesity.^{1,2} In the US population, estimates of the prevalence of attempts to lose weight range from 38 to 44% in women and 24 to 29% in men.^{3,4} Americans spend over \$33 billion annually on a variety of weight loss products and services.⁵ These weight loss services range from self-help attempts at dieting or physical activity, professional counsel-

ing, pharmacological interventions and surgical interventions to commercial weight loss programs with and without structured diets.

The number of commercial weight loss programs has increased to meet the need of consumers, but recent reviews of commercial weight loss programs have exposed the lack of scientific, peer-reviewed data from most programs.^{6,7} In their review, Tsai and Wadden⁷ suggested that prominent commercial weight loss programs should carry out 'naturalistic studies' following a large cohort to determine retention rates and weight loss at discontinuation. Such studies would provide consumers with adequate information to make informed decisions about a commercial weight loss program before joining. To address the relative lack of 'naturalistic studies' from commercial weight loss programs that has been identified in recent reviews, we performed analyses using data from a commercial weight loss program. The purpose of the study is to present data from a 'naturalistic study' of one

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commercial program, with the view that this information may be useful to health-care professionals and individuals seeking support for weight management. The specific objectives of this study were to evaluate retention rates and weight loss in clients participating in the weight loss program and to identify cohorts of committed clients based on attendance through 13, 26 and 52 weeks of the program and document their weight loss experiences.

Participants and methods

The weight loss program

Jenny Craig was established in 1983 with a mission to help clients achieve their weight management goals through a behavioral change approach, including healthy eating, an active lifestyle and a balanced approach to living. The program, designed by registered dietitians in consultation with a multidisciplinary Medical Advisory Board, consists of weekly one-on-one meetings with a trained consultant at a community-based facility who tailors the program to the client's food, menu and physical activity preferences while providing behavioral strategies to develop a balanced lifestyle for long-term weight management. Consultants also provide follow-up telephone and e-mail contacts with the clients along with Website/message board availability. Consultants help clients choose a realistic goal weight, based on their current weight and a healthy weight that corresponds to a body mass index range of 18.5–24.9 kg/m² and provide advice on how to increase physical activity. The program is designed to result in an average weight loss of 1 to 2 pounds per week to reach the client's goal weight. There is no minimum or maximum weight restriction for clients enrolling in the program because desired weight loss may range from 5 pounds to over 100 pounds depending on the client's needs. The average cost of enrolling in the program during the time period of the study was \$180, with enrollment costs ranging from \$20 to \$399 depending on promotions and discounts. In addition to the cost of enrollment, clients typically spend about \$20 to \$30 more per week on food when active in the program as compared to when they are off the program. This compares with data from the Consumer Expenditure Survey, which estimates that US consumers typically spend \$59 per week on food.⁸ An estimate of the cost of the program for a 1-year membership is \$1480, which includes enrollment and weekly food costs that are above what consumers would typically spend on food.

The healthy eating component of the diet and lifestyle modification program consists in defining an energy-reduced diet of 1200–2000 kcal/day based on the client's energy requirements. This plan includes prepackaged prepared food items and incorporates meal additions such as vegetables, fruit and whole grains to help reduce the overall energy density of the diet. The prepackaged foods are generally provided at the weekly meeting with the con-

sultant, and food selections are determined by the preferences of the client and how well they fit into the overall meal plan. Clients also receive counseling for making appropriate food choices in situations outside the context of prepackaged foods (e.g., eating in restaurants, eating when traveling, meals and snacks based on usual food choices).

Consultants also counsel clients on increasing physical activity by setting realistic goals that are based on the readiness, capabilities and preferences of the client. In general, the goal is for clients to accumulate at least 30 min of physical activity on 5 or more days of the week, based on recommendations from the Centers for Disease Control and Prevention, the American College of Sports Medicine⁹ and the office of the US Surgeon General.¹⁰ This commercial program utilizes extensive written materials and other media, such as CDs that promote increasing physical activity and videotapes to facilitate structured exercise activities.

The present study includes participants from the Platinum Program. The Platinum Program is a year-long program in which clients receive additional incentives to remain active in the program such as a walking audio program, a cookbook, and discounts for family members.

