Non-adherence to treatment: A psychological and communications perspective

By Christiane Mayer, B. Pharm, Psychology certificate

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INTRODUCTION
Drug treatment adherence is probably the most daunting challenge today's health professionals face. It can be a source of great concern and frustration. Statistics on non-adherence are alarming. Despite tremendous effort made in recent years to find a solution to the problem, 20% to 80% of patients who are supposed to take medication are non-adherent.1-3 Studies suggest that 50% of patients on long-term therapy are non-adherent after one year.4-7 These high rates of non-adherence can be attributed to the complexity of the phenomenon of adherence. A whole set of interrelated variables—patient cognitive characteristics, behavioural factors, social support and environment-related factors—must be considered in order to understand treatment non-adherence.8

Like smoking cessation, exercising or eating healthy, having to take medication regularly involves a conscious commitment to a new healthy behaviour and requires a change in daily habits. This is how we will approach the idea of treatment adherence in this lesson.

Change is usually difficult for most people. Several psychological approaches may be helpful in intervening with non-adherent patients. These theories, models and methods offer an interesting and innovative conceptual framework.

Ways to improve therapeutic results have been suggested and studied for more than 30 years. Despite these efforts, adherence rates have not improved much, and the situation is especially difficult in the case of drugs used to control chronic, asymptomatic diseases such as hyper-
tension and dyslipidemia.9-11

This article presents theories and models that explain and provide a conceptual framework for the phenomenon of treatment non-adherence.

CAUSES OF NON-ADHERENCE

AIM MODEL

The causes of non-adherence are many and vary according to the individual and his or her personal situation. As many factors may be involved in non-adherence, the better we are at identifying them, the better our chances of offering appropriate corrective measures.10,12

Common causes of non-adherence fall into three categories: those related to ability, information and motivation (“AIM”, see Figure 1).13-15 According to this dynamic model, a patient will adhere to his or her treatment if he or she has the necessary ability, information, motivation.

Information-related obstacles to adherence

A fundamental condition for voluntary treatment adherence behaviour is the patient’s understanding of the treatment.3,11 In some cases, non-adherence stems from the patient’s lack of at least a minimum grasp of the nature of his or her health problem or lack of information about the medication prescribed, its effect, the way to take it or its adverse effects.16 The pharmacist has a role to play in educating the patient in these areas. The pharmacist can complete, correct or reinforce the information the patient already has.

To convey information effectively and intelligibly, the pharmacist must first and foremost adjust his or her language to the level of the patient and build on the knowledge the patient already has.17 It’s really a matter of building a knowledge base, which means starting from what the patient already knows and what he or she wants to know.18 Some patients want to know as much as possible about their disease and its treatment, whereas others only want to know how many pills they have to take each day and when to take them. It has even been demonstrated that when the health professional uses a lot of medical jargon that the patient doesn’t understand, or language that is confusing or too scientific, the patient is even less likely to adhere to the treatment.19,20

However, we now know that ignorance or lack of understanding alone cannot explain treatment non-adherence. There are other factors involved.

<table>
<thead>
<tr>
<th>Information-related causes of non-adherence13,14</th>
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<td>• The patient does not understand or has not been informed about his or her disease and its complications.</td>
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<td>• The patient does not know how long he or she must take the medication.</td>
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<td>• The patient does not know how the medication is to be administered.</td>
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<td>• The patient has not really understood the dosing/how to take the medication.</td>
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<td>• The patient does not know what to do to reduce and to manage adverse effects.</td>
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Motivation-related causes of non-adherence13,14

• The patient doesn’t believe he or she is sick. |
• The patient doesn’t trust the health professional (physician or pharmacist). |
• The patient believes natural products are better than “chemicals.” |
• The patient is afraid of becoming dependent on drugs. |
• The patient doesn’t see the beneficial effects of the treatment. |
• The patient doesn’t believe he/she is susceptible to the complications of the disease. |
• The patient has heard news or media reports that the medication is “dangerous.” |

Ability-related obstacles to adherence

Once the patient has the knowledge and the motivation to follow treatment, the remaining obstacles are practical, relating well as his or her doctor and pharmacist, the patient’s beliefs about the treatment, and his or her fears about the disease and the treatment.

In practice, interventions to solve information or ability-related problems are relatively quick and overwhelmingly successful. Unlike those that are meant to increase a patient’s motivation to take his or her medication regularly, generally take a long time and require building a relationship of trust between the healthcare professional and the patient.

