

Using goal setting as a strategy for dietary behavior change

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ABSTRACT

Recent reviews have noted that behavioral theory-based nutrition education programs are more successful at achieving food behavior change than knowledge-based programs and that a clear understanding of the mechanisms of behavior change procedures enable dietetics professionals to more effectively promote change. Successful dietary behavior change programs target 1 or more of the personal, behavioral, or environmental factors that influence the behavior of interest and apply theory-based strategies to influence or change those factors. Goal setting is a strategy that is frequently used to help people change. A 4-step goal-setting process has been identified: recognizing a need for change; establishing a goal; adopting a goal-directed activity and self-monitoring it; and self-rewarding goal attainment. The applications of goal setting in dietary interventions for adults and children are reviewed here. Because interventions using goal setting appear to promote dietary change, dietitians should consider incorporating the goal-setting strategies to enhance the behavior change process in nutrition education programs. *J Am Diet Assoc.* 2001;101:562-566.

Recent data suggest that children and adults are overconsuming energy from fat (1,2) and underconsuming fruit, 100% juice, and vegetables (3-5). These dietary practices are risk factors for the development of the chronic diseases that account for more than two-thirds of all deaths in the United States (1,2). It is the primary responsibility of many dietetics professionals to help clients change their dietary behavior to reduce chronic disease risk. For that reason, it is important for dietetics professionals to be familiar with effective strategies for promoting change and how they work.

Behavioral theory-based nutrition education programs have been more successful at achieving dietary behavior change than knowledge-based programs (8-9). Successful programs target 1 or more of the personal, behavioral, or environmental factors that influence the particular behavior of interest (10-12). Little research has examined the use of the goal-setting strategy in dietary behavior change, although goal setting has been shown to be important to one's ability to control one's own behavior (13), and is therefore frequently used to help people change their behavior in other health-related settings (14). This article reviews the goal-setting process and procedures, and their use in dietary interventions for adults and children.

GOAL SETTING

According to task-performance researchers (15), a goal is the object or aim of an action. Most of the research literature on

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goal setting and task performance has been conducted among adults in organizational (16) and sports settings (17), although it has been found to be effective in enhancing behavior change, and we believe it has potential for use in dietary intervention programs. The 4 steps of successful goal-setting among adults include recognizing a need for change, establishing a goal for change, monitoring progress toward achieving that goal, and rewarding oneself for goal attainment (18). (see the Figure.)

Step 1: Recognizing Need for Change

The process of establishing goals can be initiated from external or internal sources (19-20). For example, an emotional event (21) or affective experience (22) may elicit a cognitive appraisal that begins Step 1. Stronger intentions to change diet and stronger negative emotional reactions were found in subjects who were told that their diets were high in fat compared with those who were told that their diets were low or medium in fat (23). It is interesting to note that goals imposed by others, self-selected goals, goals set participatively, and goals assigned with a rationale (ie, why goal is desirable and/or achievable) appear to be equally motivating in organizational and sport areas (24).

Step 2: Establishing A Goal

Goal content can vary in difficulty and specificity. In occupational and sport settings, goals that were both specific and difficult led to better performance compared with vague goals or "do your best" goals, given sufficient ability and commitment (25). Thus, procedures to enhance Step 2 in the goal-setting process included setting more specific (or quantitative) and challenging, but achievable, goals.

Step 3: Monitor Goal-related Activity

Having goals directs attention and activity toward actions that are relevant to goal accomplishment (15), including the mobilization of the person's resources (personal and social). Persons adjust their effort to match the difficulty of the goal. In several studies, when previous mechanisms did not work, persons searched for new strategies or action plans for achieving the goal. This often required skill development or using problem-solving techniques (15, 26, 27). Planning was particularly important for complex tasks, and feedback, such as that obtained through self-monitoring, was a crucial component because it provided information on goal attainment (15). Adjustments in strategies or effort over time were made based on the feedback, which also enhanced self-efficacy.

