Role for a sense of self-worth in weight-loss treatments

Helping patients develop self-efficacy

Gordon Cochrane EdD R Psych

ABSTRACT

OBJECTIVE To recommend strategies for enhancing patients' sense of self-worth and self-efficacy in order to give them sufficient faith in themselves to make healthier choices about their weight.

SOURCES OF INFORMATION PubMed, PsycINFO, Google Scholar, and APA Journals Online were searched for original research articles on treatment models and outcome review articles from 1960 to the present. Key search terms were *weight loss, weight-loss treatments, diets and weight loss, psychology and obesity, physiology and obesity,* and *exercise and weight loss.* Most evidence was level I and level II.

MAIN MESSAGE In spite of extensive research, there is widespread belief that the medical system has failed to stem the tide of weight gain in North America. The focus has been on physiologic, behavioural, and cultural explanations for what is seen as a relatively recent phenomenon, while the self-perception of overweight individuals has been largely overlooked. Professional treatments have consisted mainly of cognitive-behavioural therapies and rest on the premise that overweight patients will effectively apply the cognitive-behavioural therapy principles. In the long run, professional and commercial programs are often ineffective. We need treatments that include strategies to repair ego damage, enhance the sense of self-worth, and develop self-efficacy so that overweight patients can become the agents of change in their pursuit of well-being.

CONCLUSION Self-efficacy correlates positively with success in all realms of personal endeavour, and we can help our overweight patients become more self-reliant.

RÉSUMÉ

OBJECTIF Suggérer au patient obèse des stratégies pour l'amener à développer la confiance en soi et en ses capacités afin de faire des choix plus sains concernant son poids.

SOURCE DE L'INFORMATION À l'aide des mots-clés *weight loss treatments*, *diet and weight loss*, *psychology and obesity*, *physiology and obesity* et *exercise and weight loss*, on a cherché dans PubMed, PsyclINFO, Google Scholar et APA Journals Online entre 1960 et aujourd'hui les articles de recherche originaux sur des modèles de traitement ainsi que les articles de revue traitant des issues. La plupart des preuves étaient de niveau I et II.

PRINCIPAL MESSAGE Malgré d'intensives recherches, on considère dans beaucoup de milieux que le système médical n'a pas réussi à endiguer l'épidémie d'obésité en Amérique du Nord. On a mis l'accent surtout sur des explications d'ordre physiologique, comportemental et culturel pour ce qu'on considère comme un phénomène relativement récent alors qu'on a négligé la perception qu'ont d'elles-mêmes les personnes obèses. Les traitements professionnels consistaient surtout en thérapies cognitivo-comportementales et reposaient sur la prémisse que le patient obèse appliquera effectivement les principes de cette thérapie. À long terme, ces programmes professionnels et commerciaux s'avèrent souvent inefficaces. Nous avons besoin de traitements qui incluent des stratégies pour réparer les dommages à l'ego, augmenter la confiance en soi et développer la foi du patient en ses propres capacités afin qu'il devienne l'agent des changements qui assureront son bien-être.

CONCLUSION L'auto-efficacité est en corrélation positive avec le succès dans tous les domaines de l'entreprise humaine, et nous pouvons aider nos patients obèses à compter davantage sur eux-mêmes.

This article has been peer reviewed.
Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2008;54:543-7

North Americans are increasingly overweight[1-3] and the risks of excess weight for numerous health problems have been identified,[4] as has the financial burden on our health system.[5] Weight-loss treatment models ranging from the familiar cognitive behavioural therapy (CBT) model (which consists of recommendations for a healthy diet and regular exercise) to commercial programs, books, and products all share frequently disappointing outcomes,[1-3,6,7] and have remained fundamentally the same for the past 30 years.[6] Research also shows that genetic, metabolic, and hormonal contributions to this relatively recent and culturally specific weight phenomenon are comparatively minimal,[8-11] but overweight people continue to search for external solutions to a problem in which their own decision making often plays a primary role.[8]

In an American Dietetics Association poll in 2000, 40% of the overweight people polled said that they did not want to give up their unhealthy lifestyles in order to be healthy.[12] Most overweight people, however, do want to lose weight. Unfortunately, their search for an external solution makes the dream marketed by commercial weight-loss programs very appealing.[2,7] We can help our willing patients by giving them the tools and support to make the shift from an external to an internal locus of control. As far back as 1960, Feinstein[13] found that personal initiative and a positive relationship with the physician are more important than the treatment model. Though it is not an easy undertaking, family physicians can help receptive overweight patients take appropriate steps to develop the attitudes and commitment to self-care that are evident among people who consistently take care of their physical and emotional well-being.[14-21]