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<th>Ability-related causes of treatment non-adherence13,14</th>
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<td>• The treatment is too complicated (medication has to be taken too often).</td>
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• The patient is unable to swallow the pills, because of the taste or the dosage form. |
• The patient has difficulty getting the medication out of the packaging. |
• The patient has cognitive problems or is forgetful. |
• The patient is experiencing a major adverse effect. |
• The medication is not suited to the patient’s lifestyle. |
• The patient has a physical handicap or motor problem that prevents him or her from using the administration device properly. |
• The patient has too many tablets to take each day. |
The patient as a person

Healthcare professionals must not view the patient as a passive individual who must be taught to blindly follow orders. The patient is a person who, when in contact with the medical world, temporarily takes on the social role of "sick." He or she remains nonetheless a complete person, with attitudes, beliefs, a lifestyle—a unique individual. The ideas and thoughts of this individual have a significant impact on his or her health behaviour. In other words, a patient's personal motivations, what he or she thinks about the disease and the medication, his or her beliefs, play a determinant role in his or her health behaviour, and hence in the extent of his or her adherence to drug therapy.\(^9\)

Of the three components of adherence in the AIM model (ability, information and motivation), motivation is fundamental to changing behaviour.\(^23\) Researchers have turned to psychological theories to try to explain the motivation-related obstacles to adherence. A number of models borrowed from psychology have been used to explain how patients interpret their symptoms and the information given to them about their health. Some of these models show how personal characteristics can interact with social and environmental factors to bring about the desired behaviour. These models also help us gain a better understanding of patients' beliefs about their illness and their plans in the face of a threat to their health.

The most important models relating to adherence are the health belief model (HBM), the theory of planned behaviour, self-efficacy theory and the locus of control theory. These models share the conviction that an individual's attitudes and beliefs are key determinants in making changes.

We will also look at a model that tries to explain how an individual progresses towards a behaviour change he or she is asked to make: the Prochaska and DiClemente model, also called the transtheoretical model of behaviour change.

**HEALTH BELIEF MODEL (HBM)**

The HBM is probably the best known model that attempts to explain health behaviour. It was developed in the 1950s to explain what makes healthy people engage in preventive behaviour, vaccination in particular.\(^2\) According to this model, individuals will choose to adopt behaviour depending on how much they value the goal and their belief that the behaviour will make it possible to achieve the goal. In other words, the key to understanding behaviour is to identify the person's health perceptions and beliefs.\(^9\)

According to this model, individuals' motivation to act depends on the perceived threat to their health and their belief that action will mitigate the threat. Individuals must first be convinced that they are personally susceptible, the disease has serious consequences, the recommended health action will prevent these consequences and the benefits of the new behaviour will outweigh the costs.\(^9,24\) Faced with a threat to their health, individuals evaluate all alternatives that can reduce the threat.\(^9\)

This model is still very current today. Adherence with this model is seen as a preventive health action. Patients will adhere more to treatment if they believe that they are susceptible to a disease they perceive as serious and that the treatment will be effective, provided the benefits outweigh the costs.

**CASE STUDY 1**

John Trent is 50 years old. He has just been diagnosed with hypercholesterolemia. According to the HBM, John's motivation to control his blood cholesterol level will be directly proportional to his perception of the magnitude of the threat to his health. For example, if he believes that hypercholesterolemia will inevitably lead to a heart or circulatory disorder and that such disorders are potentially serious, he will be very motivated to follow treatment.

John believes he has a number of options for controlling his hypercholesterolemia: improved diet, exercise, relaxation, medication, or a new natural product whose benefits he read about in a magazine. John will evaluate each of these therapeutic avenues, consciously or not, and then evaluate the benefits and the costs. "Costs" include both economic costs as well as inconvenience or unpleasantness, such as having to see the doctor, taking medication regularly, going to the hospital for blood tests or an unpleasant adverse effect.

Once we understand all of these factors, it is not surprising that an asymptomatic patient will stop taking lipid-lowering pills that require regularly visiting the doctor and the pharmacist and having blood drawn when the patient doesn't feel any benefit!

**Conclusive studies and treatment adherence**

**The five beliefs necessary for treatment adherence according to the HBM are:**\(^24\)

1. A belief in the value of life and health.
2. A perceived susceptibility to the disease.
3. A belief that the disease can have serious consequences.
4. A belief that the treatment can be effective against these consequences.
5. A belief that the benefits of treatment outweigh its costs.

The HBM has been used successfully to predict the adoption of a large number of preventive health actions, including cancer screening, dental care and diet change.\(^9,10\)

Few studies have attempted to study treatment non-adherence through the lens of the HBM, however. Those that have been conducted have not conclusively demonstrated that the model can unequivocally predict treatment adherence.\(^9\)

The HBM is nonetheless a good model for evaluating a patient's motivation to adhere to drug therapy, though it cannot pre-
dict actual adherence behaviour because daily difficulties involved in long-term behaviour change must also be considered.

### Pharmacist intervention

Though no statistically significant correlation between the combined components of the HBM and drug therapy adherence has been found, intervention by the pharmacist can nonetheless have a positive impact on treatment adherence. The literature demonstrates that such interventions are effective.\(^9\) At the very least, we can identify ways of changing a patient’s perceptions of health issues and thus possibly change the target behaviour.