Step 4: Self-reward For Goal Attainment

Rewards may increase program participation and motivate persons to initiate further goal setting (15). External rewards or self-evaluative rewards (eg, internal reactions) are 2 types of rewards (15, 19). External rewards reduce goal commitment if the motivation is externalized (19), while learning emphasizing internal rewards results in more sustained performance (17). Keeping daily records and receiving verbal feedback are likely to enhance Steps 3 and 4. If the goal is not attained, the person reverts to Step 1 for reanalysis of the situation, and a new or revised goal or new strategy for attainment may be formulated.

GOAL SETTING IN DIETARY INTERVENTIONS

Medline, PSYCHINFO, and CINAHL online database literature searches were conducted through spring 2000. Key words

were "nutrition," "diet interventions," and "goal setting". The resulting studies were reviewed to determine the extent to which goal-setting components were identified and related to outcome. None of the studies had evaluation of the goal-setting component as a study objective.

Adult Interventions

Thirteen studies that reported the use of goal-setting in adult nutrition education programs were identified. Three were general reports providing no details (28-30). Ten studies provided information about the goal-setting components and are presented here by the number of goal-setting processes included.

Only 1 intervention (31) included the 4 goal-setting process steps. While the goal-setting instruction of 1 condition was comprehensive in that study, the number of sessions possibly confounded the goal-setting procedure. Also in that study, the group that had enhanced attention to goal setting showed more success compared with the control group, but not against a single goal setting group. This provides only weak support for the effectiveness of goal-setting procedures.

Six of the interventions we reviewed included Steps 2 and 3. The results of these 6 interventions suggest that addressing Steps 2 and 3 of goal setting (having immediate short-term goals, performing strategic analysis, obtaining feedback, and maintaining self-monitoring) enhanced outcomes. For example, 3 goal-setting groups in a study (32) lost significantly more weight than a no-goal group; but weight losses were not different across the 3 goal groups. Also, fewer participants in the more difficult, high goal group (reduce intake by 1,000kcal/day) met their goal than those in the reduce intake by 500 kcal/day group, with those in the reduce intake by 750 kcal/day group in between. A maximal and an extended treatment group of a study (33), both involving goal setting, reported greater weight loss; reduction in blood pressure, serum cholesterol, and triglycerides; and increased aerobic capacity compared with a control group. Participants agreed that goal setting and self-monitoring were important for their success. A single-session intervention (34) involving goal setting significantly increased intake of cereal foods and reduced intake of indulgence foods compared with control condition participants in a different study. Further, in a process evaluation of a clinic intervention (35) without a control group, 90% and 96% of participants reported achieving their goals at 1 and 2 weeks, respectively. After three months, intervention condition patients in another study (36) reported lower total fat and energy consumption and lower serum cholesterol levels than control patients receiving usual care. Intervention participants (37) who set 6 weekly goals rated the goal-setting activities as very helpful and reported greater reductions in dietary fat intake and greater self-efficacy compared with participants receiving a general nutrition curriculum. Finally, all participants in one study (38) who reported setting a goal reported higher fruit, 100% juice, and vegetable intakes compared with those who did not set a goal. Although a more difficult goal (eat 5 fruits, 100% juices, and vegetables per day) was assigned to 1 group in that study, the goal-setting group received smaller subgoals to help them achieve the 5 A Day goal.

There was substantial variability across studies in what and how goal-setting procedures were employed. Little detail was provided on how the goals were chosen (although most goals appear to have been self-selected). None of the studies we reviewed delineated what goal-setting processes were used by

