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# The "Goal Setting Approach" for Overweight and Obese Patients: Results of a Retrospective Cohort Study in a Dietetic Consultation

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### ABSTRACT

**Purpose:** To describe the performance of a dietary procedure based on a cognitive behavioral approach among overweight or obese patients. **Methods:** Standardized 45 minutes consultations were conducted by a dietician to obese (n=139) and overweight (n=56) patients followed between 1998 and 2003 at the dietetic consultation of the outpatient clinic of the University Hospitals of Geneva. Outcome measures were the proportion of eating behavior changes and weight change over time. **Results:** Patients attended a mean of 7 consultations and reached on average 57% of their dietary behavioral goals. At the end of follow-up, 36 (19%) patients had lost at least 5% of initial weight (mean weight change 8 kg SD 3.9) and 8 (4%) had gained at least 5% of initial weight. Major life events, night eating syndrome, and a lower proportion of reached goals were associated with weight gain. **Conclusions:** Dietetic treatment based on behavioral goal setting shows encouraging results in terms of weight evolution and is compatible with standard care reimbursement in many countries. Dieticians and other health professionals could focus on behavioral goals to be achieved in the short term.

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### INTRODUCTION

Obesity is a major health problem worldwide.<sup>1</sup> For obese individuals who want to lose weight, the classic approach using meal plans and nutrient calculations has often proved ineffective.<sup>2</sup> Restrictive dieting could increase dietary intake, eating disorders and weight gain.<sup>3-11</sup> Recent publications call for weight-management approaches that anticipate the damage of weight regain.<sup>12,13</sup>

Dieticians play an important role in translating these guidelines into practice, and also in evaluating their feasibility, their acceptability, and their impact. Therefore, we developed a dietary procedure based on recent guidelines, principles of cognitive behavioral treatment and behavioral goal setting approach.<sup>14-19</sup> Rather than aiming for a general goal ("lose weight", "improve diet quality"), or calculating meal plans, the dietician helps the patient in establishing specific behavioral goals to be achieved in the short term, adapted to the individual lifestyle and possibilities.<sup>16</sup> This approach was implemented and evaluated at the Dietetic Consultation, Division of Primary Care Medicine of the University Hospitals of Geneva.

The aim of the present study was to describe the performance of this approach in "real-world conditions". The main outcome measures were the proportion of eating behavior changes that had been reached between the consultations, weight change over time and its determinants.

## METHODS

The intervention followed a standard cognitive-behavioral structure, and was conducted by a trained dietician during 45 minute consultations. Two evaluation sessions were planned two weeks apart, prior to the monthly treatment sessions. Total number of consultations was defined according to the needs and motivation of the patients, usually between 3 and 12. Each consultation was structured as follows:

1. Introduction: explanation of the sequence, duration and objective of the consultation.
2. Review: assessment of the changes since the last consultation: What were the goals? Have they been reached? What has changed? What was easy? What was difficult?
3. Theme: discussion of one or two main themes, focusing on problematic behaviors or cognitions reported by the patient. The dietician applied Socratic dialogue to challenge patient's beliefs and expectations, according to patient's stage of change.<sup>20</sup>
4. Goal setting: dietician's open-ended questions allowed the patient to define 3 to 5 behavioral (including observational) or cognitive goals (Table 1).
5. End of the consultation: the dietician summarized, prompted feed-back and organized follow-up.

**Table 1. Some examples of goals defined with the patients at the Dietetic consultation of the University Hospitals, Geneva.**

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| <p><b>Observation goals (evaluation)</b><br/>           Keep a food and eating behaviour diary during 5 consecutive days, before next consultation.<br/>           Assess hunger sensation before eating, on a scale between 0 and 5, at least 2 days a week, during 2 weeks.<br/>           Count binge eating episodes and write down the circumstances (time, place, activities, thoughts, and feelings) at least 5 days until next consultation.</p>   |
| <p><b>Cognitive goals</b><br/>           Identify barriers to practice more physical activity.<br/>           Identify barriers to go to work on foot/by bicycle.<br/>           Visualize oneself walking to work.<br/>           Work on shopping strategies in order to increase fresh fruits and vegetables consumption.<br/>           Visualise oneself eating less servings of sweets or snacks than before.<br/>           Reflect on the significance of healthy eating.<br/>           Identify pros and cons of losing weight, practicing more physical activity, eat less fat, etc.</p>  |
| <p><b>Behavioural goals (frequencies and quantities were individualized for each patient)</b><br/>           Sit at the table to eat (even for a snack or when bingeing), at least x days a week, during y weeks.<br/>           Turn off television before eating (even for a snack), as often as possible, until next consultation.<br/>           Stop eating when satiety appears, at least x times a week.<br/>           Eat one more serving of vegetables x times a week, during y weeks.<br/>           Use a spoon to measure oil when cooking, as often as possible, during x weeks.<br/>           Drink 1 glass of fruit juice in the morning; drink water instead of fruit juice during the day, as often as possible until next consultation.<br/>           Walk to work at least x times a week, until next consultation.<br/>           Go to gym once a week, during x weeks.</p> |