Among the interventions that can act on the HBM variables are educational initiatives to improve the perceived cost-benefit ratio of the proposed treatment. Information provided should be as realistic as possible; there is no point in minimizing or exaggerating a risk, as the fear or anxiety this might cause can create an emotional barrier that blocks effective reception of the message.

For example, educational interventions to improve patient knowledge and thus increase the perception of the severity of the health problem or the perceived susceptibility can have an impact. This may simply involve the pharmacist taking the time to talk openly with the patient about the disease and its long-term complications.

A patient’s perceived susceptibility can also change over time—if his or her body gives a serious warning (angina, for example) or a family member has a heart attack.

The death of someone close can make people more aware of their own vulnerability, triggering a desire to take medication so they can live longer and complete projects that are important to them.

The pharmacist can also try to identify and diminish possible obstacles to adherence and work to lessen drawbacks—adverse effects or costs, for example. We often hear pharmacists say that they prefer not to talk about adverse effects for fear the patient will perceive them as saying that the medication is dangerous. We often hear that giving information about adverse effects reduces treatment adherence.\(^25\)\(^-\)\(^27\) In addition, studies have not demonstrated that giving information about adverse effects reduces treatment adherence.\(^25\)\(^-\)\(^27\)

### THEORY OF PLANNED BEHAVIOUR (TPB)

The theory of planned behaviour (TPB) also tries to explain what guides human action. Broader than the HBM, the TPB tries to explain any deliberate behaviour, not only health prevention behaviours. The TPB also considers the impact of social pressure on an individual’s behaviour, which the HBM does not.\(^24\)\(^,\)\(^28\)

According to the TPB, human beings make rational and deliberate decisions, and the most important determinant of a person’s behaviour is behaviour intent. If the individual has the intention of being adherent, he or she will be. The individual’s intention to perform a behaviour is determined by three things: attitude toward the behaviour, subjective norm (social) and perceived behavioural control (self-efficacy) (see Figure 2).

### Attitude toward the behaviour

An individual’s attitude toward a behaviour is the degree to which performance of the behaviour is positively or negatively perceived. It is determined by the total set of behavioural beliefs. For example, if a patient believes that taking medication will cause more harm than good, then the attitude towards the behaviour will be negative.

Some patients who believe drugs are poisonous chemicals have a negative attitude when medication is recommended. The same is true of a mother who believes that antibiotics will compromise her child’s immune system. Under these circumstances, the mother likely will have no intention of giving antibiotics to her child.

### Subjective norm

The second determinant of intention is based on beliefs about what people who are significant to the individual (e.g., parents, friends, colleagues, health professionals) think about the behaviour to be changed. This is social pressure. Intention to perform a behaviour is thus affected by the health beliefs of people who are influential in the life of the individual. For example, if a patient believes his wife will disapprove of a decision to take antidepressants, he may demonstrate an intention to not take them and try to manage without medication.

### Perceived behavioural control

The third determinant of intention is the individual’s perception of his or her ability to perform a given behaviour. This idea of self-efficacy arises repeatedly in the models...
described in this paper. The greater the patient’s confidence in his or her ability to succeed, the more powerful this determinant is in bringing about the behaviour change.

Looking at the patient in our case study, John Trent, from the perspective of this model, we might add that if he perceives that significant members of his family and his social circle strongly believe hypercholesterolemia is a serious disease and would disapprove of a decision to reject treatment, he will be much more likely to take concrete action to deal with his disorder.

**Conclusive studies and treatment adherence**

A study by Lennon and colleagues (2001) was designed to identify psychosocial factors that influence patient adherence with antihypertensive medication. The study validated the efficacy of the TPB in predicting treatment adherence, demonstrating that intention to comply with a medication regimen is a good predictor of treatment adherence behaviour. The study also showed that intention to comply correlates significantly with a positive attitude towards taking medication, perceived pressure from significant others to take medication and perceived behavioural control.

**Pharmacist intervention**

To become one of the people who can influence the decision to take the medication as prescribed, pharmacists must first build a relationship of trust with the patient. The pharmacist must also convey information in a way that tries to change health beliefs that might have a negative impact on the patient’s attitude—by emphasizing the benefits of a therapy, for example, and trying to mitigate the negative effects. The pharmacist must also listen very carefully to what patients say about their health beliefs and reframe their negative beliefs (i.e., correct any misinformation). In terms of self-efficacy, the pharmacist can encourage success by suggesting small attainable goals, providing follow-up and giving constructive feedback. The objective is for patients to have a positive perception and be convinced of their ability to succeed in making the desired change.

**LOCUS OF CONTROL THEORY**

The locus of control theory postulates that individuals differ in the way they perceive the control they have over events in their lives. Two major types of locus of control have been studied: internal and external.

People with an internal locus of control believe that their actions determine what happens to them. In other words, they are responsible for their successes as well as their failures. People with an external locus of control, on the other hand, believe that what happens to them is completely independent of what they do and can be attributed to circumstances, luck or fate.

