

# HEALTH PROMOTION AND MAINTENANCE I



# BEHAVIOR CHANGE

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## Learning Objectives

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1. Assess patient characteristics that promote or deter adherence.
2. Assess medication and provider characteristics that influence patient adherence.
3. Analyze the strengths and weaknesses of selected interventions based on specific factors influencing adherence.
4. Design a communication strategy to improve patient adherence when given patient characteristics.
5. Using theory, develop an approach to facilitate behavior change when given patient characteristics.
6. Justify a rationale for a selected behavioral approach.

## Patient Case

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Jeff Smith is a 53-year-old white man with hypertension, hyperlipidemia, and type 2 diabetes mellitus. He currently leads a sedentary lifestyle and is 23 kg (50 lb) overweight. His only exercise is walking from the parking lot to his office. He was physically fit and active before the birth of his children. He takes his drugs sporadically when his wife reminds him. These drugs include simvastatin 40 mg daily, lisinopril 20 mg daily, metformin 500 mg twice daily, and glipizide extended release 10 mg daily. His blood pressure and laboratory values are as follows: blood pressure 150/100 mm Hg, fasting blood glucose 140 mg/dL, hemoglobin A1C 9.5%, and total cholesterol 300 mg/dL (triglycerides 240 mg/dL, low-density lipoprotein cholesterol 179 mg/dL, and high-density lipoprotein cholesterol 30 mg/dL).

Jeff has a strong family history of cardiovascular disease, with both of his brothers and his father receiving treatment for it. Although he is currently nonadherent to his drugs, he is not concerned because no one in his family has experienced serious health consequences. Jeff's older brother, Adam, also has hyperlipidemia and hypertension. Adam recently lost 14 kg (30 lb), resulting in a reduction in his cholesterol concentrations and a lowering of his blood pressure into the reference range. Because of his efforts, Adam was able to discontinue his antihypertensive medication. It took

Adam several months to achieve his weight loss, with some setbacks in the process. Despite the struggle, Adam feels it was worth the effort, and he feels great.

Jeff's wife, Mary, is concerned about Jeff's health, especially since his recent diagnosis of diabetes. Mary is at her ideal body weight and has a healthy lifestyle. She exercises 60 minutes most days of the week and eats a nutritionally balanced diet. She has talked to Jeff about his health for years; now, she feels she has the "ammunition" to force him to change. Jeff knows he should make the change, but he thinks it will be too difficult. If he eats the way he should, he believes he will not be able to eat his favorite foods with his family and friends, which is something he truly enjoys. He also realizes that he needs to exercise to improve his health but feels he cannot fit this activity into his busy lifestyle.

Jeff and Mary have two children, Jessica and Matt. Matt will graduate from college in May. Jessica is married and expecting her first child. Jeff is looking forward to the birth of his first grandchild and already has plans for a family trip to Disney World in 2 years. Jeff also is looking forward to Matt's graduation and no more tuition bills. Jeff hopes to retire soon so that he can have more time to spend with his family.

## Introduction

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One of the difficult aspects of a pharmacist's practice is caring for patients like Jeff who struggle with adherence to treatment recommendations. In Jeff's case, he has several chronic conditions that require him to take drugs, and he should adjust his lifestyle to achieve positive health outcomes; however, Jeff is not modifying his behaviors to improve his health. He is not taking his drugs as directed, following nutritional guidelines, or exercising. Jeff is typical of patients in the health care system. Beyond developing optimal therapeutic regimens for patients, the role of the pharmacist includes motivating patients to adhere to their regimens so they can receive optimal therapeutic benefit.

When patient behaviors are discussed, the term *compliance* often enters the conversation. A common

question is whether the patient is complying with or following the pharmacist's directions or recommendations. Although often used interchangeably, *adherence* is different because it implies that the patient has a choice. Compliance is by nature paternal; the pharmacist is the "parent," and the patient is the "child" following the parent's directions. Adherence is a step away from the parental relationship and suggests that the patient collaborates in the decision-making to adhere to a regimen.

Other terms have recently entered the discussion of patient health behaviors. *Persistence* is similar to compliance and adherence because it describes patient actions regarding health activities. A patient described as having persistence with his drugs indicates that the patient is continuing to take medication as directed as long as deemed necessary. This patient does not discontinue the medication unless advised to do so by a pharmacist. *Concordance* describes a partnership or collaboration between the pharmacist and patient. With concordance, an agreement is arranged by the patient and pharmacist on whether, when, and how a medication should be taken or a behavior should be changed.

When confronted with nonadherence, a pharmacist must consider and investigate the reasons why a patient is not following health directions. It often is assumed the patient unintentionally does not follow directions, such as Jeff forgetting to take his drugs. Although this occurs, unintentional nonadherence is not always the explanation. Sometimes, a patient intentionally does not take a medication or adopt a healthy behavior. It is important that pharmacists consider all the possibilities or factors influencing patient behaviors.

### Factors Affecting Patient Health Behaviors

In 2003, the World Health Organization released a report compiling information about adherence in both developed and undeveloped countries. The report also reviewed literature on adherence in patients with a variety of disease states. In the report, factors influencing patient adherence to recommendations were divided into five areas or dimensions: (1) health system, (2) social/economic, (3) condition related, (4) patient related, and (5) therapy related. Although not all items affecting adherence were discussed, the report provides a framework to classify adherence issues and allows pharmacists to recognize that adherence is affected by factors other than simply remembering to take a medication.

A list of factors found to influence adherence is provided in Table 1-1. Condition and therapy-related factors are items that many would expect to see on the list. For example, increased frequency or complexity of the regimen results in lower adherence. The frequency and severity of adverse effects also can result in lower adherence. Demographic factors such as age and sex are commonly assumed to influence adherence, but evidence is inconsistent in supporting these assumptions. The patient-related factors influencing adherence are the focus of this chapter.