Case description

Ms R., a 43-year-old married woman with sons who are 7 and 9 years old, works full-time as a nurse in a hospital. She is 5 feet 4 inches tall and weighs 212 pounds. She tearfully describes to her family physician the distress and frustration that she feels about her perceived inability to lose weight. She says that she feels defeated and ashamed. Ms R. has tried many diets and diet products over the years and now feels that nothing works. It is evident that she has a persistent desire to lose weight. It is equally evident that she is expressing her version of the must-but-cannot dilemma familiar to millions of overweight people. This dilemma is evident when sincere, intelligent people express an enduring desire to achieve an achievable goal but repeatedly undermine their own efforts to do so. The internal struggle between the patient's desire to be healthy and her lack of faith in herself to do what it takes is reflected in the well-documented pattern of short-term weight loss followed by relapse that is independent of treatment models. The must-but-cannot dilemma is recognized and treated in endeavours such as sports and education, as well as in business and personal relationships,[13,21] but has been overlooked in the weight-reduction realm. Ms R. is an educated woman and might be receptive to an approach that gives her tools to improve her self-efficacy. Diet, discipline, and exercise are 3 pillars of the extensively studied CBT model and are clearly necessary for success, but they are not sufficient by themselves.[6] The fourth pillar is the self-efficacy that patients need in order to consistently apply the diet, discipline, and exercise principles.

Sources of information

PubMed, PsycINFO, and Google Scholar were searched for original weight-loss research articles and treatment reviews. Key search terms were *weight loss, weight-loss treatments, diets and weight loss, psychology and obesity, physiology and obesity,* and *exercise and weight loss.* The *American Psychological Association Journals Online* and the *International Journal of Obesity* were also extensively reviewed. Over the past 20 years, I have built an extensive dossier of level I and level II research on treatment models, the search for genetic causes, and the role played by psychoemotional issues. The 2007 review paper on the role of self in life by Swann et al[14] provides a wealth of research on the value of programs for the enhancement of the sense of self-worth and self-efficacy.

Basic information for patients

Family physicians know that some overweight patients have little or no interest in losing weight and some who want help are reluctant to accept the primary role in their own weight loss. Many, however, are willing to learn how they can take control of their own health and they will value accurate weight-reduction information, tools for personal change, and supportive encouragement from their physicians. A trust-based relationship with the patient gives the family physician an opportunity to respectfully challenge the patient's weight-loss misconceptions and avoidance strategies through information, analogies, and friendly humour.[12,21] Most overweight

Levels of evidence

Level I: At least one properly conducted randomized controlled trial, systematic review, or meta-analysis
Level II: Other comparison trials, non-randomized, cohort, case-control, or epidemiologic studies, and preferably more than one study
Level III: Expert opinion or consensus statements

Dr Cochrane *is a Registered Psychologist in practice in Vancouver, BC. He provides seminars for health professionals on self-worth enhancement that are accredited by the Canadian Psychological Association.*

patients have tried many diets and are therefore reasonably knowledgeable about nutrition, though they do not apply their knowledge with consistency. These patients can be given a 1-page summary of nutrition guidelines from the work by Drs Frank Hu and Walter Willett of the Harvard School of Public Health.[22] They recommend a Mediterranean type of diet that is rich in vegetables, fruits, whole grains, nuts, unsaturated vegetable oils, and protein derived from fish, beans, and chicken, but not red meat. They also recommend that consumption of animal fats be minimal and trans fats be reduced to near zero. This will be sufficient for most as extensive information about diet and nutrition is not a predictor of positive outcome.[2]

Exercise

Whereas these nutrition guidelines are familiar to most patients, the nature and frequency of exercise required for lasting weight loss[2,23,24] will initially be an unacceptable shock to many. Overweight patients often insist that they would like to exercise but do not have time. This is a self-efficacy issue and represents a critical moment in patient care. If the family physician is too forceful about the realities of exercise, the patient might withdraw. If, on the other hand, the physician softens the message, the patient might revert to little or no meaningful exercise.*

Disease model

Overweight patients should be informed of the inaccuracies in media articles that suggest that biological causes are largely to blame for weight gain. This model, the disease model, is described by D.F. Klein of Columbia University and the New York State Psychiatric Institute[8] as a model wherein an individual suffers from an affliction that exempts him or her from personal responsibility. The person cannot help being ill and cannot get well by taking any form of action. This model validates the beliefs of those overweight patients who see themselves as victims of their biology. It might also be helpful to mention that Goel et al[9] found that 8% of immigrants arriving in the United States were overweight and, 15 years later, 38% of them were overweight.