Applied to the field of health, this theory maintains that patients’ actions are based on the degree of control they believe they have over what happens to them. People with an internal locus of control believe their actions can affect the course of a disease and the therapeutic results. For example, a diabetic, who believes that the steps he or she takes with regard to the disease will reduce its long-term complications will be more inclined to check his or her blood glucose regularly and monitor his or her disease more closely.

Individuals with an external locus of control believe they have little control over the course of events and that their health is determined by heredity, luck, age or an influential person (a health professional, for example). The diabetic who believes “the die has been cast” or “what will be, will be” will probably be less motivated to take charge of his or her diabetes.

According to this theory, individuals with an internal locus of control are more likely to follow prescribed drug therapy as they believe that their behaviour affects the therapeutic outcome to some extent.

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**The patient with an internal locus of control says:**

- “Tell me what I have to do and I’ll do it.”
- “Can you suggest something I can read, so I can learn what I have to do?”
- “Just do what you have to do!”

**The patient with an external locus of control says:**

- “Tell my wife what I have to do; she’s the one who manages my medications.”
- “If God wants me to get better, I’ll get better.”
- “At my age it’s normal to be sick. You have to let nature take its course.”

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**Conclusive studies and treatment adherence**

Research to establish a relationship between locus of control and health tends to demonstrate that the theory is much more complex than first believed. Though some studies show a positive association between an internal locus of control and better drug therapy adherence, others were not able to show this link.

To explain the apparently contradictory results, it has been suggested that internal locus of control is only a small part of a larger construct that also includes the person’s capability of implementing health-promoting behaviour. Locus of control alone cannot definitively predict a health behaviour. In addition, other studies have demonstrated treatment adherence predictions are more accurate when both locus of control theory and self-efficacy theory are used.

Kaplan demonstrated an excellent adherence rate in cases of a strong internal locus of control coupled with strong perceived self-efficacy.

Also, the interventions generally advocated in these studies target people who have an internal locus of control. Some authors believe that people with an external locus of control react negatively to interventions that promote autonomy and accountability.
Pharmacist intervention

To determine whether a patient has an internal or external locus of control, the pharmacist can ask open questions, such as “What do you think of all these changes that you have to make?”

Individual or group educational interventions seem especially effective with patients who have an internal locus of control. Health professionals would do well to involve patients with an internal locus of control in their therapy. However, long-term treatment adherence cannot be guaranteed just by the fact that a patient has an internal locus of control. The pharmacist must also work to increase self-efficacy and ensure there is adequate social support for patients under long-term therapy (educational or support groups, adequate family support).

For patients who have an external locus of control, the pharmacist might focus less on personal responsibility for change and more on helping the patient to access outside expertise and resources to support change.

SELF-EFFICACY MODEL

This theory postulates that we all have our own perception of our ability or inability to adopt a particular behaviour. Self-efficacy, then, is an individual’s confidence in his or her ability to adopt a specific behaviour.

How can the pharmacist increase self-efficacy?

- Involve the patient in choosing therapeutic objectives.
- Involve the patient in choosing methods to be used.
- Make sure the patient sets small, realistic goals.
- Provide follow-up and constructive feedback.

People’s beliefs about their efficacy are affected by different factors: personal experience and the experiences of others (successes or failures), persuasion, observation of others who have succeeded and the emotional and somatic states caused by the disease.

For example, according to this theory, individuals are more likely to try to stop smoking if the following apply:

1. It is expressly recommended by their doctor.
2. They have seen other people in their social circle successfully quit.
3. They have tried to quit in the past.
4. They believe they have the tools and the ability to manage the physical symptoms of quitting smoking.

Conclusive studies and treatment adherence

Studies demonstrating a link between self-efficacy and treatment adherence are unequivocal and consistent. A study by Tall et al (1993) demonstrated an increase in treatment adherence rate following an educational initiative with arthritic patients that was designed to promote self-efficacy and took into account emotional states caused by the disease. Another study, with HIV-positive patients, demonstrated similar results. In the latter study, three types of individualized interventions to promote self-efficacy were used: exchange of information, development of self-management skills and strategies, and discussion of available support.

Pharmacist intervention

The self-efficacy theory teaches us that one way to improve treatment adherence is to improve a patient’s perceived self-efficacy. Patients must be convinced that they have the knowledge and skills required to successfully follow a treatment plan. Educational initiatives must be designed to give the patients full confidence in their ability to succeed. Pharmacists typically provide information about the nature and consequences of a disease but rarely work on implementing an action plan, solving problems that patients encounter and evaluating the results of efforts made.