Taking into account the list of factors in Table 1-1, effective programs need to extend past the simple provision of information. The patient-related factors that influence whether individuals adopt healthy lifestyles or adhere to medication recommendations (e.g., illness beliefs, motivation to change, confidence in performing the behavior, patient

**Table 1-1. Factors Influencing Patient Adherence**

<b>Health system</b>	<ul style="list-style-type: none"> <li>• Patient-provider relationship</li> <li>• Communication</li> <li>• Access to care</li> </ul>
<b>Social/economic</b>	<ul style="list-style-type: none"> <li>• Availability of social support networks</li> <li>• Living conditions</li> <li>• Financial resources/Income</li> </ul>
<b>Condition-related</b>	<ul style="list-style-type: none"> <li>• Severity of condition</li> <li>• Level of disability</li> <li>• Progression of condition</li> <li>• Availability of effective treatment</li> <li>• Presence of comorbidities</li> <li>• Presence of mental illness</li> </ul>
<b>Patient-related</b>	<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Health/illness beliefs</li> <li>• Impact on lifestyle</li> <li>• Cultural beliefs</li> <li>• Perceptions of               <ul style="list-style-type: none"> <li>◦ Susceptibility to illness</li> <li>◦ Ability to accomplish change (self-efficacy)</li> </ul> </li> <li>• Expectations of treatment</li> <li>• Health literacy level</li> </ul>
<b>Therapy-related</b>	<ul style="list-style-type: none"> <li>• Complexity of regimen</li> <li>• Number of drugs</li> <li>• Duration of treatment</li> <li>• Previous treatment failures</li> <li>• Frequent changes in regimens</li> <li>• Immediacy of beneficial effects</li> <li>• Adverse effects</li> </ul>

Information from: American Pharmacists Association. Medication Compliance-Adherence-Persistence (CAP) Digest. Washington, DC: APA, 2003; Chia L, Schlenk EA, Dunbar-Jacob J. Effect of personal and cultural beliefs on medication adherence in the elderly. *Drugs Aging* 2006;23:191–202; DiMatteo MR. Variations in patients' adherence to medical recommendations: a quantitative review of 50 years of research. *Med Care* 2004;42:200–9; DiMatteo MR. Social support and patient adherence to medical treatment: a meta-analysis. *Health Psychol* 2004;23:207–18; and World Health Organization. Adherence to Long-Term Therapies: Evidence for Action. Geneva: WHO, 2003.

expectations of treatment) cannot be adequately addressed by patient education alone. To result in behavior change, components of effective interventions or programs include (1) information, (2) development of self-management skills, (3) development of self-efficacy, and (4) social support for encouraging maintenance of changed behaviors.

## Health Behavior Theories

Several models have been studied and applied to assist pharmacists in understanding patient success or lack of success in changing health behaviors. These models have been used to help explain a variety of health behaviors, including preventive behaviors such as attending health screenings, taking multivitamins, using contraceptives,

and using sunscreen. These models also are used to explain patient behaviors in the management of chronic conditions such as congestive heart failure, arthritis, hypertension, and diabetes. The following describes health behavior theories that can be used to help health professionals facilitate behavior change in their patients. Although not a comprehensive overview of all existing health behavior models, it includes the most common models reported in the literature.

### **Social Cognitive Theory/Self-efficacy**

Social cognitive theory relates the performance of a behavior change to an individual's expectation of (1) his or her ability and (2) the probability of success in accomplishing the change. In this model, there are two types of expectations: outcome and efficacy. Outcome expectations refer to an individual's belief that performance of a specific task or behavior will lead to a specific outcome. Efficacy expectations refer to a patient's belief that he or she has the ability to perform the behavior change. In the case example, Jeff is considering two behaviors: diet and exercise. Using a low-fat diet as an example, Jeff will consider whether the diet will lead to a reduction in cholesterol and blood pressure. If he believes this reduction will occur because of the low-fat diet, his outcome expectations are considered high.

The second aspect concerns his belief about his ability to follow the diet. In the case example, Jeff has concerns about modifying his diet. Although he believes that a low-fat diet will lead to the desired outcome, his self-efficacy may not be high enough for him to attempt this change because he questions whether he will be able to accomplish the change (low efficacy expectations). If, however, Jeff believes he is capable of adhering to a low-fat diet, he is more likely to attempt it. Conversely, if Jeff does not believe a low-fat diet will lead to a reduction in his cholesterol or blood pressure (low outcome expectations), it is unlikely he will attempt to change his diet. To maximize the possibility of behavior change, a patient needs to have both high outcome and efficacy expectations.

Past experience or accomplishments with a behavior change can influence an individual's confidence in the ability to accomplish certain tasks. For example, if Jeff had attempted low-fat diets in the past and had been unsuccessful in following these diets, his efficacy expectations would be low for this behavior change. If he had been successful in the past, however, he would be more likely to attempt the low-fat diet because his efficacy expectations would be higher.

Self-efficacy can be developed in several ways besides past performance accomplishments, including vicarious experiences and verbal persuasion. Vicarious experiences occur when a patient views another person's effort with a behavior change. Self-efficacy can improve as a result of observing another person's successes. Achieving confidence simply through observation, however, is not sufficient. When observing the success of another person, the individual needs to see that the person (1) is similar to the observer, (2) exerted effort in accomplishing the task (it was not simple), and (3) experienced obvious and rewarding outcomes.

For Jeff, his brother could provide the vicarious experience. His brother has the same health issues, family history, and background as Jeff. With these similarities, Jeff's efficacy could potentially increase because of watching his brother

lose weight. In other words, if his brother could do it, so can he. Jeff also observed his brother's clear and rewarding outcomes: weight loss, reduction of medication, and better control of his hypertension and hyperlipidemia. Although Mary is healthy, she would not necessarily be a good model to improve Jeff's self-efficacy. Besides the sex difference, Jeff also has not seen her struggle to lose weight.