Clinicians and researchers who work from the disease model focus on obesity while minimizing the role of the patients in becoming obese. This perspective restricts the range of research questions and excludes consideration of other potentially mediating variables, such as the decision making of overweight people. For example, Geenland et al[25] studied the lifestyles and heart problems of 400 000 people over a 30-year period and found that unhealthy choices, including excessive food consumption and insufficient physical activity, were evident in 90% of the participants.

Some weight-loss researchers have overlooked the decision makers who overeat unhealthy food, who exercise rarely, insufficiently, and inconsistently,[23,24] and who enmesh their emotions with food.[26-28] When some do lose weight but regain it after 1 or 2 years, biology is often blamed. The research on treatment models has given insufficient attention to the decision makers who must apply the directives from the CBT model.[6]

Cognitive–behavioural model

Most patients have read that diets usually do not work, but they tend to find this message in commercials for new weight-loss products. They should, therefore, be given a brief factual summary of diets, all or most of which are based on the CBT model. This model has dominated the weight-loss literature for decades, even though it repeatedly shows a pattern of moderate short-term success followed by relapse.[6,13,29] In its most basic form, it provides detailed nutrition guidelines along with cognitive and behavioural changes that will bring about weight loss if applied consistently over time. The model is easy to understand, it can be readily taught, it is compatible with the available research, and it lends itself to standardization of treatment. Unfortunately, however, it has not provided meaningful benefit to the vast majority of overweight people.[6,30]

Self-worth and self-efficacy

We are creative, active beings and each of us has our own reality. Our sense of self, which is part of our reality, is a subjective, emotion-laden, ongoing self-evaluation of worthiness, competence, and social acceptability. It functions as the perceptual screen through which we experience life. Our self-evaluations begin in childhood and are solidified over time through our selective "attending" and "meaning" attributions.

Ego damage is harm to one's sense of self-worth, and many overweight patients come from ego-damaging families[28,33-35] in which they developed a sense of inadequacy. Many learned to put the needs of others ahead of their own, leaving little time to attend to their own health. Their subsequent weight gain is then perceived as confirmation of their inadequacy.[28]

Self-efficacy arises from a sense of self-worth. It is the faith in self that gives rise to personal initiative, persistence, self-confidence, and optimism.[14,20,36,37] Positive changes in thinking and behaviour are fundamental to all psychotherapy treatments, but a sense of self-worth, which is a perceived and felt sense of self, cannot be meaningfully altered with CBT alone. When people perceive themselves as attractive or unattractive, intelligent or unintelligent, or adequate or inadequate, they live accordingly.[14-17,36-39] Perception of self is experienced as reality and a negative self-perception robs many

CFPlus GO

*Additional material on helping your patients enhance their self-worth is available at **www.cfp.ca**. Go to the full text of this article online, then click on **CFPlus** in the menu at the top right-hand side of the page.

overweight patients of the faith in self to do what it takes to be healthy.

Enhancement of self

In their recent review paper, Swann and colleagues[14] confirm that self-perceptions do influence our decision making, our resolve, and our actions. They therefore recommend the development of programs to improve these self-perceptions. Family physicians can teach willing patients, such as Ms R., how to identify and therapeutically respond to their problematic perceptions of self.[26,36,37]

Step 1. Reframe the task from weight loss to self-care. People with a healthy sense of self-worth consistently and conscientiously take care of their own health. Making this crucial change of perspective will generate resistance in some patients, but will be recognized as an empowering perspective by others.