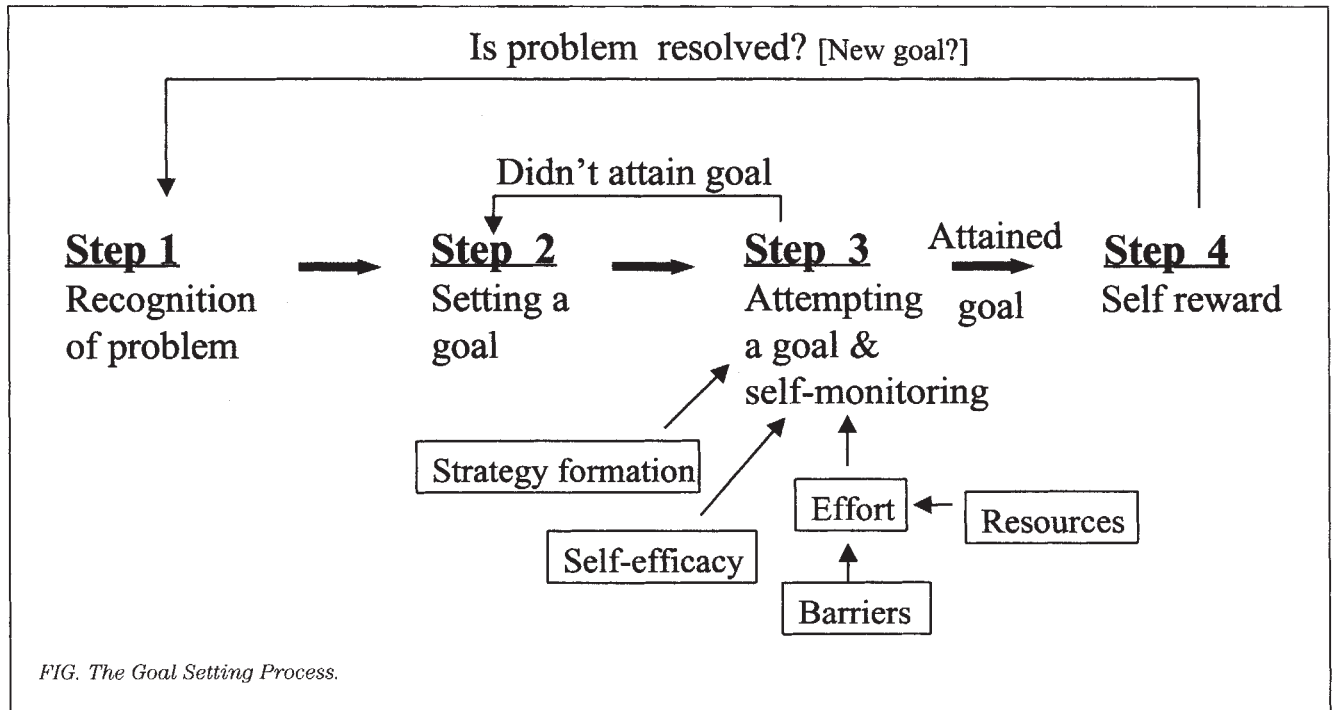


FIG. The Goal Setting Process.

the participants. Only 1 study (32) evaluated the relationship of goal difficulty to outcome, but these were not self-selected goals. In that study, no differences in weight loss for participants on the 3 levels of energy goals was inconsistent with findings in the literature on organizations, which shows most change with the most stringent goals (25). This suggests that there may be motivational differences between occupational and dietary goal-setting procedures and, thus, the findings in 1 behavioral domain (eg, business) may not easily generalize to others (eg, dietary change).

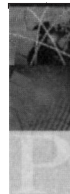
Three interventions provided information only about Step 2 and results were mixed. In a study of older adults (39), intervention group participants who set 1 reasonable and attainable goal reported significant reductions in fat intake, and increases in fiber and physical activity compared with controls. In the second study, significant reductions in sodium intake were found for 2 conditions, 1 including goal setting and 1 not, but no differences were found between the 2 groups. Whereas 83% of participants in the goal-setting group reported meeting their weekly goals, goal setting did not appear to contribute to their success. In the third study (40), pregnant women who set a reasonable goal based on their needs improved their nutrient intake, but this had no effect on their babies' birth weight. Thus, it appears that limiting attention to only Step 2 produces less favorable outcomes.

Child Interventions

A substantial number of studies reported the use of goal-setting strategies for dietary behavior change with children (5,41-52). Only 3 of these studies, however, provided details about the goal-setting component and none analyzed the goal-setting process. In a study of adolescents (53), intervention students who received a 3-step goal-setting program improved their nutrient intakes, and rated keeping food records, evaluating personal intake, implementing solutions, and attending

follow-up classes as the most helpful activities. In another study (54), significant intervention effects were found for exercise and diet through the use of a comprehensive approach to goal-setting education that included setting specific, proximal change goals, monitoring progress, solving problems, and self-rewarding successes. Students completing a 3-step goal-setting program (54) attained significant improvement in number of servings from all 4 targeted food groups in another study.

