The Application of Behavior Modification to Behavior Management: Guidelines for the Family Physician

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Treatment in ambulatory care settings depends on the patient's behavior to implement the regimen prescribed by the family physician. Behavior modification offers a means for developing behavioral programs that will improve the physician's ability to effectively influence the patient's behavior. This article outlines some of the principles of behavior modification as they can be applied in office settings to diverse behavioral problems. Some specific suggestions are made for identifying behaviors, setting goals, delineating the steps to reach these goals, monitoring progress, and developing treatment contracts that will aid the physician in the management of the behavioral aspects of treatment.

"I have a patient with hypertension. It's not serious, but at his age it should be regulated. Every time he comes in for a checkup, it's back up again. I ask him if he is taking the medication and he says most of the time but that sometimes he forgets. I've told him that he should be consistent with the medicine if the blood pressure is to be controlled, but he just won't be regular in the use of the medicine. You're the expert—what do I do now?"

"I saw the daughter of one of my patients the other day and was surprised to see that she was about 50 pounds overweight. She's only 24 years old and is developing mild diabetes. She says she wants to lose weight but she wants me to prescribe some drugs to help her. I don't think that anything besides diet is necessary but at this point I feel up against the wall. You're the expert—what do I do now?"

"I have seen a woman about six times in the last three months. The symptoms are always vague and I can't ever find anything wrong organically. She isn't suicidal and her home life seems OK. I don't want to label her a 'crock' or anything like that, because I guess she is truly uncomfortable and I do like the lady. But I can't find anything wrong organically. You're the expert—where do I go from here?"

The situations and requests described above are commonplace when working with family physicians and family practice residents. There are no pat answers, but in all three cases, there is a common denominator to the request—How can I influence the behavior of my patients to improve the effectiveness of my treatment? In all three situations, and in others too numerous to list, the application of behavior modification techniques can improve the effectiveness of treatment. The purpose of this paper is to outline some of the principles of behavior modification and to show how their application can be used to improve patient care.

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Table 1. Steps in Application of Behavior Modification

1. Define the behavior and obtain a baseline record of it.
2. Set long-range goals, the rewards for reaching the goals, and a deadline.
3. List the steps leading to the goals and short-term rewards for compliance.
4. Share the responsibility for monitoring, recording, and reinforcing the behavior.
5. Write the program into a contract.

Behavior Modification in Office Practice

In ambulatory care settings, the physician often is dependent on the behavior of the patient to effect successful treatment. The patient must do those actions which ensure improvement in health status. These patient actions and/or behaviors range from taking the prescribed medicine, to eating less, to "taking it easy." In all instances the physician's task, in part, is to persuade the patient to do the right thing.

Behavior modification is a method for influencing behavior. Unlike other kinds of behavior influence, behavior modification is based on scientifically validated principles for effecting changes in behavior.[1] The overall goal of behavior modification is to alter the expression of an identifiable behavior. This is accomplished by involving the patient in the development of a program which will lead to definable and desirable behavioral outcomes. Behavior programming is designed to improve the accuracy and comprehensiveness of the plan of treatment by requiring that the *behavior* to be achieved is specified clearly and the steps to achieve the desired behavior spelled out. Necessarily the patient becomes an active participant in the treatment process since it is the patient who must implement the plan. The task of the clinician is to aid the patient in the development of a program of activities within the patient's capabilities which leads to the desired outcome—a change in the patient's behavior.

Behavior modification procedures have application to changing different types of behaviors, eg, excessive consumptions of food,[2] alcohol,[3] and tobacco smoke.[4] In addition to these common problems the method can be applied to situations in which other specific behaviors or symptoms can be identified, eg, hair-pulling,[5] tics,[6] headaches,[7] back pains,[8] and asthma.[9] The steps outlined within this paper can also be applied to the treatment of diverse behavioral problems, ranging from the development of new living skills to the management of interpersonal behaviors of adults and children.[10] Techniques will be described for changing behaviors that are clearly observable. Other methods are available which focus more on the treatment of thoughts and fantasy.[11] The limiting factors in application are the ingenuity of the clinician and the type of practice.