Verbal persuasion is used by many pharmacists (e.g., through encouragement to the patient, saying "you can do it"). Pharmacists also can offer other encouragement, such as reminding the patient of past or similar successes with change. Examples of this type of encouragement include "I'm certain you can do this now because you were successful at it in the past" and "I'm certain you can succeed at cutting fat from your diet because you were successful in cutting back on sugar." Of the three ways to develop self-efficacy, past performance accomplishments is the most effective.

One of the main goals of pharmacists assisting patients in behavior change should be to identify ways to improve their self-efficacy. Patients' perceptions of their abilities to accomplish tasks or behaviors influence their adherence to drugs and lifestyle modifications.

### **Health Belief Model**

The health belief model is one of the oldest models used to explain patient behaviors. The basis of the model involves the desire to avoid illness or to get well and the belief that a specific action will prevent the illness or lead to wellness. In this model, individuals determine their threat or risk of an adverse health event by evaluating their susceptibility to the disease or the severity of its consequences. This evaluation of the disease threat or health event influences the likelihood of taking action or changing behaviors. Perceived susceptibility refers to a patient's belief of whether a disease is likely to occur or the vulnerability of a patient to a disease. The perceived severity or "how bad is it" is evaluated by patients with regard to the seriousness of the consequences of the threat. If both perceived susceptibility and severity are high, the individual believes the disease can occur and is serious, therefore increasing the likelihood of taking action or changing a behavior. If either of these components is low, then the likelihood of change is lower.

The health belief model also suggests that other factors influence the likelihood of patients taking action to improve health; these include the perceived benefits and barriers of the behavior change. Patients weigh the benefits and barriers and then determine if they will attempt the change. For the benefits, patients consider the effectiveness of the change in reducing the threat of the disease or specific health event. Patients also evaluate the negative aspects (barriers) of the behavior change. If the benefits outweigh the barriers, change is more likely to occur. If perceived barriers are more significant than perceived benefits, the likelihood of change is lower. When barriers outweigh benefits, patients are less likely to take action, even if they have both high perceived susceptibility and severity.

Cues to action also can influence a patient's perceived threat of a disease. These are stimuli that can change a patient's previous perception of the threat. Cues can include a mass media campaign about the disease, a family member or friend receiving a diagnosis of the disease, or a celebrity developing and discussing the disease. When

a cue occurs, it can trigger the decision-making process for a patient. Modifying factors are often included in the model because they can influence patient perceptions. Modifying factors include demographic (i.e., age, sex, and race), sociopsychological (i.e., personality and peer group pressure), and structural (i.e., knowledge or prior contact with disease) variables.

When considering Jeff within the framework of the health belief model, his perceived susceptibility to an adverse health event is low. He is less concerned about his health because no one in his family has experienced serious consequences from cardiovascular disease. It is difficult to determine his perceptions of the seriousness of his diseases based on the information in the case. In addition, Jeff appears to have some barriers to adopting a healthy lifestyle to reduce his threat of cardiovascular disease. He does not like the concept of changing his diet or including exercise in his busy schedule. Based on this information, it would appear Jeff's likelihood of taking action is fairly low. His perceived susceptibility is low, his perceived severity is unknown, and the barriers outweigh the benefits. If a cue to action occurred, however, this could change Jeff's motivation for behavior change. For example, if one of Jeff's family members experienced a heart attack, he could recognize the seriousness of the disease and feel compelled to take action for himself.

### **Theory of Reasoned Action**

In the theory of reasoned action, behaviors are assessed by individuals before they are attempted. Three main components (i.e., behavioral intention, attitude toward change, and subjective norm) in the model determine the probability of behavior change. Behavioral intention refers to the individual's perceived likelihood of performing a behavior. The stronger the intention, the more likely the individual will change the selected behavior. The individual's motivation and effort exerted to change are inherent in behavioral intention. Intention to change is influenced by an individual's attitude toward the behavior to be performed and the belief that individuals important to him or her would like for him or her to perform the behavior (subjective norm). Attitude toward the behavior change includes the individual's assessment of whether the change will lead to a certain outcome and the probability of success in changing the behavior.

In other models, little emphasis is placed on the individual's perceptions of the level of influence others may have with regard to the behavior change. The theory of reasoned action includes subjective norm, or whether individuals important to the patient want the behavior change to occur. If individuals important in the patient's life believe in the change, the patient's intention to change the behavior may be stronger. The other aspect to be considered is whether individuals are motivated to do what others think they should. If they are not motivated by what others think about the behavior change, the subjective norm will have very little influence on their intention to change.

According to this model, individuals will change a behavior if they believe that the benefits of success outweigh the chances of failure and that individuals important in their lives want them to perform the behavior change. Applying this model to Jeff, he has significant individuals who want him to change his behavior. Mary now feels she has the

“ammunition” to force Jeff to change his behavior with regard to diet. From this, it can be assumed that she wants him to change. The question is whether Jeff is motivated by Mary's attitude in wanting him to change. In addition, it is difficult to determine Jeff's attitude toward diet or exercise. Jeff thinks it will be difficult to change, which may affect his belief in the level of success he will experience. Although Jeff acknowledges that he should change, it is not obvious that he has truly considered the benefits of the behavior. Although the benefits may appear obvious to others around Jeff, including pharmacists, it is ultimately his perception that will determine whether he adopts a healthier lifestyle through diet and exercise.