Participants

Clients eligible for the study were 65 154 men and women ages 18–79 years who enrolled in the Platinum Program in the United States between May 2001 and May 2002. Employees of the company and clients interested in maintaining weight rather than losing weight (defined as 'Maintenance' clients by the company) were not included in the sample for the analyses presented here. Of those initially eligible to be included in the analyses, 139 were excluded owing to unreliable baseline weight and 4851 were excluded owing to unrealistic weekly weight loss, defined as a change in weight of 15 pounds or more in 1 week, leaving 60 164 men and women in the study.

Data collection

A trained consultant obtained baseline weight and calculated a goal weight when the client registered for the program. Weight data were entered into a computer program for tracking purposes. Weight measurements were obtained when the client returned for the weekly one-on-one consultation. We are limited in the amount of demographic data available for the analysis owing to variations in data collection practices over time and across community centers. Approximately, 25% of clients are missing data on gender, 20% on age, 33% on marital status and 66% on occupation. For this reason, retention rates and weight loss data are pooled for men and women and stratification by demographic variables is not shown for some of the analyses.

Data analysis

We calculated retention rates on a weekly basis for the 52-week period following initial enrollment. Clients were

considered dropouts if they had missing weight data for 6 or more consecutive weeks during the 52-week period. If the client was a dropout, the final week was defined as the last week with weight data before missing 6 or more consecutive weeks. We calculated mean and percent weight loss at the final week for all clients. We then categorized clients into groups based on their percent weight loss and calculated mean and median weight for the final week and determined if retention differed between groups. The following groupings were used: clients who lost <5, 5–10, 10.1–15, 15.1–20 and >20% of their baseline weight. We tested for differences across groups using analysis of variance.

We identified clients with a high level of commitment to the program based on attendance at three different time periods. To be included in the 13-, 26-, or 52-week cohort, clients must have attended at least 85% of their weekly consultations during the initial 13-week period (11 of 13 consultations), 26-week period (23 of 26 consultations) or 52-week period (46 of 52 consultations), respectively. For this subanalysis, we excluded clients with missing data on gender. We calculated mean weight at baseline, and mean weight loss and percent weight loss at follow-up stratified by gender for each cohort. All data analyses were conducted with SAS version 8.2 (SAS Institute, Cary, NC, USA, 1999).

Results

Retention rates for all clients are shown in Figure 1. Of the 60 164 men and women who began the program, 73% were retained in the program after 4 weeks (1 month), 42% remained at 13 weeks (3 months), 22% at 26 weeks (6 months) and 6.6% were retained in the program for 52 weeks. After 10 weeks in the program, 50% of the participants had dropped out of the program, although

specific data on the reason for discontinuing in the program are not available in this data set.

The mean baseline weight for the 60 164 men and women in the study was 89.8 ± 21.2 kg (mean \pm s.d.) and the mean weight loss during participation in the program was 5.0 ± 5.5 kg. Percent weight loss is directly associated with the amount of time a client remains in the program (Figure 2). Mean baseline weight, mean weight loss and percent weight loss at dropout or last measurement was significantly greater for clients who remained in the program longer (Table 1). Clients who dropped out of the program during the first 4 weeks lost about 1% of their initial body weight compared with about 12% weight loss for clients who remained in the program at least 40 weeks (P for trend: <0.0001). Clients who dropped out of the program between weeks 14 and 26 (4–6 months) lost an average of 7.3% of their baseline body weight, a meaningful weight loss for reducing health risks associated with overweight and obesity.

When we stratified by percent of baseline weight loss, 56% of clients had a weight loss of less than 5% of their baseline weight, whereas 26.5% lost 5–10% of their baseline weight and 17.5% lost over 10% of their baseline weight (Table 2). The mean final week for clients who lost less than 5% of their baseline weight was 8.5 weeks, compared with 20.5 weeks for clients who lost between 5 and 10% of their baseline weight and 31 weeks for clients who lost 10.1–15% of their baseline weight.