Behavior modification procedures are easily adaptable to office practice and thus offer a valuable tool to supplement the family physician's therapeutic armamentarium. Unlike more traditional forms of psychotherapeutic intervention, behavior modification procedures are adaptable to the 10 or 15-minute office visit. Five steps in the development of a behavior modification program are outlined in Table 1. In order for these procedures to work, it is essential that the physician have a good working relationship with the patient. Mutual trust and a genuine concern for the patient's well-being are critical aspects of this relationship. A good physician-patient relationship considerably enhances successful use of behavior modification programs.

Techniques of Behavior Modification

Step 1–Define the behavior and obtain a baseline record of it

The most complex behaviors can be broken down into smaller actions that make up a total behavior complex. For example, it is possible to talk about eating or pill-taking as a behavior, but these behaviors consist of a number of different actions. For well-learned behaviors the actions can be habits. As such they are related to specific stimuli such as time and place, speed, frequency, and social consequences of the act, etc. *Much of behavior is made up of a complex of habits, each of which is supported or reinforced by its antecedents and consequences.* This is a fundamental principle of behavior modification. In the identification of behavior to be modified, it is essential that the clinician look at behavior from this view point. He/she must break down the elements of the behavior into the habits that represent the com-

plex. This includes an analysis of the antecedents and the consequences of the habits. In addition to satisfying biological needs, many habits satisfy social and emotional needs. Eating is frequently a social behavior. For some people it satisfies emotional needs and is used as self-treatment for depression or anxiety. These satisfactions represent antecedents and consequences to the behavior and in this sense they serve as supports for the habit.

To establish a baseline for the behavior to be changed, the clinician must: (a) specify the nature of the behavior as precisely as possible; (b) direct the patient to keep a written record of the behavior which includes the identification of the antecedents and consequences (when the behavior occurs, its frequency, its variations in intensity, the things that happen before, the things that happen after, others present and their reactions). A baseline entry for cigarette smoking, for example, might read: 8:30 AM, first cigarette, morning coffee, satisfying; wife present, no comment. The patient is instructed to keep this information in the form of a diary. Each occurrence of the particular behavior during the day is recorded. The baseline record educates the patient by providing a mechanism for gaining insight into the nature of the habits that need to be changed. Frequently the patient will return with the diary and a more detailed understanding of the phenomena than he had before he began his own data collection.[12]

For the clinician the baseline provides planning information. The nature of the patient's diary permits an examination of the habits that make up the behavior complex. Future interventions can be designed to alter the habits. For example, if a patient's eating pattern indicates that there is a lot of eating in the middle of the afternoon or while watching television, it may be possible to substitute something else for eating which will satisfy the same needs in other ways, eg, push-ups, gum chewing, crossword puzzles, or some activity that the patient indicates will serve as a substitute behavior. In the development of a program to alter behavior, the clinician should suggest substitute behaviors. However, it is *more* important to stimulate the patient's own imagination to find alternative ways of satisfying the needs which were uncovered by review of the baseline records because this makes the patient a more active participant in the therapeutic process.

Often the patient agrees to start the diary but returns with incomplete information. This is to be expected. It does not necessarily mean that the patient is not willing to gather the necessary data or that he/she is a "loser." It does mean that there is a need for renewed enthusiasm to make the program work. As in all diagnostic work-ups, the available data are the starting place for analyzing the cause of disease. Similarly, a detailed analysis of the habit is a means of showing the patient the utility of the approach.

The procedures for gathering baseline information are also important in understanding psychosomatic symptoms.[13] When there are no clinical indications of organic disorders and the laboratory tests are also normal, the physician can get a better understanding of the problem by having the patient gather information in depth, including antecedents and consequences, each time the symptom appears. Functional disorders are real, as are the secondary social gains which accompany their appearance. The baseline recording procedure will provide further data for an analysis of the symptoms in more detail.

The baseline methodology can also be used in the development of a new habit. For example, when a patient cannot take antihypertensive medication regularly or perform the prescribed exercises for low back pain consistently, the baseline procedure can be used in reverse to develop a new habit. The patient can be asked to return with a written record of the time, frequency, amount, intensity, presence of others, etc, surrounding the accomplishment of the prescribed behavior. Such records can help the patient establish a habit by providing a focus on the antecedents and consequences of the new habit which will in turn build the supports necessary to sustain the habit.