Step 2. Teach patients how to self-monitor so they can identify the specifics of their emotional relationship with food.[26-28,33,37,39,40-42] They can be shown how to use simple imagery activities[28,36,42] in which they close their eyes, relax, picture their health goal, and, using a simple device such as an imagined photo album containing photos of the most influential experiences of their lives, allow into awareness the circumstances and situations in which they learned to devalue themselves.[14,19,26-28,36] Present-day anticipations of similar criticisms and rejections have been shown[26-28] to generate the ego-threatening anxiety that results in overeating for many overweight people. This strategy for enhanced self-awareness supplements the cognitive tools. However, self-awareness is necessary but not sufficient for personal change.

Step 3. Develop appropriate therapeutic responses to the negative self-perceptions formulated by the younger and less experienced person the patient was when the ego damage took place. Patients should be encouraged to view themselves now as the compassionate, wiser, and supportive providers of therapeutic guidance for the very different people they were when their sense of self was damaged. This is the committed relationship with self that constitutes the cornerstone of self-worth enhancement.[14,36,42]

Step 4. Building upon the patient's growing sense of worthiness and faith in self, provide information about the attitudes and behaviour common to people who are physically and emotionally fit.[14,18-20,28,39,42] They are self-motivated and do not rely on what others do or do not do, whereas many overweight people accept the weight norms of their overweight friends and family.[43] This information will help overweight patients understand and accept what it takes to maintain good health.

Most patients like Ms R. can do this therapeutic work at home if they supplement it with regular visits to their family physicians. The pace of change will vary with the nature of the ego damage experienced by each patient. Some patients will decline this opportunity, but many will welcome it. Those with more severe psychological damage[32] might, if it seems necessary, be referred to a psychologist or psychiatrist. Repairing ego damage, dealing with ongoing emotions, and building a sense of self-worth are challenging tasks but, when they lie at the heart of a patient's weight problem, treatment models that do not include them will be ineffective.[1-3,5,13,14,30]

Areas of controversy

There are 3 primary areas of controversy in the weight-loss realm. The first can be illustrated by a quote by Will Rogers: "Often it's not what we don't know that causes problems, it's what we know that isn't so." When we view the culturally specific and relatively recent pattern of weight gain among North Americans as a disease, we research it as a disease and we treat it as a disease. This approach has not been effective. When we view it as a predictable result of the self-perception, attitudes, decision making, and behaviour of the decision makers, we can focus on programs for the enhancement of their self-worth and self-efficacy so our patients make healthier decisions.

The second area of controversy has focused on the uncertain value and practicality of self-worth enhancement. After thoroughly reviewing this controversy in their recent paper, Swann et al[14] endorse self-worth enhancement for improved functioning in a range of personal endeavours.

The third area of controversy is the concern that patients will not participate in programs for self-worth enhancement. This is an unfamiliar approach to weight loss and some will not participate. Many others will not at first, but most smokers were also initially reluctant to exchange their addiction for their health, yet many have done so.

Case conclusion

Ms R. accepted, with some initial reluctance, personal responsibility for the care of her own health. Over time she adopted a Mediterranean style of eating, weighed herself regularly,[44] joined a fitness centre, hired a trainer for 6 sessions, and committed to working out a minimum of 4 times per week. She scheduled appointments with her family physician every other week where she received support, guidance, and clarification of her imagery-facilitated work on self-worth enhancement. After 2 years of dedicated effort, including setbacks and frustrations, Ms R. brought her weight down to 148 pounds, while greatly improving her fitness level. When asked how she accomplished this, she said that she learned to think of herself as a competitive swimmer with a good coach and a clear understanding that it was her body in the water doing the swimming.

Conclusion

Weight reduction is a daunting endeavour for our overweight patients but it is achievable for those who will accept support, guidance, and tools for self-worth enhancement from their family physicians. A patient with an internal locus of control is more likely to be proactive about his or her health than a patient who seeks an external solution.

Acknowledgment

I thank **Jackie Loucks** *for her valuable insights into the role of self-efficacy and motivation in the management of obesity.*

Competing interests

Gordon Cochrane *is the author of the book* The Self-Worth Odyssey (**www.self-worthodyssey.com**) *and conducts seminars on self-worth enhancement accredited by the Canadian Psychological Association.*

Correspondence to: **Dr Cochrane**, *400—1681 Chestnut St, Vancouver, BC V6J 4M6; telephone 604 263-3312; e-mail* **gordon_cochrane@telus.net**

EDITOR'S KEY POINTS

- Although a study by the American Dietetics Association in 2000 showed that 40% of those polled who were overweight were unwilling to give up their unhealthy lifestyles to be healthy, most overweight persons want to lose weight.
- While there are many diet, exercise, psychotherapy, and medication options available, interest is turning to the role of self-efficacy in weight-loss management.
- This paper reviews the literature on self-efficacy in obesity and offers practical suggestions for family physicians on how to work with patients on the development of self-efficacy.