Mean weight loss for the 13-, 26- and 52-week cohorts by gender are shown in Tables 3 and 4. Women and men experienced similar weight loss trends in all cohorts. Clients in the 52-week cohort had a larger baseline weight and weight loss compared to clients in the 13- and 26-week cohorts. Women and men who attended at least 11 of their consultations at 13 weeks lost approximately 8% of their body weight. Men and women in the 26-week cohort lost

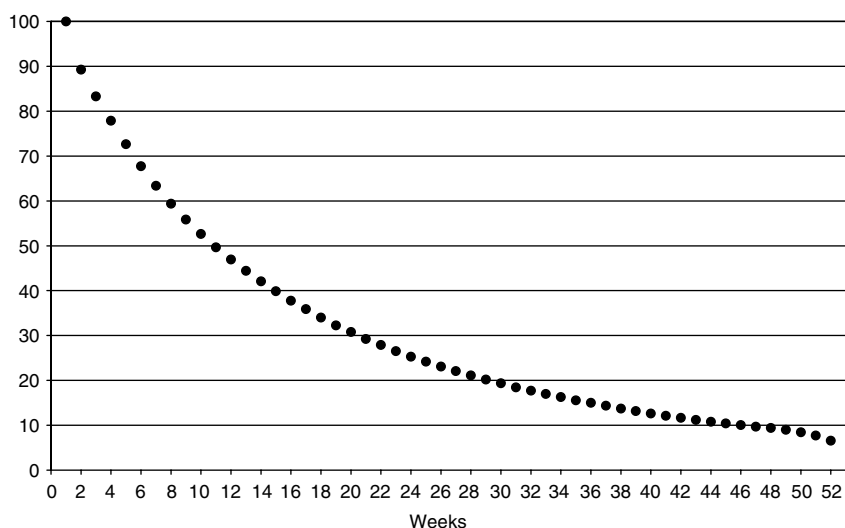


Figure 1 Percentage of 60 164 clients retained at each week during a 52-week time period.

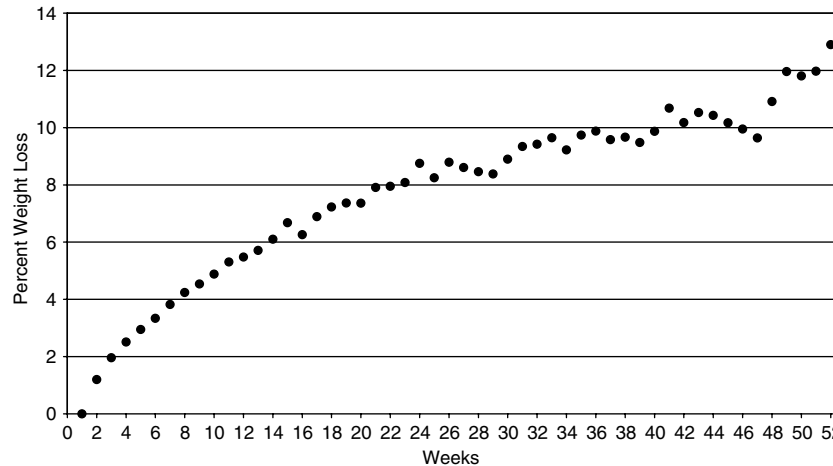


Figure 2 Percent weight loss at final week of attendance for 60 164 clients.

Table 1 Mean and percent weight loss for 60 164 clients by final week of attendance

Final week	N	Baseline weight (kg) Mean \pm s.d.	Weight loss (kg) Mean \pm s.d.	Percent weight loss Mean \pm s.d.
Weeks 1–4 (month 1)	16 465	89.4 \pm 21.9	1.0 \pm 1.5	1.1 \pm 1.6
Weeks 5–13 (months 2–3)	18 377	89.3 \pm 21.2	3.8 \pm 2.9	4.3 \pm 3.0
Weeks 14–26 (months 4–6)	12 042	89.6 \pm 20.4	6.6 \pm 4.4	7.3 \pm 4.5
Weeks 27–39 (months 7–9)	5 698	90.8 \pm 20.8	8.5 \pm 5.8	9.4 \pm 5.6
Weeks 40–52 (months 10–12)	7 582	93.3 \pm 21.4	11.5 \pm 8.2	12.3 \pm 7.2
<i>P</i> for trend		<0.0001	<0.0001	<0.0001

Table 2 Mean and median final week of attendance for 60 164 clients stratified by percent weight loss group