Recording behavior will change the behavior slightly, usually in the direction of the desired change.[14] This principle of behavior change can be used as the means of beginning the processes of behavioral treatment.

Step 2–Set long-range goals, the rewards for reaching the goals, and a deadline

Goal planning for behavior change is an essential part of behavior modification. Only when the desired behavior has been clearly identified by the patient and the physician is it possible to begin work toward its attainment. For most physicians

the goal of treatment is the restoration of health. In behavioral treatments the conditions of health are often difficult to specify. Therefore, it is important that the patients begin to define for themselves what their behavioral goals are. Smoking less, weighing less, absence of symptoms such as headaches, or a better relationship with spouse, are rather broad examples of such goals or outcomes. Usually the patient can identify some long-range outcome whose attainment represents a better quality of life.

The role of the physician in goal setting is twofold: (1) to assist and direct the patient in the determination of reasonable and attainable goals, and (2) to make sure that there is a behavioral test that indicates when the goal has been reached. In the first of these tasks, direction can be simply and efficiently managed by asking the patient to list the things he would like to accomplish within the next year. When the patient returns, these goals can be put into behavioral terms. "How will we know that the goals have been reached? What will you be doing that shows you have reached this goal?" In regulating a habit like smoking or eating, the goals may be to reduce the amount consumed, or eliminate all but five cigarettes a day. The amount, frequency, rates of the behavior, etc, can be changed, but they must be specified in detail by the patient and the physician. The physician becomes a part of the patient's self-treatment by giving the direction that is necessary to move the patient onto something constructive.

In addition to developing and defining goals with the patient, there is a need to develop a sense of accomplishment and reward for the patient. Physicians and patients alike often assume that attainment of goals is sufficiently rewarding by itself. Although partially true, for many people, this "implicit-desirable-mystique" does not operate as a sufficient motivator. Many patients need payoffs that go beyond the attainment of the goal. In the process of setting behavioral goals, these rewards should be explored and included as a part of the planning for attaining the goal. The reduction from 250 pounds to 180 pounds will have some additional rewards in the ability to buy new clothes, being more physically attractive, feeling better about the self, etc. These "payoffs" are a part of the treatment process. The clinician should develop and exploit these additional rewards as a part of the total treatment planning procedure. Health is partly determined by the enjoyment of living. Enjoyment of other activities can be used as a contingency for the attainment of "healthy" behaviors.

Most importantly, set a deadline for determining when these goals are going to be reached. This sets an expectation of the rate at which there will be behavioral changes. Most frequently the deadlines will be off in the future. Convey the fact that the work will take time to accomplish and that the process of changing behavior involves the attainment of long-range goals. The unfortunate part of this future orientation is that it also implies that the tasks can be put off. The work of reaching goals *must begin immediately with small steps.*

Step 3–List the steps leading to the goals and short-term rewards for compliance.

The achievement of a long-range goal requires that there be some definitive steps taken on a regular and consistent basis. Taking pills three times a day means taking a pill when you get up in the morning and before lunch and dinner. Thus specific stimuli become the basis for establishing a new habit complex. In behavioral terms this means the elimination of old habits and the development of new behaviors that are repeated regularly. As these behaviors become new habits they lead to the attainment of long-range goals. The instruction to eat less is not sufficient to change an established habit of overeating. Changing habits means changing the organization of behaviors in specific ways. Instructions to eat one plate of food at each meal or not to eat except at meals, are more specific and more meaningful ways of organizing eating behaviors.

The patient continues the recording and monitoring process in this phase of treatment. Self-documentation of food intake or cigarette smoking not only focuses the patient's awareness on consumption but also provides a record of success or failure. A successful record provides a type of reward for the effort. Telling somebody else, ie, family, friends, physician, about this success is a constructive way of eliciting support and encouragement which reinforces behavioral change.

Behaviors are maintained by the rewards that support them. Changing behavior means giving up some of these rewards. In the process of changing behavior, additional short-term rewards should be

substituted. The patient should be encouraged to allow himself special privileges for the purpose of rewarding daily "good" behaviors. Reading a book for fun, taking some extra time in the shower, meditating, playing with the children for 30 minutes, painting a picture, or other short-term daily activities that are enjoyed for their own sake help make the process work. These rewards should include social reinforcements from others in the patient's family or circle of friends, including the physician and the office staff. These rewards should be written out along with the long-term goals and the steps for reaching them. Receipt of these rewards should be a part of the record that the physician keeps as a treatment plan is developed.