### **Theory of Planned Behavior**

The theory of planned behavior adds an additional component to the theory of reasoned action: perceived behavioral control. In the theory of reasoned action, it is assumed that nonmotivational factors influencing behavioral intention are within the individual's control. Although this can be the case, individuals sometimes perceive factors to be outside their control, and they therefore decrease their intention to change. Factors influencing the intention to change are the resources (i.e., time, knowledge/skills, and opportunity) required to perform the behavior change. Perceived behavioral control is similar to self-efficacy because it refers to the person's perception of control over factors related to behavior change. If individuals have control over intervening factors, it can be assumed that they have increased self-efficacy, or confidence, in changing the behavior. As with self-efficacy, individuals will expend more effort to change a behavior if their perception of control is high. Jeff's perceived behavioral control is low, which could be affecting his intention to change. When Jeff thinks about exercise, he cites his busy schedule as inhibiting his ability to perform this behavior. His perception of control, or lack of control, over his schedule is influencing his assessment of beginning an exercise regimen.

### **Transtheoretical Model of Change**

The transtheoretical model of change, often called the stages of change or readiness to change model, identifies patients' readiness to change their behavior. Identifying a patient's level of readiness to change helps determine the approach that should be used to motivate change. Patients are classified into one of five stages (i.e., precontemplation, contemplation, preparation, action, or maintenance) according to their level of motivational or behavioral readiness in committing to a change. The basic premise of the model is to help patients move one stage forward in the continuum, not directly to action. Patients must move sequentially through the stages for change to occur. Approaches or interventions should be targeted on the basis of a patient's level of readiness for change.

In the precontemplation stage, patients are not considering or contemplating a change in the next 6 months. There could be a variety of reasons why they are not contemplating a change: they are unwilling, they are uninformed or do not recognize the need to change, or they are discouraged or have tried to change previously but have been unsuccessful (e.g., low self-efficacy).

In the contemplation stage, patients are considering a behavior change within the next 6 months. Unlike precontemplation, patients are aware of the need for a change at this stage; however, the barriers of the behavior change outweigh the motivating factors, resulting in ambivalence to the change. When patients move into the preparation stage, they are beginning to take steps to implement their behavior change in the short term, often characterized as the next 30 days. They are investigating their options or alternatives, such as identifying diets, gathering support, joining a gym, or buying tobacco cessation products. When patients are consistently engaged in the target behavior, they are in the action stage, which lasts about 6 months. When patients have actively been engaged in their changed behavior for more than 6 months, they are in the maintenance stage.

Other components included in the model are decisional balance, self-efficacy, and processes of change. Decisional balance involves the patient weighing the pros and cons of the behavior change. This is explicitly seen during the contemplation and preparation stages of the model; however, it can occur in other stages as well. As people progress through the model, the influence of the pros for the behavior change increases, whereas the influence of the cons decreases. Self-efficacy is, as described earlier, the confidence of individuals in their ability to perform the behavior change. In many studies, higher self-efficacy often indicates that a patient is in the action or maintenance stage. Processes of change will be described in the section on interventions for behavior change.

The transtheoretical model has been applied in a wide range of disease states that require health behavior changes (e.g., smoking cessation, weight loss, exercise). Patients can fluctuate between stages, including relapses during the action and maintenance stages. In addition, individuals can get “stuck” in a particular stage for long periods. The goal of the pharmacist is to help patients decide to move through the stages until they reach action and ultimately maintenance.

The first step in the process for the pharmacist is to determine the stage or level of readiness of individuals. The staging algorithm is a discrete categoric measure identifying one prevailing stage. It is more commonly used than other measures because it is brief and can be verbalized as a question or series of questions in a patient encounter. Using smoking as an example, the pharmacist can ask patients, “Are you currently a smoker?” The patients’ response possibilities are as follows: (1) yes, I currently smoke (precontemplation, contemplation, or preparation); (2) no, I quit within the past 6 months (action); or (3) no, I quit more than 6 months ago (maintenance). If patients say they smoke, the pharmacist then asks a follow-up question: “Are you seriously thinking about quitting?” Patients are then staged as in precontemplation, contemplation, or preparation based on whether they planned on quitting and the time frame for the change. For example, if patients say they plan to quit within 6 months, they are in the contemplation stage of change. Once the stage of readiness has been identified, the pharmacist can determine the techniques to facilitate movement through the model. In general, the approaches used for the precontemplation and contemplation stages are quite different from those used in the other stages of the model. These approaches or techniques will be discussed

in greater detail in the section on intervention for behavior change.

Jeff is not in the precontemplation stage because he is considering the adoption of a healthier lifestyle but has not started to take steps toward changing his behavior (i.e., preparation). Jeff is in the contemplation stage. He is considering the pros (e.g., he will feel better, he will live to enjoy retirement, he will enjoy his new grandchild) and cons (e.g., it is difficult to change, he enjoys eating unhealthy foods, he likes eating with family and friends) of the change. Once the decisional balance is tipped toward the benefits of change, Jeff will enter the preparation stage and take steps toward changing his behavior. The pharmacist can facilitate this transition by using techniques to “tip the balance” to help the benefits of the behavior change become more influential.

### Comparison of Models

There are commonalities among the models that increase the likelihood of a patient changing behavior to improve health. These commonalities include patient beliefs about having the requisite skills, facing few barriers to the change, achieving a positive outcome from the change, and having a support system for the change. In addition, patients must be motivated to change the behavior and must be confident about their ability to perform the new behavior. When using these models, remember that they are based on the patient’s perceptions, not the pharmacist’s. Although the pharmacist can believe the patient has the knowledge, confidence, and capability of performing these changes, if the patient does not view the situation the same way, change will not occur.

These models are only a few of the many in the literature. Reviewing a variety of models can assist pharmacists in determining the best theoretical approach for facilitating behavior change in patients. The goal of pharmacists is to determine the issues preventing a patient from changing. Approaches to facilitate patient behavior change should be based on an evaluation of the individual patient’s needs. Provision of patient education will not necessarily help a patient if low confidence is preventing a behavior change. The following sections describe how approaches for stimulating a behavior change can be tailored to individual patient needs.