Taking into account patients’ objectives, preferences and abilities in establishing a contract can be a major source of patient self-efficacy. For example, pharmacists can work with patients to determine an action plan, starting by setting small goals and

| Characteristics of the stages of behaviour change^{41} |
|-----------------|--------------------------------------------------|
| **Stage**       | **Characteristics**                              |
| Pre-contemplation| Individuals in this stage have no intention of changing their behaviour or are unaware of the problem. |
|                 | “I don’t see why I should start taking this medication.” |
|                 | “The doctor is making a mountain out of a molehill.” |
|                 | “You know how doctors are!”                      |
| Contemplation    | In the contemplation stage, patients know they should change their behaviour and have started to think about it. However, they are not yet ready to change. People can stay in this stage for a very long time and never move forward to other stages. |
|                 | In this stage, patients are more open to receiving information and talking about change than in the pre-contemplation stage. |
|                 | “It seems to me that I’m not all that sick.”     |
|                 | “I don’t know if I have the energy for all that effort.” |
| Preparation      | In the preparation stage, patients are beginning to seriously consider changing their behaviour. Often, they will even start testing the waters, taking a few small concrete steps. |
|                 | “I’m going to try.”                               |
|                 | “I think I can do it.”                            |
|                 | “If I don’t try, I’ll never know.”               |
| Action           | Patients are in the action stage when they make a commitment to change their behaviour. Only an estimated 10% to 15% of patients are in the action stage at the time a behaviour change is asked of them. |
|                 | In this stage, patients have adopted new behaviour and are making a willing effort to maintain it. The change has been made, but it is still not entrenched. |
| Maintenance      | In this stage, patients have adopted new behaviour and this behaviour has become a new habit that demands less effort than during the action stage. Patients continue their efforts to maintain the new behaviour change. |
asking patients if they think these goals can be achieved. ("Where do you want to start? Would you like to discuss it?" “Could we agree that you will try it out for a week, and then we’ll re-evaluate?”) It is important to make sure that the goal can be achieved, as this will become a major source of self-efficacy. Follow up to evaluate the efficacy of the plan and offer constructive feedback.

Pharmacists can also improve self-efficacy by helping patients find a role model (another patient who can serve as an example). Participation in support groups and group training offers patients an opportunity to identify a role model.

**TRANSTHEORETICAL MODEL OF BEHAVIOUR CHANGE (STAGES OF CHANGE MODEL OR PROCHASKA AND DI CLEMENTE MODEL)**

This model has a number of features, the most well known being the five stages of change through which people must pass before taking action and achieving a long-term change in behaviour.24,41 This model was first studied in patients dealing with alcohol abuse. Since then, it has been applied to other situations: smoking cessation, weight loss, safe sex, diet, exercise and adherence to medical advice.41,42 The table on page 6 outlines the different stages.

During the first stage (pre-contemplation), the patient is not even aware that a change should be contemplated. During the second and third stage (contemplation and preparation), the patient weighs the pros and cons of changing his or her behaviour. Ambivalence is normal in these stages. In the last two stages (action and maintenance) ambivalence is less present, and the patient works to implement his or her change plan.41,42

In reality, it is difficult to tell exactly when an individual moves from one stage to the next. Also, the progression is not linear.24,43 Rather, the five stages should be viewed as a continuum along which an individual travels, with movement back and forth between one stage and another.24,43 Movement is generally slow and gradual; an individual will not move from pre-contemplation to action in a single step. Therefore, the role of the health professional is to foster the patient’s progress through these stages of change, to encourage movement from pre-contemplation to contemplation, then to preparation, then to action and finally to maintenance. Although relapse is not a stage of the Prochaska model, it is an integral part of change. Relapse should be positively reframed to the patient experiencing discouragement from past failed attempts (see Figure 3).

There is no consensus regarding the stages of change model.43,44 In terms of its application to treatment adherence, some authors claim that stage of change is a strong predictor of treatment adherence, whereas others believe that intention is a better measure.24,44 Although this model is not perfect, health professionals find it attractive because it helps them locate where a patient is in the process of behaviour change and to identify progress.

The most interesting part of the Prochaska model is the notion of ambivalence. Patients are generally ambivalent about changing their behaviour, and starting to take medication on a regular long-term basis is no different from other changes.41,45 We cannot accordingly assume that every patient who comes to our pharmacy with a prescription for drugs to be taken long-term intends to follow our instructions to the letter.

According to this model, when asked to adopt a new behaviour, individuals will first weigh the pros and cons. On the one side are the benefits of adopting the new behaviour and the drawbacks of continuing the way things are. On the other side are the drawbacks of the change and the benefits of the status quo.41 These pros and cons are directly related to the stage of behaviour change. An individual’s decision to move from one stage to the next is based on the relative weight of the pros (reasons to change) compared to the cons (reasons not to change).41 For example, when a person moves from pre-contemplation towards preparation, the weight of the drawbacks diminish and that of the benefits increase.

**CASE STUDY 2**

Daniel Fiore is 51 years old and has just learned that he has type 2 diabetes. Until his doctor discovered by chance a type 2 diabetes, he was in generally good physical shape, but he enjoys a good steak and fine wine, prefers cultural to athletic activities and has a bit of a sweet tooth.