POINTS DE REPÈRE DU RÉDACTEUR

- En 2000, une étude de l'American Dietetics Association révélait que 40% des sujets obèses interrogés ne voulaient pas adopter un mode de vie plus favorable à la santé et pourtant, la plupart des obèses désirent maigrir.
- Alors qu'il existe plusieurs choix de régimes, exercices, psychothérapies et médicaments disponibles, on se tourne maintenant vers le rôle de l'auto-efficacité pour la prise en charge de la perte de poids.
- Cet article est une revue des publications sur le rôle de l'auto-efficacité dans l'obésité; il suggère des façons pratiques d'aider le patient à développer l'auto-efficacité.

References

1. Flegal K, Carroll M, Kuezmarski R, Johnson C. Overweight and obesity in the United States: prevalence and trends, 1960-1994. *Int J Obes* 1998;22:39-47.
2. Pittler MH, Ernst E. Complementary therapies for reducing body weight: a systematic review. *Int J Obes* 2005;29(9):1011-29.
3. Moore BA, Bowers A. Weight loss. In: Fisher JE, O'Donohue WT, editors. *Practitioner's guide to evidence-based psychotherapy.* New York, NY: Springer; 2006. p. 734-43.
4. Peeters A, Barendregt JJ, Willekins F, Mackenbach JP, Mamun AA, Bonneux L. Obesity in adulthood and its consequences for life expectancy: a life-table analysis. *Ann Intern Med* 2003;138:24-32.
5. Birmingham CL, Muller JL, Palepu A, Spinelli JJ, Anis AH. The cost of obesity in Canada. *CMAJ* 1999;160(4):483-8.
6. Wilson GT. Behavioral treatment of obesity: thirty years and counting. *Adv Behav Res Ther* 1994;16(1):31-75.
7. Wadden TA, Tsai AG. Systematic review: an evaluation of major commercial weight loss programs in the United States. *Ann Intern Med* 2005;142:56-66.
8. Klein DF. Harmful dysfunction, disorder, disease, illness, and evolution. *J Abnorm Psychol* 1999;108(3):421-9.
9. Goel MS, McCarthy EP, Phillips RS, Wee CC. Obesity among US immigrant subgroups by duration of residence. *JAMA* 2004;292:2860-7.
10. Davies KM, Heany RP, Recker RR, Barger-Lux MJ, Lappe JM. Hormones, weight change and menopause. *Int J Obes* 2001;25:874-9.
11. Corica F, Corsonello A, Luchetti M, Malara A, DeDomenico D, Cannavo L, et al. Relationship between metabolic syndrome and platelet responsiveness to lepitin in overweight and obese patients. *Int J Obes* 2007;31:842-9.
12. American Dietetic Association Public Relations Team. Nutrition and you: trends 2000. What do Americans think, need, expect? *J Am Diet Assoc* 2000;100:626-7.
13. Feinstein AR. The treatment of obesity: an analysis of methods, results, and factors which influence success. *J Chronic Dis* 1960;11:349-93.
14. Swann WB Jr, Chang-Schneider C, Larson McClarty K. Do people's self-views matter? Self-concept and self-esteem in everyday life. *Am Psychol* 2007;62(2):84-94.
15. Smith LM, Fouad NA. Subject-matter specificity of self-efficacy, outcome expectancies, interests and goals: implications for the social-cognitive model. *J Consult Clin Psychol* 1999;46(4):461-71.
16. Bennet P, Moore L, Smith A, Murphy S, Smith C. Health locus of control and value for health as predictors of dietary behaviour. *Psychol Health* 1994;10(1):41-54.
17. Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *Am Psychol* 2000;55(1):68-78.
18. Stajkovic AD, Luthans F. Self-efficacy and work related performance: a meta-analysis. *Psychol Bull* 1998;124(2):240-61.
19. DuBois DL, Flay BR. The healthy pursuit of self-esteem: comment on alternative to Crocker and Park (2004). *Psychol Bull* 2004;130(3):415-20.
20. Bandura A. Human agency in cognitive theory. *Am Psychol* 1989;44(9):1175-84.