## Applying Health Behavior Theories to Patient Care

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### Communication Strategies: Motivational Interviewing

Pharmacists traditionally have changed patient behaviors by giving advice. Often, this approach involves pharmacists instructing patients on the behavior change to be attempted, telling them how severe the consequences will be, and expecting complete compliance with these directions. Although commonly used, this approach is often not effective in changing patient behavior and, in fact, can result in resistance to the desired change. Among other reasons, resistance may occur because of the patient’s being “told what to do.”

Motivational interviewing is a patient-centered approach to facilitate behavior change by exploring and resolving a patient's ambivalence. It was first used in patients with addiction behaviors. This approach was a switch from the advising or persuasive approach for addressing "problem" behaviors to an empathetic approach in which a pharmacist assists in exploring the patient's ambivalence or resistance to change. The exploration and resolution of ambivalence is similar to what occurs in the precontemplation and contemplation stages of the transtheoretical model. Motivational interviewing was developed in parallel with the transtheoretical model and provides a framework to facilitate movement across the stages of behavior change.

The spirit of motivational interviewing focuses on the collaboration or partnership between the pharmacist and the patient. As a part of the collaboration, the pharmacist elicits the patient's motivation for change while recognizing the patient's autonomy or responsibility for directing the change efforts. In interactions with the patient, the pharmacist uses principles of motivational interviewing, which include expressing empathy, developing discrepancy, rolling with resistance, avoiding argumentation, and supporting self-efficacy.

Expressing empathy by using reflective listening is an essential component of the motivational interviewing approach. While listening, the pharmacist reflects the feeling the patient is experiencing, thereby helping the patient feel understood. In developing discrepancies, the pharmacist encourages cognitive dissonance by having patients compare their present behavior with their goals. A patient often already knows a discrepancy exists, and the role of the pharmacist is to amplify this discrepancy, making it difficult for the patient to ignore. Coercion or pressure should be avoided. The goal should be for the patient, not the pharmacist, to state the reasons for change. A pharmacist should roll with resistance by using mutually negotiated solutions with the patient. When a pharmacist experiences patient resistance, it is an indicator that a different strategy or approach should be used to address the targeted change. The pharmacist should avoid arguing, which can make a patient defensive and resistant to change. Arguing is counterproductive to the motivational interviewing process. Self-efficacy should be encouraged and supported because it will give the patient hope and increase his confidence in the performance of the behavior. In developing self-efficacy, the focus is not on the pharmacist changing the patient but on assisting the patient in deciding to make the change.

Among the methods used in motivational interviewing, five specific techniques can be used from the first session with a patient and throughout the motivational interviewing process. These methods are as follows: asking open-ended questions, listening reflectively, affirming and supporting the patient, summarizing statements, and eliciting change talk. The first four techniques assist in the exploration of the patient's ambivalence and clarification of the reasons for change; the last technique, eliciting change talk, is a method for resolving ambivalence. Change talk includes having the patient express the disadvantages of keeping the status quo, advantages of the change, optimism about the change, and intention to change.

Pharmacists can elicit change talk from patients in several ways. Pharmacists can ask patients evocative questions about

the change. For example, to determine patient perceptions about the advantages of a specific change, the pharmacist can ask, "What would be the good things about [the change]?" In addition, the pharmacist could ask the patient to rate the importance of the change using the scale 0 (not at all important) to 10 (extremely important). This should be followed by the patient rating his or her level of confidence in performing the change using this same ruler. After the patient rates the importance and confidence of change, the pharmacist would ask, "Why are you at [number] and not 0?" and then, "What would it take to move from [stated number] to [a higher number]?" Other techniques to elicit change talk include using decisional balance (positive and negative aspects of behavior), querying about extremes of the patient's or another's concerns about a behavior, looking back to a time before the current health problem, looking forward to what could occur after a change, and exploring the patient's values and goals.

Although the use of motivational interviewing is established in the transtheoretical model, motivational interviewing can be used together with other theoretical constructs for behavior change. As discussed earlier, many of these models have similar concepts, making the use of motivational interviewing an effective approach for facilitating behavior change. Motivational interviewing would be an effective tool to use with Jeff, who appears quite ambivalent about adopting a healthier lifestyle. Currently, Jeff does not exercise and rarely takes his medication; his diet is poor. Motivational interviewing should be used to reveal the discrepancy of Jeff's current behavior compared with his desire to retire and enjoy his family.

## **Interventions for Behavior Change**

Using the models as a guide, pharmacists should identify what patients need to facilitate behavior change. Although there may be similarities across disease states, patients will have different viewpoints, motivations, and self-efficacy. The intervention should be tailored to patient needs. Although patient education plays a role, the provision of education alone instills change in relatively few patients. In the next section, interventions are differentiated on the basis of whether patients are considering or preparing for a change and are described using the transtheoretical model processes of change as a framework. This framework should serve as a guideline for pharmacists.

### **Patients Considering a Behavior Change**

Consciousness-raising is one of the processes of change used to help patients in the precontemplation or contemplation stage of change move into the subsequent stage. In this process, the patient searches for information about why a behavior change should occur. The goal of this technique is to increase a patient's awareness of the problem behavior's causes and consequences. Jeff is in the contemplation stage, so this technique would be appropriate to use for him.

Dramatic relief is a process of change technique used to evoke an emotional response to the behavior change. This can be done through role-playing a particular situation involving the behavior being considered. Media campaigns often use this technique in their messages. Examples include commercials with a woman smoking through her tracheotomy or a wife talking about the death of her husband



and the tobacco “rewards” the husband received. The goal of these commercials is to evoke an emotional response resulting in the consideration of behavior change such as smoking cessation.