His doctor told Daniel he has to change certain behaviours, including eating a more balanced diet with less fat, reducing the desserts that he enjoys so much, taking medication three times a day, measuring his blood glucose regularly, exercising and stopping smoking.

On the one hand, Daniel knows that he must control his diabetes, but he also really enjoys the life he currently leads. All of these changes will have a tremendous impact on his lifestyle. On the other hand, he knows the complications of diabetes. His father and his brother both have diabetes and have had serious complications, including vision loss and heart disease.

At this point, having just received the diagnosis, Daniel is ambivalent. A motivational interview can be used to help Daniel resolve the ambivalence and move to the next stage.41,45

**MOTIVATIONAL INTERVIEWING**

Motivational interviewing is a patient-centred, directive method of communication. It enhances intrinsic motivation to change by helping patients tip the decisional balance scales towards change through exploring and resolving ambivalence; each person must find his or her own motivation for behaviour change. Motivational interviewing fosters the patient’s move from one stage of change to the next.41,42,45 It is particularly helpful in the pre-contemplation and contemplation stages. The pharmacist’s intervention can positively or negatively impact an individual’s progress through the stages of change.

The motivational interview is a collaborative approach that encourages patients to express themselves and respects their autonomy and freedom of choice regarding their behaviour.41,45 Approaches based on education, confrontation or authority are the conceptual opposite of motivational interviewing.
Motivational interventions don’t necessarily have to be much longer than information-giving interventions. Even short interventions of 5–10 minutes can be effective.45-47

The four general principles behind motivational interviewing are:

1) Express empathy

Expressing empathy and acceptance is the most important thing you can do with an ambivalent patient, as this facilitates change. Ambivalence is normal. Reflective listening is fundamental: listen empathetically, non-judgmentally, reflect, reformulate and summarize to ensure you have really understood the reasons for the ambivalence so you can help the patient explore it. Open-ended questions are preferred over closed-ended questions.

2) Develop discrepancy

Help the patient examine the discrepancy between current behaviour and future goals. Ask the patient: “What would have to happen for you to start taking your medication regularly?” or “If I were to hand you an envelope, what would the message inside have to say to convince you of the importance of taking your medication regularly?”

Perception and, above all, articulation of the discrepancy motivate change. The pharmacist must encourage the patient to elaborate on the discrepancy rather than try to convince or persuade him or her to change, which often provokes the opposite effect. Developing discrepancy is different from arguing. Simply stated, arguing with a patient will destroy the confidence you try to build.

3) Roll with resistance

Although difficult, pharmacists must recognize resistance and accept it without argument.48 Pharmacists must pay careful attention to their own behaviour when confronted with resistance, and must resist the temptation to persuade, confront, make suggestions or warn the patient.

Beware of using such phrases as “You’re just looking for trouble if you continue like this,” “Why don’t you try at least one of the four medications,” or “Yes, but …” These types of remarks go against the very spirit of motivational interviewing.41,48

How should you react when you sense resistance? Resistance is a sign that you must switch to an empathetic rather than an informational approach. Express empathy by using open-ended questions, reflective responses (reframe, reflect) and listening.

4) Support self-efficacy

The pharmacist must help patients develop a belief that they can make a change. However, the pharmacist leaves it to the patients to determine their goals and holds them responsible for choosing and carrying out actions to change. Past successes can be used as encouragement.

Conclusive studies and treatment adherence

The efficacy of motivational interviewing has been clearly demonstrated in treatments for alcohol abuse.41,45 Researchers have also found it to be effective for promoting patient weight loss and diet changes.41,45,49

To date, there have been no studies specifically in the field of pharmacy looking at the effect of motivational interviewing on drug treatment adherence. Recent studies investigated the impact of motivational interviewing on medication-taking; however, the interviewers were trained nurses or specialized counsellors.42,50 Results of these studies were significant, but the study populations were very small. Other studies on adherence to medical and health recommendations tend to
demonstrate that interventions based on this model are effective.41,49,51

In summary, motivational interviewing seems to be a very promising avenue. Additional research is required to gain a better understanding of its impact, the elements to emphasize and the key factors for success.52,45

Pharmacist intervention
Should a pharmacist insist on giving patients information to convince them to change their behaviour? Clearly, the pharmacist has a responsibility to provide information about medications and treatments prescribed. However, ambivalence is a signal for the pharmacist to also work on the patient’s motivation, rather than employing strategies designed solely to convey information. In such cases, the information will be much better received if the pharmacist first asks for the patient’s “permission” or authorization to provide information (e.g., “Could I suggest something.“ “Would you like to know more about this subject?” or “You’re not convinced that this applies to your situation. Could we talk about it?”).