Step 4–Share the responsibility for monitoring, recording, and reinforcing the behavior.

A major difficulty in implementing behavior changes is the belief that habits can change by individual "willpower." We all know people that can "will" themselves into and out of any of the habits that they choose. Most people are not that self-directed and need a form of leadership or direction which can provide a means of doing something differently. People often look for someone with whom to share the responsibility for their behavior. In the health-care field this person is often the physician. The process of helping others means providing both the expertise and orientation that will aid the patient in sharing the responsibility for health management.

The physician's responsibilities in developing a behavior modification program include: assistance in defining goals, setting rewards, identifying and developing activities to reach those goals, expressing an interest in the patient's successes, collecting records, writing goals and rewards into the patient's chart, and reinforcing "good" behavior. These should be shared with the patient in a manner which expresses a real concern for the patient's welfare.

It is most important for the physician to assume the role of the agent of accountability for the patient's progress by keeping the records and monitoring the patient's progress toward the goal. The authors have found it best to develop a system for graphing the change in behavior. The pictorial presentation of decreased weight or reduced calories or fewer cigarettes or less alcohol consumption serves as a visual record of progress. For most patients this is more rewarding than records kept in tabular form. When the patient can visualize the change on each office visit, there is further inducement to continue with the program.

Also, the physician and the office staff must be oriented to rewarding desired changes. Commenting with enthusiasm on the pound lost or the lowered blood pressure reinforces the behaviors that have produced the change. The time that the physician spends with the patient should have the same positive tone, ie, good "strokes" for success. As the program develops there will be the need for regular reporting, monitoring, and reinforcement of successes. As the habits become a routine part of the patient's behavior, the physician should plan to phase himself out of the program and to phase in others in the social environment of the patient. Ultimately, the responsibility for managing the patient's behavior is in the hands of the patient. The overall objective of the treatment is to aid the patient in the development of means for self-control. In this, the physician serves a peripheral role as an educator.

Step 5–Write the program into a contract.

One of the most powerful procedures for modifying behavior is "the contract."[15] It is used in business and constitutes a large segment of the practice of law. Consequently there is a great deal of public acknowledgement of the importance of contracts. This procedure has been adapted to behavioral management procedures with a great deal of success.

The contract is a written mechanism for specifying the details of the program in a formal manner. It contains:

1. A statement of long-term goals in behavioral terms, rewards, and a deadline;
2. A statement of the steps or actions that will be used to reach these goals, and the rewards for attainment;
3. Reporting and monitoring procedures; and
4. The delineation of who is responsible for what actions.

These are written in a formal language, typed, and made available to both the patient and the physician as a part of the record. They are signed and

Figure 1.
Sample Contract for Weight Management Program

I, (Name of Patient), agree to participate in the Family Practice Weight Management Program, to reach my goal of (Target Weight) lbs. by (Target Date).
I understand that this goal will help me accomplish the following desirable conditions for myself. (List patient's reasons for losing weight) eg:

a. To improve the state of my health and reduce the chances of diabetes.
b. To fit into a smaller dress/suit.
c. To save money on food
d. To gain mastery over myself and over a bad habit.
e. To please my husband/wife and make myself more attractive to him/her.
f. To gain approval from my friends.