Self-reevaluation is a technique used to help individuals compare what life would be like with a healthy behavior versus the current unhealthy behavior. This technique helps individuals consider their self-image and whether the unhealthy behavior fits this self-image. Conversely, patients can consider how a positive behavior change (e.g., exercise) fits within their self-image or what their life would be like if they performed this behavior. Jeff would be a candidate for this technique because he is in the contemplation stage and is considering a behavior change.

Environmental reevaluation is similar to self-reevaluation except that it focuses patients on the impact of their behaviors on others or the environment. In other words, how does the behavior affect family, friends, and coworkers? How does the behavior affect patients as role models to others? For Jeff, environmental reevaluation could be particularly salient. He is looking forward to the birth of his grandchild. How will his health affect his enjoyment of his family? What kind of role model will he be to his grandchild? How would his family feel if he experienced a serious consequence because of not taking care of his health?

### Patients Preparing for or in the Process of Changing a Behavior

Self-liberation is the process of making a commitment to change behavior by establishing when the change will occur. This self-liberation occurs during the preparation stage of the transtheoretical model. The patient often sets a specific date for the behavior change to occur. An example of self-liberation is when people across the country commit to a behavior change on New Year’s Day or during the Great American Smokeout. Once Jeff has left the contemplation stage and entered the preparation stage, the pharmacist can help him with the process of self-liberation by assisting him in setting a goal date to begin his behavior change.

When the patient has decided on a behavior change, goal setting for the change should occur. To be effective, the pharmacist should refrain from telling a patient what the goal should be. Instead, the patient should set the goals with the assistance of the pharmacist. Both short- and long-term goals should be established. In addition, the goals should be well-defined, measurable, reasonable, and attainable. If the patient wants to lose weight, for example, a weekly goal should be set in addition to the total weight-loss goal. Jeff is 23 kg (50 lb) overweight; a weight loss of this size would seem an insurmountable goal to many patients. To assist Jeff, a realistic weekly goal should be set in addition to the 23-kg weight loss. The weekly goal should be reasonable and fairly easy to accomplish so that his self-efficacy for the behavior change will improve.

Problem solving also can assist a patient in accomplishing behavior change. The pharmacist can describe situations and help the patient think through the solutions. In other words, the pharmacist can say, “If X happens, what will you do?” For example, for a patient with diabetes, the pharmacist would have the patient determine the action needed to reduce the blood glucose if it became abnormally high.

Jeff most likely will face situations in which it will be difficult for him to adhere to his diet. These situations could include a birthday party, doughnuts at the office, or lunch with colleagues. The pharmacist can talk to Jeff about these situations and assist in problem solving so that Jeff can determine his response to these situations before they occur, which will allow him to adhere to his diet.

The pharmacist also should teach the patient the skills necessary to accomplish the behavior change successfully. In many cases, a patient may not know how to perform a behavior. A common example is the patient who recently received a diagnosis of diabetes but does not know how to draw or inject insulin or use a blood glucose meter. The pharmacist would need to teach the patient the skills to perform these tasks by modeling them for the patient. The best way to model a behavior for a patient is to determine current understanding and provide instruction based on the understanding; clearly specify the behavior to be modeled; reduce complex behaviors into easy-to-follow steps; sequence instruction from easy to more difficult behaviors; have the patient perform the behavior; provide feedback; and provide further modeling, if necessary. Jeff would most likely need instruction on how to adhere to a diet, which would include reading food labels, determining portion size, and estimating caloric needs. The pharmacist would need to assess Jeff’s current understanding and tailor instruction on the basis of this information. After instructing him, the pharmacist could have Jeff interpret a food label, determine a portion size, and develop a daily meal plan based on caloric needs.

Patients should self-monitor their progress with the behavior change. One of the most common techniques is keeping a journal or writing in a diary. These techniques can be used by patients with a variety of disease states, including obesity (food diary), diabetes (blood glucose concentrations), hypertension (blood pressure measurements), and asthma (peak flow values). Self-monitoring allows patients to know how they are doing in the performance of the behavior and provides a record for the pharmacist to use to help patients identify problems. Jeff could use a food diary in which he would write down everything he eats. This process would help him adhere to his diet because he would see a list of all the food he eats. The food diary would also provide a record for Jeff’s pharmacist to identify problem areas if Jeff has difficulty losing weight.

Reinforcement management encourages behavior change by rewarding positive behaviors. Positive reinforcement can include self-rewards as well as rewards from others. For example, participants in the Weight Watchers program receive a reward (a gold star) for every 2 kg (5 lb) lost. Additional rewards are received when 10% weight loss and goal weight are achieved. Individuals also can reward themselves for reaching specific goals. Rewards can include going to a movie, purchasing a book or CD, and participating in an activity. Contingency contracting is a type of reinforcement that can be used with a patient. In contingency contracting, an agreement is made between the patient and pharmacist. This contract describes what will be done by each party (patient and pharmacist) and the consequences. Consequences can be rewards, such as a coupon, when a patient meets the obligations specified in the contract. Positive reinforcement is most effective at

the beginning of the behavior change when a patient may need encouragement to adhere to the change. Positive reinforcement could be used with Jeff by giving previously established rewards as he achieves his weight-loss goals.

Counterconditioning is substituting alternatives for the problem or unhealthy behavior. A wide range of alternatives can be used, and selection is dependent on the behavior change. Alternatives can be as simple as using 2% or skim milk in place of whole milk. Relaxation techniques also can be used when experiencing anxiety or stress, which influence behaviors such as smoking or stress eating. Jeff could identify low-fat alternatives to substitute for his favorite foods. In addition, he could identify and participate in an activity that he would enjoy with his family other than eating.