In motivational interviewing, the pharmacist must use the general concept of “ask-provide-ask.” Information is first elicited from the patient; use open-ended questions to get a sense of the patient’s feelings about the disease and its treatment (e.g., “What do you think about your high blood pressure?”). After infor-

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Continued on page 10
**Motivational interview (continued)**

<table>
<thead>
<tr>
<th>Phm</th>
<th>“What might get you to take your medication regularly?”</th>
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<tbody>
<tr>
<td>Pt</td>
<td>“I don’t know ….. I’ll have to think about that.”</td>
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<tr>
<td>Phm</td>
<td>“Could I suggest something?”</td>
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<td></td>
<td>In the spirit of motivational interviewing, it is</td>
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<td></td>
<td>important to ask for permission to give</td>
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<td></td>
<td>information or make suggestions.</td>
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<tr>
<td>Pt</td>
<td>“Yes, you can always try ….”</td>
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<tr>
<td>Phm</td>
<td>“I have some information here about the different</td>
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<td></td>
<td>health problems you’ve just been telling me about.</td>
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<td></td>
<td>You might take a look at it between now and your</td>
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<tr>
<td></td>
<td>next visit, and then we could talk some more.”</td>
</tr>
<tr>
<td>Pt</td>
<td>“Yes, I could try to do that …”</td>
</tr>
<tr>
<td>Phm</td>
<td>“Great. Have a good day, Mr. Brown.”</td>
</tr>
<tr>
<td>Pt</td>
<td>“Thank you. You have a good day too.”</td>
</tr>
</tbody>
</table>

Information is elicited, the pharmacist can then provide information to resolve any discrepancy. Then, the pharmacist can again elicit information to determine any new concerns the patient may have after hearing about the medication (e.g., “Do you think you can do this?” “What are your thoughts now?”).

All health professionals can benefit from understanding the philosophy and the basic principles of motivational interviewing, so they will be better equipped to help patients with the change process. Motivational interviewing is very helpful, as it allows the pharmacist to explore a patient’s understanding and concerns. It is an approach based on effective management of resistance to change and the support required to help patients progress in the change process.

In examining his record, the pharmacist notes the following:

- He is 15 days late in renewing his glyburide and metformin.
- The record shows he also takes atorvastatin 10 mg, lisinopril 10 mg and ASA 80 mg. These three medications are due for renewal today.

**SUMMARY**

Pharmacist intervention to improve treatment adherence is no easy matter. In addition to a good knowledge of drug therapy, the pharmacist also needs a biopsychosocial understanding of the individual. Any information a pharmacist provides is incorporated into a whole mental network of the individual and subjective representations specific to that particular patient. Information alone will not motivate a patient or change attitudes.

We must also remember that interventions are equally important whether dispensing a new drug or renewing a prescription. A new treatment is a unique opportunity to identify patients who may not take their medication as recommended. Open-ended questions to identify a patient’s beliefs can be very effective. For example:

- “What do you think about having to take this medication?”
- “What do you know about your condition?”
- “What do you think about the fact that the doctor prescribed this medication for you?”
- “What did the doctor explain to you? What do you think about it?”

Based on the models outlined above, the following strategies are likely to be successful:

1) **Educational interventions**

Treatment adherence may be improved if the patient has a good understanding of the disease and its treatment. It is also important to consider improving patients’ perceptions of the threat posed by the disease and emphasizing the benefits of the therapy. This could be a matter of teaching patients self-monitoring skills, so they can see the efficacy of the medication in concrete terms. Restructuring of certain health beliefs should also be considered in cases of misconceptions that are negatively affecting treatment adherence.

2) **Interventions to increase self-efficacy**

Self-efficacy is another important target of patient education. Confidence in one’s ability to succeed is an extremely important factor, and the effectiveness of self-efficacy-based interventions has been clearly demonstrated. The pharmacist’s role is to encourage patients to set their own goals, make sure these goals are realistic and help the patients develop and implement appropriate action plans.

3) **Effective communication between pharmacist and patient**

In the traditional model of patient-pharmacist communication, the role of the expert pharmacist is to encourage the passive patient to comply with the doctor’s orders. The patient can choose to cooperate or not to cooperate. A more effective model is to consider the patient as an individual with a complex agenda taking an active part in decisions about his or her health. Instead of accepting everything the professionals suggest, the individual alters the recommended treatments depending on what is important to him or her. The pharmacist’s role is to listen to the patient’s concerns and broach psychosocial issues, such as health beliefs, fears and attitudes. It has been clearly demonstrated that the quality of physician-patient communication affects treatment adherence, so why would it be any different for pharmacist-patient communication?
Non-adherence to drug therapy is a huge concern for health professionals. The impact on the individual and on society as a whole is tremendous, and merits our attention. As demonstrated, there are a number of closely related cognitive, psychological and social factors that affect treatment adherence, and this is why a multi-pronged (cognitive, affective and behavioural), individualized approach is recommended.

The psychological models presented in this lesson should be viewed more as a way of refining our understanding than as ends in themselves. It is, however, crucial to understand the impact of all of these factors as determinants in drug treatment non-adherence and to take necessary measures to implement new strategies to deal with the new discoveries.