To evaluate our intervention, we conducted a retrospective cohort study. We reviewed the files of all new patients addressed by their physician for overweight or obesity between January 1998 and August 2003 and seen at least twice (n= 404). Patients agreed to participate by filling an anonymous form, also used to collect socio-demographic characteristics. Forty-two patients were excluded because they had a body-mass index (BMI) <25 kg/m<sup>2</sup>, and 167 because the consultation was performed by a dietician unfamiliar with the goal-setting approach, leaving 195 patients for the analysis. The primary outcomes were the 1) mean proportion of goals that had been reached over time (number of goals reached divided by total number of different goals set during the follow-up), and 2) weight change, defined as a decrease or increase of at least 5% of the initial weight between the first and the last consultation.<sup>13, 21</sup> At each consultation, a structured interview was conducted to assess behavior change and achieved goals. The patient was weighed with the same scale with light clothing, but without shoes or heavy items. Past dietary care, eating behaviors (including capacity to identify inner cues of satiety or hunger), binge eating disorder, bulimia and night eating syndrome were assessed.<sup>22-24</sup> Major life events were rated from 40 to 100 on the scale by Holmes & Rahe.<sup>25</sup> All data from the patients' files were abstracted by an experienced dietician not working at the medical outpatient clinic, using standardized forms and procedures. Data are described as frequencies, proportions, means and standard deviations (SD). Fisher's exact test (2-sided) and Student's T-test were used. Statistical significance was set at p<0.05 for all analyses.

## RESULTS

### Baseline Characteristics

Of the 195 patients included, 139 (71%) were obese (BMI $\geq$ 30) and 56 (29%) overweight (BMI  $\geq$ 25 and  $<$ 30). Mean baseline BMI was 32 kg/m<sup>2</sup> (SD 4). Patients were mostly women (132; 68%). Mean age was 43 years old (SD 43; Quartiles 33-40-54). Fifty (26%) patients (39 women and 11 men) suffered from at least one eating disorder: binge eating disorder (n= 39), night eating syndrome (n=26), bulimia nervosa (n=1). Ninety-seven patients (50%) were not able to identify or respect their inner cues of satiety or hunger. Seventy-six (39%) had some comorbidity and 36 (19%) had a history of professional dietetic counseling.

### Follow-up Characteristics

Mean number of consultations per patient was 7 (SD 3.6; Range 2-17; Quartiles 4-6-9). Mean duration of follow-up was 7 months (SD 6.7; Range 1 month-2.8 years; Quartiles 2-4-11). Fourteen patients (7%) dropped-out after the second consultation, and 29 (15%) after the third. During follow-up, 66 patients (34%) experienced at least one major life event.

### Outcomes

An average of 8 different goals (SD 6.5) were set by patients during follow-up (Table 1 for examples). Over time, a mean of 57% (SD 27%) of goals were reached. Fifty-one patients (31%) reached more than two-thirds of their goals and 30 patients (15%) reached 100% of their goals.

Between the first and the last consultation, 36 patients (19%) lost more than 5% of initial weight and 8 patients (4%) gained more than 5% of initial weight. The remaining 151 (77%) had a stable weight (change  $\leq$  +/- 5% of initial weight). Mean weight loss between the first and the last consultation was 1.4 kg (SD 4.2). Mean weight change among the 36 "successful" patients was minus 7.7 kg (SD 3.9, range 4 to 20), corresponding to an 8% loss of initial weight. Among the 8 patients who gained weight, the average increase was 7.8 kg (SD 3.4, range 4 to 13), corresponding to a 9% gain of initial weight.

### Factors Associated with Weight Change

Occurrence of major life event during follow-up was significantly associated with weight gain (p=0.02), as well as with weight loss (p=0.01). Night eating syndrome was also associated with weight gain (p=0.04). Attending at least 6 consultations was associated with weight loss (p<0.001) (Table 2). Patients who gained 5% or more of initial weight reached a smaller proportion of their goals than the others (37% vs. 58%, p=0.03). Patients who lost 5% or more of initial weight attended more consultations than the others (9 vs. 6, p<0.001)