Stimulus control is the removal of cues for the “problem” behavior. Examples include removing fattening foods from the home, not going to a bar where people smoke, and avoiding restaurants with large portion sizes or buffets. Similarly, the patient can develop prompts or cues to encourage healthy behavior. These cues can be connected to daily activities, such as placement of medication next to the coffee maker in the morning. Having a gym bag visible in the car can be a cue for exercise. Other examples of cues include the use of alarms to help a patient remember to take a medication or perform an activity and the use of refill reminder notices.

Helping relationships, or the availability of social support, allow a patient to share the difficulties and successes of the behavior change with someone who cares. Support can be from family and friends, self-help groups, and pharmacists. Jeff appears to have the support of his family in performing his behavior change. A self-help group in which he could share his experiences with others who face the same difficulties and problems could also provide support.

In designing a strategy to improve patient adherence, interventions should be selected on the basis of whether a patient is considering a behavior change, preparing to change, or currently in the process of changing a behavior. Motivational interviewing can be applied to elicit a patient’s readiness for change by using strategies to explore and resolve ambivalence. When the patient is ready to change behavior, the pharmacist can help the patient devise a plan for change. Action-oriented interventions should be reserved for patients preparing for or actively performing a behavior. Using action-oriented interventions in patients not prepared to make a change will not be effective and can discourage both patients and pharmacists. When a patient is in the action and maintenance stages, the interventions are focused on improving self-efficacy and reinforcing accomplishments.

### **Collaborative Management of Patient Care**

Pharmacists can assist patients, but patients must make the decisions regarding the performance of healthy behaviors. Patients live with their decisions on a daily basis, whereas the pharmacist is involved in a patient’s care for infrequent, intermittent periods. Rather than a prescriptive approach to patient care, a collaboration or partnership between the patient and pharmacist should be encouraged. Collaborative management has four components: (1) definition of problems; (2) target setting, goal setting, and planning; (3) provision of a continuum of self-management services and support services; and (4) monitoring and follow-up.

Often, pharmacists and patients define health problems differently, with pharmacists focused on diagnosis and compliance with recommendations and patients focused on functioning, symptoms, and difficulties in complying with recommendations. Instead of determining what will be discussed, the pharmacist should ask the patient to identify the problem to be addressed. The interaction should lead to identifying the problem, targeting, goal setting, and planning. The goals should be established by the patient with the assistance of the pharmacist. To help the patient reach these goals, the pharmacist should provide a variety of options. Behavioral approaches to patient change should be used in the process; these approaches are tailored on the basis of readiness to change, motivation, and self-efficacy. The pharmacist should follow up with the patient regularly to assess progress toward goals.

## **Conclusion**

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Many of the health conditions that patients face require adopting lifestyle modifications, including diet and exercise. With an increasing number of patients experiencing diabetes, obesity, hypertension, and cardiovascular disease, pharmacists will be faced with facilitating behavior changes in their patients in addition to encouraging medication adherence. Changing health behaviors and improving adherence to treatment recommendations is a complex process. Patient education alone will not address all factors that influence a patient’s decision to adhere to behavior change recommendations. Health behavior theories provide tools for pharmacists to use in identifying patients who do not engage in target health behaviors. In addition, theories can assist pharmacists by providing frameworks for individualizing interventions that have been shown to be important in facilitating change.

## **Annotated Bibliography**

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1. American Pharmacists Association. Medication Compliance-Adherence-Persistence (CAP) Digest. Washington, DC: American Pharmacists Association, 2003.

This is a review of compliance and related issues with a focus on medication use. The strengths and weaknesses of compliance measures (e.g., clinical judgment, self-report, clinical response, biochemical measures, pill counts, pharmacy records, electronic medication monitors) are examined. Strategies to improve patient compliance are highlighted, with a focus primarily on education and action-oriented strategies. Tools and a list of resources are provided to assist pharmacists in their practice settings. This document provides a foundation for pharmacists who are looking for ways to improve medication compliance behaviors in their patients.

2. Ajzen I. The theory of planned behavior. *Organ Behav Hum Decis Process* 1991;50:179–211.

Although the theory of reasoned action has been used widely to explain patient health behaviors, it assumes patients have control of all the factors influencing their behavior. As a result, the model was modified to incorporate perceived

behavioral control to account for factors outside the patient's control. The theory of planned behavior resulted from this modification. The author describes the theory of reasoned action (original model) as well as the theory of planned behavior. Evidence supporting the addition of perceived behavioral control is provided. Adding perceived behavioral control appears to increase the power of the theory of reasoned action in explaining the variance in a wide range of behaviors.

3. Bandura A. Health promotion by social cognitive means. *Health Educ Behav* 2004;31:143–64.

The author provides an overview of behavioral theories from a societal perspective and examines the use of models in facilitating individual and societal changes. Public health campaigns and interactive technologies are discussed as methods for behavior change. Innovative techniques in promoting healthy behaviors in children are explored, focusing on the prevention and treatment of diabetes, obesity, and asthma. Although pharmacists focus predominantly on individual patient needs, the broader perspective should also be considered, as discussed in this chapter. In addition, innovative techniques on a societal level can be adapted and used in individual practice settings.

4. Blue CL, Black DR. Synthesis of intervention research to modify physical activity and dietary behaviors. *Res Theory Nurs Pract* 2005;19:25–61.

Using a descriptive review process, the authors assess the conceptual and methodological issues in interventional research on physical activity and dietary behaviors. Components used in the interventions (n=17) include the following: providing education, using behavior change strategies, improving social support, and addressing organizational issues. Although theory should be used in the design of behavioral interventions, less than half of the studies explicitly outline the models used in the development of the intervention. When theory is not used, it is difficult to interpret and explain the results. From the review, the authors develop a checklist of 12 lessons learned for use in interventional studies focused on behavior change. These lessons address the following aspects of intervention development: connecting theory to program components and outcomes, relevancy of the program to the problem, practicality and feasibility, preferences in change strategies, health pedagogy, moderating variables and extraneous factors, recruitment, retention, intervention adherence, and relapse, dose response/strength, therapeutic index or safety factor, process evaluation, reliability and validity of measures, and sustaining intervention effects. Future research should adopt these lessons so health care professionals can better understand the link between the intervention and resulting patient behaviors.