Percent weight loss group	N (%)	Final week mean \pm s.d.	Final week median
<5	33 760 (56.1)	8.5 \pm 10.5	5
5–10	15 929 (26.5)	20.5 \pm 13.8	16
10.1–15	6 716 (11.2)	31.0 \pm 14.3	28
15.1–20	2 468 (4.1)	38.9 \pm 12.7	41
>20	1 291 (2.2)	45.6 \pm 9.7	52
<i>P</i> for trend: <0.0001			

approximately 12% of their baseline weight. Clients in the 52-week cohort experienced the greatest weight loss, with women losing about 16% and men losing about 13% of their baseline weight. All three cohorts experienced a greater weight loss compared to the entire client sample.

Discussion

Retention is directly associated with weight loss in this study of clients enrolled in the commercial diet and lifestyle modification program between May 2001 and May 2002.

Although attrition in the study was high, those who remained in the program longer lost more weight. Clients who lost between 10.1 and 15% of baseline weight remained active in the program an average of 31 weeks. Clients who remained in the program longer also had a higher baseline weight suggesting that weight loss and retention may also be related to baseline weight, perhaps because these individuals had more weight to lose to reach their goal weight and thus took more time to achieve a weight that was acceptable to them. Additionally, clients who displayed greater commitment to the program as evidenced by higher attendance rates at weekly consultations lost more weight compared with clients who were less committed.

The attrition rates among clients in this study are similar to previously published studies of commercial weight loss programs, although higher than those observed in controlled clinical trials.^{11–16} Volkmar *et al.*¹⁷ found high attrition rates in a study of 108 women enrolled in a commercial weight loss program. In their study, 50% of the women had dropped out of the program by 6 weeks and 70% by 12 weeks. By comparison, a larger percentage of clients in the present analyses were retained at both 6 and 12 weeks. Approximately, 32% of the clients were no longer active in the program at 6 weeks and 53% had dropped out by 12 weeks. Data on the reason for dropout or reason for

Table 3 Mean weight loss for the 13-, 26- and 52-week cohorts – women

	13-week cohort N = 14 730 Mean ± s.d.	26-week cohort N = 5167 Mean ± s.d.	52-week cohort N = 1471 Mean ± s.d.
Baseline weight (kg)	90.07 ± 19.76	92.93 ± 20.11	96.48 ± 21.43
Follow-up weight (kg)	82.58 ± 18.41	81.12 ± 17.73	80.93 ± 17.37
Weight loss at follow-up (kg)	7.49 ± 3.38	11.81 ± 5.75	15.56 ± 9.37
Percent weight loss (%)	8.31 ± 3.25	12.57 ± 5.09	15.61 ± 7.54

Table 4 Mean weight loss for the 13-, 26- and 52-week cohorts – men

	13-week cohort N = 1204 Mean ± s.d.	26-week cohort N = 441 Mean ± s.d.	52-week cohort N = 140 Mean ± s.d.
Baseline weight (kg)	114.43 ± 22.29	118.47 ± 23.53	123.12 ± 25.08
Follow-up weight (kg)	104.29 ± 20.69	103.58 ± 20.48	106.34 ± 21.07
Weight loss at follow-up (kg)	10.14 ± 4.64	14.89 ± 7.90	16.77 ± 10.50
Percent weight loss (%)	8.84 ± 3.55	12.39 ± 5.41	13.25 ± 6.73

remaining in the program are not available for these clients, but based on other data from this commercial program, potential reasons for leaving the program include cost, scheduling conflicts/travel, tiring of the food, unrelated health issues, meeting weight loss goals and/or stopped losing weight. Customer satisfaction data collected by the company suggest that clients remain in the program because of the convenient, healthy meal options and the personal accountability required of one-on-one weekly meetings with a consultant. Published data on retention and attrition in weight loss programs are generally based on smaller sample sizes and shorter follow-up periods.^{17–20} Lowe *et al.*²⁰ reported an attrition rate of 37% in 985 study participants assigned to a 4-week Weight Watchers intervention, compared to a 27% attrition in the present study. A strength of our study is the large sample size of free-living men and women studied over a 52-week period, which may offer a realistic view of retention rates among clients who enroll in commercial weight loss programs.