21. Martin DJ, Garske JP, Davis MK. Relation of therapeutic alliance with outcome and other variables. *J Consult Clin Psychol* 2000;68(3):438-50.
22. Hu FB, Willett WC. Optimal diets for prevention of coronary heart disease. *JAMA* 2002;288:2569-78.
23. Jeffery RW, Wing RR, Thorson C, Burton LR. Use of personal trainers and financial incentives to increase exercise in a behavioural weight-loss program. *J Consult Clin Psychol* 1998;66(5):777-83.
24. Wadden TA, Vogt RA, Foster GD, Anderson DA. Exercise and the maintenance of weight-loss: a one-year follow-up. *J Consult Clin Psychol* 1998;66(2):429-33.
25. Greenland P, Knoll MD, Stamler J, Neaton JD, Dyer AR, Garside DB, et al. Major risk factors as antecedents of fatal and non fatal coronary heart disease events. *JAMA* 2003;290:898-904.
26. Polivy J, Herman CP, McFarlane T. Effects of anxiety on eating: does palatability moderate distress-induced overeating in dieters? *J Abnorm Psychol* 1994;103(3):505-10.
27. Heatherton TF, Baumiester RF. Binge-eating as an escape from self-awareness. *Psychol Bull* 1991;110(10):86-106.
28. Cochrane GJ, Friesen J. Hypnotherapy in weight loss treatment. *J Consult Clin Psychol* 1986;54(4):489-92.
29. Wing RR, Jeffery RW. Outpatient treatments of obesity: a comparison of methodology and clinical results. *Int J Obes* 1979;3:261-79.
30. Harvey EL, Glenny AM, Kirk SFL, Summerbelt CD. A systematic review of interventions to improve health professionals' management of obesity. *Int J Obes* 1999;23(12):1213-22.
31. Matz PE, Foster GD, Faith MS, Wadden TA. Correlates of body image dissatisfaction among overweight women seeking weight loss. *J Consult Clin Psychol* 2002;70(4):1040-4.
32. Pike KM, Rodin J. Mothers daughters and disordered eating. *J Abnorm Psychol* 1991;100(2):198-204.
33. Johnson JG, Cohen P, Brook JS, Kotler L, Kasen S. Psychiatric disorders associated with risk for the development of eating disorders during adolescence and early adulthood. *J Consul Clin Psychol* 2002;70(5):1119-28.
34. Parsons TJ, Power C, Logan S, Summerbell CD. Childhood predictors of adult obesity: a systematic review. *Int J Obes* 1999;23(Supp 8):S1-35.
35. Dominy NL, Johnson WB, Koch C. Perception of parental acceptance in women with binge eating disorder. *J Psychol* 2000;134(1):23-36.
36. Cochrane GJ. *The self-worth odyssey.* Vancouver, BC: Devon Productions; 2006.
37. Baumeister RF, Scher SJ. Self-defeating behaviour patterns among normal individuals: a review and analysis of common self-destructive tendencies. *Psychol Bull* 1988;104(1):3-22.
38. Taylor SE, Kemeny ME, Reed GM, Bower JE, Greunewald TL. Psychological resources, positive illusions and health. *Am Psychol* 2000;55(1):99-109.
39. Salovey P, Rothman AJ, Detweiler JB, Steward WT. Emotional states and physical health. *Am Psychol* 2000;55(1):110-9.
40. Greeno CG, Wing RR, Shiffman S. Binge antecedents in obese women with and without binge eating disorder. *J Consul Clin Psychol* 2000;68(1):95-102.
41. Carels RA, Douglas OM, Cacciapaglia HM, O'Brien WH. An ecological momentary assessment of relapse crisis in dieting. *J Consult Clin Psychol* 2004;72(2):341-8.
42. Cochrane GJ. *Self-worth enhancement in psychotherapy: a role for creative imagery.* CPA-accredited continuing education program for psychologists; 2007.
43. Christakis NA, Fowler JH. The spread of obesity in a large social network over 32 years. *N Engl J Med* 2007;357:370-9.
44. Wing RR, Tate DF, Gorin AA, Raynor HA, Fava JL, Machan J. Stop regain: are there negative effects of daily weighing. *J Consult Clin Psychol* 2007;75:652-6.