It is worth noting that goal setting was considered an integral component of all 3 of these studies. Although the students self-selected their goals and the reported interventions were successful, none of the studies systematically varied components of the intervention with and without goal setting, and so the contribution of goal-setting processes to the successes is not known. Also, the procedures for promoting goal setting varied across studies. Thus, goal-setting appears to be a useful dietary change strategy for students, but little can be said about optimal methods or about the relationship of processes to outcomes.



APPLICATIONS

■ Research on goal setting for dietary change among adults suggests that goal-setting procedures are likely to lead to change. However, the studies we reviewed did not vary goal-setting components, did not provide detail from process evalu-

ation, and employed different steps in goal setting. Therefore, little can be clearly inferred about optimal processes for dietary behavior change among adults. Furthermore, in contrast to the research in occupational settings for nonfood behaviors, setting more difficult weight loss goals did not result in greater success.

■ The studies with children that we reviewed offer promise that goal-setting procedures promote dietary change, but none described the processes used, varied components of the goal setting process, or identified age/developmental/ethnic differences.

■ Practitioners working with adults or children should very carefully explore the various goal-setting procedures with clients to assess existing competencies and provide pertinent instruction and guided practice on components that appear to promote dietary behavior change. Because little is known about optimal goal-setting procedures for dietary change among adults or children, the goal-setting processes of and effective procedures with persons of diverse ethnic backgrounds and ages should be the subject of further research.

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PRACTICE POINTS

Goal setting: The power to change

The lifestyle of an individual is taken into consideration when a patient and a dietitian create a diet with specific goals and strategies. According to the authors' four-strategy model for effective dietary change in the previous article, "Using goal setting as a strategy for dietary change," a client and a dietitian would not develop a diet, or goals to sustain that diet, until the second step of the process, which is establishing a goal.

Establishing an appropriate goal, the one most suited to the individual's lifestyle, is the best way to ensure positive results, says Tanya Horacek, RD, PhD, assistant professor and director of a dietetics program at Syracuse University and member of several ADA dietetic practice groups. "It's one thing to talk about changing dietary behavior, quite another to deal with it on a personal level in the hospital or the clinic," she emphasizes.

Self-efficacy, the power to produce change within one's self, is important when dealing with dietary change in relation to goal-setting. According to Horacek, "It's perception versus reality. Sometimes we see one thing, how we view ourselves, for instance, and yet do something else. We deviate somehow from our goals and our diet." The dietitian, she believes, can assist the patient in setting informed and realistic goals, as well as help guide them along the way.

The most important thing about the first strategy, identifying a problem, Horacek points out, is the motivation and ambition behind the patient. In order to achieve success there has to be a definite will to change.

Horacek, in her experience as a dietitian, sees this personal struggle as potentially problematic, to the extent that it can interfere with achieving dietary change within the framework of established goals. She stresses the importance of finding the right goals for the individual. She emphasizes the importance of good constructive feedback by the dietitian. And finally, she finds it beneficial to focus on specific behavioral goals, rather than the outcomes.

Dietary behavior is intricately linked, Horacek contends, with values, lifestyle, and culture. Diets are a reflection of lifestyles at work and at home. For every change in the diet, she says, there is likewise a change in lifestyle.

In conclusion, Horacek agrees with the authors of the article, and says that we need more research and literature on the subject of goal setting, especially with regards to dietary behavior change. Many dietitians do not use goal setting effectively, because all of the nuances involved with goal setting—concentrating on lifestyle and values, and focusing on the goals rather than on the outcome at large, are not always taken into consideration. All of the literature available in life coaching, she says, could also be helpful. Life coaching, mentoring, and self-monitoring are crucial to the advancement of goal setting as a method for dietary change.

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