5. Britt E, Hudson SM, Blampied NM. Motivational interviewing in health settings: a review. *Patient Educ Couns* 2004;53:147–55.

The authors review the techniques used in motivational interviewing, a patient-centered communication strategy to facilitate behavior change. Using motivational interviewing in facilitating behavior change is highlighted, specifically in substance abuse (i.e., alcohol, illicit drugs, and tobacco) and diet and nutrition. The authors call for an increase in controlled studies to evaluate the efficacy of motivational interviewing. The article provides a foundation for pharmacists considering

the use of motivational interviewing techniques in their practice.

6. Cassidy CA. Using the transtheoretical model to facilitate behavior change in patients with chronic illness. *J Am Acad Nurs Pract* 1999;11:281–7.

Although a review of the transtheoretical model of change is provided by the author, the strength of this article is its focus on the application of the model. The model categorizes patients, placing them into one of five stages of change. The use of processes of change based on the stage of patients with chronic illness is then reviewed. For each stage of the model, the appropriate use of the processes of change is discussed, and specific examples are given. The author provides a guide for the use of the stages and processes of change. These guidelines would be useful for pharmacists just beginning to use the transtheoretical model in facilitating behavior change.

7. Chia L, Schlenk EA, Dunbar-Jacob J. Effect of personal and cultural beliefs on medication adherence in the elderly. *Drugs Aging* 2006;23:191–202.

The effect of older adults' personal and cultural beliefs on medication adherence is investigated by the authors. The analysis determines that adherence by older adults (older than 50 years) is influenced by self-efficacy, beliefs regarding drugs, confidence in physicians' knowledge, attitudes toward the use of home remedies and natural products, perceived control, and illness perceptions. Self-reporting is used predominantly in the assessment of adherence, which can limit the interpretation of adherence. Pharmacists should consider the influence of personal and cultural beliefs on medication adherence. Patients' concerns about medication adverse events, tolerance, and addiction can affect drug adherence. Cultural background influences not only the desired relationship between pharmacist and patient (authoritarian vs. collaboration), but also the beliefs regarding chronic illness and its treatment. In addition, self-efficacy, perceived control, and beliefs regarding drugs and home remedies should be part of the discussion between pharmacists and patients.

8. DiMatteo MR. Variations in patients' adherence to medical recommendations: a quantitative review of 50 years of research. *Med Care* 2004;42:200–9.

A meta-analysis of studies pertaining to adherence of medication recommendations from 1948 to 1998 (n=569) was performed. Studies involving military personnel, individuals with substance abuse, homeless individuals, and psychiatric or institutionalized patients were excluded from the analysis. Average nonadherence was about 25% of doses. There was no consistent relationship between demographic variables (e.g., age, sex) and adherence. Higher adherence occurred with more defined recommendations, such as taking a drug, versus multiple recommendations. In addition, individuals with higher education and income were more likely to be adherent. Adherence also was higher in studies of patients with specific disease states, including HIV, arthritis, gastrointestinal disorders, and cancer. Regimen complexity resulted in lower adherence in those with diabetes, pulmonary diseases, and sleeping disorders. Although sex and age are commonly thought to affect adherence, the evidence does not support this assumption. This analysis reveals the factors that are most likely to affect adherence.

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- A meta-analysis of studies pertaining to social support and adherence to medication recommendations from 1948 to 2001 (n=122) was performed. Studies involving military personnel, patients with substance abuse, homeless individuals, and psychiatric or institutionalized patients were excluded from the analysis. Adherence was higher in individuals with higher levels of practical, emotional, and social support. Higher family cohesiveness resulted in higher adherence rates, and higher family discord or conflict resulted in lower adherence rates. Being married and having someone living at home affected adherence positively. Modifying variables to this relationship include age of patient and type of illness. Although marital status and living arrangement influenced adherence rates, functional social support (e.g., practical, emotional, family cohesiveness) had a stronger relationship to adherence rates. This analysis identifies factors that have a positive or negative effect on adherence.
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- The developers of motivational interviewing describe the approach as well as the strategies used in motivational interviewing. Examples and situations are provided to assist the reader in understanding the basic components and strategies of motivational interviewing. Unlike the first edition, the second edition switches the focus from addiction behaviors to behavior change in general. The authors also expand their coverage of motivational interviewing by including additional information on how practitioners can learn to use motivational interviewing. Chapters on the application of motivational interviewing in a variety of settings and populations are included. In addition, the use of motivational interviewing with the transtheoretical model of change is discussed. This book serves as an introduction to motivational interviewing and provides information on how the approach can be used and applied in practice.
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- Using social learning and self-regulation theories as a basis, the authors advocate a collaborative approach to patient care. In this approach, patients take an active role in their care and form a partnership with the pharmacist. The components of this approach include defining problems collaboratively, goal setting and planning, providing self-management training, and active follow-up. This approach is a departure from the traditional paternal approach to patient care and fits in the framework of patient behavioral change. This article provides an introduction to the pharmacist interested in developing a more cooperative and collaborative practice with patients.
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- This report provides a critical review of adherence from a global perspective. The premise of the review is to provide comprehensive information so that countries and pharmacists can take action to promote adherence. Included in the review is a framework for considering adherence, lessons for improving adherence rates, and reviews of adherence to therapy in specific diseases. This resource can be used in a wide range of pharmacy practice settings.