|   | N (%)     | $\geq$ 5% weight loss <sup>1</sup> | p-value* | $\geq$ 5% weight gain <sup>2</sup> | p-value* |
|---|-----------|------------------------------------|----------|------------------------------------|----------|
| <u>Socio-demographic and medical characteristics (N, %)</u> |           |                                    |          |                                    |          |
| Male  | 63 (32)   | 9 (14)                             | -        | 2 (3)                              | -        |
| Female  | 132 (68)  | 27 (20)                            | 0.33     | 6 (5)                              | 1.0      |
| Swiss origin  | 62 (32)   | 14 (23)                            | -        | 5 (8)                              | -        |
| Non-Swiss origin  | 133 (68)  | 22 (17)                            | 0.33     | 3 (2)                              | 0.11     |
| Excellent or good comprehension of French language          | 140 (72)  | 29 (21)                            | -        | 6 (4)                              | -        |
| Poor comprehension of French language (with interpreter)    | 55 (28)   | 7 (13)                             | 0.22     | 2 (4)                              | 1.0      |
| Swiss resident  | 155 (80)  | 25 (16)                            | -        | 8 (5)                              | -        |
| Asylum seeker or refugee                                    | 40 (20)   | 11 (27)                            | 0.11     | 0                                  | 0.21     |
| No past professional dietetic counselling                   | 159 (82)  | 33 (21)                            | -        | 5 (3)                              | -        |
| Past professional dietetic counselling                      | 36 (18)   | 3 (8)                              | 0.10     | 3 (8)                              | 0.17     |
| No Major life event during follow-up                        | 128 (66)  | 17 (13)                            | -        | 2 (2)                              | -        |
| Major life event during follow-up                           | 66 (34)   | 19 (29)                            | 0.01     | 6 (9)                              | 0.02     |
| <u>Eating disorders (N, %)</u>                              |           |                                    |          |                                    |          |
| Binge eating disorder                                       | 39 (20)   | 6 (15)                             | 0.65     | 3 (8)                              | 0.20     |
| Night eating syndrome (NES)                                 | 26 (13)   | 6 (23)                             | 0.69     | 3 (12)                             | 0.04     |
| Incapacity to respond to satiety                            | 93 (48)   | 16 (17)                            | 0.71     | 3 (3)                              | 0.72     |
| <u>Consultation process (mean, SD)</u>                      |           |                                    |          |                                    |          |
| Proportion of reached goals                                 | 195 (100) | 55% (28)                           | 0.5      | 37% (29)                           | 0.03     |
| Number of consultations attended                            | 195 (100) | 9.06 (3.4)                         | <0.001   | 7.8 (3.7)                          | 0.40     |

## DISCUSSION AND CONCLUSIONS

This retrospective cohort study showed that a dietary approach can be implemented in an outpatient clinic. Half of the patients achieved at least 57% of their goals defined during the consultation. Those who achieved fewer goals were more likely to gain weight. This illustrates the capacity of patients to initiate steps towards healthier eating behavior and lifestyle. When compared to

other studies, the results in terms of weight loss are satisfactory, with 19% of the patients losing at least 5% of their initial weight. Published research on the efficacy of healthy-lifestyle approaches on weight loss shows results similar to ours, with 11 to 38% of the patients losing 5% of initial weight.<sup>26-29</sup> Cognitive behavioral treatment on obesity shows heterogeneous results at end of treatment, from stable weight to 6% of body weight loss.<sup>30-35</sup> In these studies, higher success rates were usually reported with very intensive interventions or in groups excluding patients suffering from depression or eating disorder.

Our study showed a high prevalence of problematic eating behaviors in this patient population. Night eating syndrome and major life events during follow up were significantly associated with the risk of weight gain. The National Weight Control Registry also identified binge eating and depression as increasing the risk of weight regain.<sup>36</sup> This should encourage dietetic professionals to assess carefully eating behaviors, as dieting has been associated with overeating and eating disorders.<sup>4,5,9,10,37,38</sup>

This study has limitations which should be acknowledged. The absence of a control group implies that observed results may not be the sole consequence of our intervention. The intervention itself was not standardized in terms of number of consultations or objectives. The same protocol was followed with all patients, but its practical application was adapted to the possibilities and motivation of each individual, which represents a theoretical limitation. However, our results reflect the "real world" of the daily work of dietitians and its constraints. Our results suggest patients' behaviors have improved but we are not able to demonstrate any direct impact on eating behavior or lifestyle. The retrospective design may have jeopardized the quality of the data, although the standardized measuring and recording of outcomes and other variables limited the risk of information bias.

Nevertheless, because our study was conducted in overweight patients of a general medicine outpatient clinic, regardless of their compliance or presence of eating disorders, we believe that our results truly reflect those of a general, overweight population seeking professional help, including people who suffer from depression or other medical conditions.

The treatment of overweight and obesity remains a challenge for dietitians and other health professionals. Until now, no dietetic based weight loss method has demonstrated its superiority. This dietetic consultation based on the principles of cognitive behavioral treatment and leaving out calculated dietary plans was feasible and had encouraging results in terms of goal reaching and weight evolution. This approach is compatible with standard care reimbursement scheme for dietetic care in many countries (in Switzerland, 12 consultations are covered). However, further studies are necessary to firmly assess the impact of this approach as compared to other dietary care.

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