The National Institutes of Health clinical guidelines for the treatment of overweight and obesity state that the goal of weight loss therapy should be to reduce body weight by 10% from baseline with a weight loss ranging from $\frac{1}{2}$ to 2 pounds per week over a 6-month period.¹ In our study, 17.8% of the clients lost more than 10% of their baseline weight, whereas 26.5% lost between 5 and 10% of their baseline weight. Data from the Diabetes Prevention Program demonstrate that a 7% weight loss, in addition to an increase in physical activity and other dietary changes, results in a 58% reduction in risk of developing diabetes.² Approximately, 49% of participants in the Diabetes Prevention Program achieved the recommended 7% weight reduction after 24 weeks of the carefully controlled and intensive intervention.²¹ In comparison, clients in our study who dropped out of the program between weeks 14 and 26 lost

7.3% of their baseline weight, which is an amount that should provide important health benefits, whereas those who remained in the study beyond 26 weeks lost significantly more weight. Additionally, highly motivated clients who attended at least 11 consultations by week 13 had a mean weight loss of over 8% of baseline weight and women and men who demonstrated a high level of commitment to the program at 26 weeks lost more than 12% of baseline weight.

The findings in the present study are consistent with results from other studies of commercial weight loss programs and suggest that this program can be an effective weight loss tool for individuals who remain in the program for at least 14 weeks. These clients lost more than 7% of their baseline weight at an estimated cost of \$400 through 14 weeks, including enrollment costs and additional food costs that are above typical weekly food expenditures. Published results from the Weight Watchers program show weight loss ranging from 1.9 kg at 4 weeks²⁰ to 5.0 kg at 1 year.²² These results may differ owing to the number of participants, the length of follow-up and differences in the population. Investigators studying the Take Off Pounds Sensibly (TOPS) program reported a weight loss of 14.2 pounds (6.5 kg) in 560 participants at 1 year.²³ Clients in the current study who remained active at 52 weeks lost about 12.6 kg, although this represents only 6.6% of the study population.

The study has limitations that may hinder the interpretability of the data. The high attrition rate observed in the study makes it difficult to determine the effectiveness of the program. Clearly, clients who remain in the program experience clinically significant weight loss, but because the reasons for dropout are unknown it is difficult to describe differences between those who dropped out and those who remained active in the program. Also, we are unable to determine which aspects of the program (i.e., one-on-one

consultations, the structured diet, lifestyle counseling and/or physical activity) are most effective in producing weight loss. We do not have access to demographic data on a large percentage of the population and, therefore, are limited in the types of analyses we can perform. Future data collection efforts should follow a standardized protocol and include a complete ascertainment of baseline characteristics and demographic data in addition to starting weight, such as height, sex, marital status, income level, occupation and a basic medical history. The addition of these data would allow for better characterization of the clients who join commercial weight loss programs and better understanding of the factors that influence success in the program. Additional baseline and demographic data would also enable more accurate comparisons of clients who enroll in different commercial weight loss programs. Finally, more complete data on reasons for dropping out or for remaining in the program would be beneficial.

Although the time period of the study is adequate to describe the weight loss experience of clients in the program, lack of data on weight loss maintenance is a limitation of the study. In a previously published study, Wolfe²⁴ found that 82% of 267 Jenny Craig clients interviewed in a phone survey remained within 10% of their post-treatment weight after a mean follow-up of 56.8 weeks. Weight Watchers reported that 19.4% of 1002 successful participants who met their goal weight during the program were still within 5 pounds of their goal weight 5 years later.²⁵ Among 192 participants in the OPTIFAST program, 57% of participants had maintained 5% or more of their weight loss after 3 years of follow-up.²⁶ Although results from the current study are promising, additional follow-up studies on a large cohort of clients who have completed the program would provide information on the program's ability to help clients maintain their initial weight loss.

The data presented here can be used by health-care professionals and individuals to characterize the average retention and success rates experienced by clients in the program. This information may be useful in decision making regarding how to select a weight management approach. In comparison to more cost-prohibitive weight loss options such as hospital-based or medically supervised programs, commercial weight loss programs provide easily accessible options for individuals seeking to lose weight while providing strategies to develop a balanced lifestyle that incorporates healthy eating and physical activity.

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