1. I agree to the following: (use individual rules developed by and with patient)
   a. I will eat three meals each day in the dining room at approximately 7:30 a.m., 12:00 noon, and 6:00 p.m.
   b. I will not eat at any other times.
   c. I will put down my fork after each bite.
   d. I will not watch television or read while eating.
   e. I will record all of the food and amount I plan to eat before each meal.
   f. I will weigh myself daily.
   g. I will consume six glasses of water daily.
   h. When I feel hungry I will call a friend and chat for ten minutes.
   i. I will carry with me a list of reasons for not eating to look at when I feel the urge to eat.
2. For doing these activities I will reward myself by the following methods: (the patient's rewards)
   a. I will save 50 cents each day in a glass jar. This money will be used for the purchase of new clothes.
   b. When I reach my weekly rate I will plan a visit with a friend for one hour.
   c. For suppressing an urge to eat, I will congratulate myself by looking in a mirror and saying, "Congratulations, you did it again!"
   d. For eating only one small plate of food at each meal I will receive congratulations from my family.
   e. For each pound lost my husband/wife will give me $1 for my bank.
3. I will provide my physician with the following records:
   a. Daily food and water intake on the recording forms provided by my doctor.
   b. My daily weights for the periods between visits.
   c. Monthly reports on the amount of money saved.
   d. Monthly letters summarizing my feelings about the program.
4. My physician agrees to provide the following services:
   a. To collect and record weekly weight on the weight chart.
   b. To plot weekly calories as provided by the patient onto a graph.
   c. To discuss with the patient changes in health status.
   d. To reward the patient for reduction in weight by providing a "Certificate of Completion" when the target weight is reached.
   e. To provide one free office visit for a family member for each 20 pounds lost.
5. I assert that I have discussed the above named objectives for the change of my behavior and I consent to work toward the achievement of these objectives.
6. I further assert that I have discussed the above-named intervention techniques with my physician and that I consent to apply these techniques.
7. I further assert that I shall provide the above-named data in order to determine the effectiveness of the use of the intervention techniques.
8. I further assert that I have freely entered into this contract knowing the therapeutic objectives and both the positive and negative potential effects of the intervention techniques.
9. I further assert that I shall provide my physician with the following compensation for his/her efforts on my behalf:

   _____

10. I further assert that I have been assured on my right to terminate my participation in treatment at any time, for any reason, without the need to offer explanation, and without penalty.
11. I further specifically agree that the information provided can be used for research reports which will not in any way identify me to others unless I have offered my specific, written permission.
12. I further agree that I shall keep all scheduled appointments and shall give at least 48 hours notice of my intention to cancel any appointment.
13. Other agreements:

    _____

    _____

_____ _____
Date Patient

_____ _____
Witness Physician

witnessed by the office staff with some pomp and circumstance. The patient is encouraged to keep the contract on display in a place where it will be seen daily as a reminder of the commitment. A sample of a contract with the conditions is given in Figure 1.

Contracts in this form are a commitment to the program made by the patient and physician. The document provides the structure to effect a behavioral change and clearly gives patients responsibility and direction for their actions.

As a practical matter, the contract is an efficient form of patient education. It represents a subtle form of self-confrontation. Since behavior change is difficult and requires giving up a source of rewards, many patients may be reluctant to risk these changes. The contract format can cut through the game playing between patient and physician that often occurs in areas of treatment which require major behavioral change. Contracts need not be final. Since there will be difficulties in fulfilling the terms of the contract, there should be clear provisions for renegotiating the terms. Excessive renegotiation is, however, a way of avoiding the action that effects change.

Comment

Dealing with failures is one of the most important critical areas of behavior modification. It is tempting to provoke guilt or punish the patient verbally for failure to follow directions. Such behavior by the physician will ultimately provoke in some patients withdrawal and avoidance of further treatment. A better and more reasonable strategy requires that the physician and patient recognize, from the outset, that changing a habit is a difficult task which requires time and energy. There will be setbacks but this does not mean that the program was a failure. It is always possible to start again, and again, and again, if necessary. In all cases,there are identifiable elements of success which should be emphasized. When resuming the program, assurances should be given that a new attempt is indicated with readjustments in the steps toward the goal. The failure to keep complete records of food intake, cigarettes smoked at a party, medications omitted over a weekend points to flaws in program design which require special procedures. The fact that the patient returned with partial success is usually an indication of commitment and a desire to keep trying.

Summary

The behavior modification techniques outlined have a variety of applications to office practice. They can be adapted to multiple situations in which behavior change constitutes a portion of the treatment, including interpersonal conflicts and the regulation of children's behavior as well as the care of obesity, depression, and hypertension. The techniques are well adapted to short and frequent office visits. Perhaps most importantly, these methods can be used in preventive medicine to provide patients with some clear directions in the establishment of health habits.[16]

Behavioral change is an integral part of the practice of medicine. As a simple and easily learned method of behavioral treatment, the application of the five steps which have been described can serve to enhance the means available to the family physician to deliver a wide variety of health-care services to his/her patients.

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