The pharmacist is the health professional who is most easily accessible and most available to patients and plays a key role in optimizing favourable health behaviour. The AIM intervention model is easy and simple to master. By actively searching for the probable cause of treatment non-adherence, the pharmacist can target the intervention in each situation.

In addition, if pharmacists invest in better treatment adherence, they can expect better therapeutic results, fewer adverse effects and less health risk for the patient.

This lesson was reviewed by Melanie Rantucci, M.ScPhm, PhD, RPh in BC and Nora MacLeod-Glover R.Ph., B.Sc.(Pharm). Special thanks to Jean-Marc Assaad, PhD, Dr. Assaad, clinical psychologist and Motivational Interviewing expert, is the Director of the Corporate Smoking Cessation Program at the McGill University Health Centre, in affiliation with the Royal Victoria Hospital and the Montreal Chest Institute.

REFERENCES
15. Richard C, Lussier MT, eds. La communication professionnelle en santé. Éditions du Renouveau Pédagogique Inc., 2005
1. Which cause of non-adherence is NOT related to “ability?”
   a) forgetfulness
   b) complex dosing
   c) prefers natural products
   d) bothersome adverse effect

2. Which cause of non-adherence is NOT related to “motivation”?
   a) does not believe the medication will be effective
   b) denies the disease
   c) does not have confidence in his or her doctor
   d) does not understand the nature of his or her disease

3. One solution for treating non-adherence is to dispense medications in a pill organizer. This approach will probably be effective if the cause of non-adherence is related to:
   a) information
   b) motivation
   c) ability
   d) none of the above

4. All of the following strategies EXCEPT ONE are potentially effective in improving treatment adherence and should be used at every meeting. Which strategy is the EXCEPTION?
   a) Communicate verbally and respectfully with the patient.
   b) Support self-efficacy.
   c) Automatically give new information every time the patient comes into the pharmacy.
   d) Ask open-ended questions to learn more about the patient.

5. The information that a pharmacist gives to the patient about the medication and the disease ensures that the patient will adhere to the drug therapy.
   a) True
   b) False

6. Which statement about the Health Belief Model (HBM) is FALSE?
   a) Treatment adherence depends on the patient's belief that he or she is susceptible to the disease.
   b) The patient consciously or unconsciously weighs the pros and cons of each alternative and makes a logical decision based on this analysis.
   c) Treatment adherence depends, among other things, on the patient's belief that the medication will be effective in reducing complications.
   d) The health professional’s opinion has a major impact on the patient’s decision to take or not to take his or her medication.

7. Which possible cause of treatment non-adherence generally requires long-term intervention?
   a) ability
   b) information
   c) motivation
   d) all of the above

8. According to the theory of planned behaviour, intention to be adherent is a good predictor of adherence.
   a) True
   b) False

9. According to the theory of planned behaviour, a health professional with whom the patient forges a relationship of trust becomes an influential person in terms of treatment adherence.
   a) True
   b) False

10. According to the Health Belief Model (HBM), what are considered "costs" in weighing the pros and cons of a behaviour change?
    a) financial cost
    b) unpleasant adverse effect
    c) incompatibility with lifestyle
    d) having to see the doctor on a regular basis
    e) all of the above

11. Tim Kreviak has recently been diagnosed with type 2 diabetes. He has already purchased several books on the topic, monitors his blood glucose daily, plots the results on a chart and has made an appointment with a nutritionist. In all probability, Tim has an... 
    a) internal locus of control
    b) external locus of control

12. There is a consensus within the scientific community on which of the following theories as a predictor of treatment adherence.
    a) HBM
    b) theory of planned behaviour
    c) self-efficacy theory
    d) locus of control

13. Which pharmacist intervention(s) is supported by the Health Belief Model?
    a) Inform the patient about the long-term consequences of the disease.
    b) Give the patient an information sheet explaining the progression of the disease.
    c) Offer tips to mitigate adverse effects.
    d) All of the above

14. According to the theory of planned behaviour, a positive attitude about medication is a positive determinant in treatment adherence.
    a) True
    b) False

15. Which statement is a typical sign of resistance?
    a) The patient asks you questions about the disease.
    b) The patient listens carefully to what you are saying and asks you to repeat certain things to make sure he or she has understood them properly.
    c) The patient interrupts you and asks how much the medication costs.
    d) The patient expresses worry about the consequences of the disease.

16. Which statement about motivational interviewing is FALSE?
    a) The pharmacist must try to convince and persuade the patient at any cost to get him or her to take the medication.
    b) It is helpful in getting the patient to move through the stages of change, from pre-contemplation to action.
    c) It promotes patient autonomy and freedom of choice.
    d) It is not necessary for an intervention to take a lot of time to be effective.

17. Instruction in self-monitoring of blood pressure and development of a personalized asthma intervention plan are two examples of the application of which theory?
    a) locus of control
    b) self-efficacy
    c) Health Benefit Model
    d) theory of planned behaviour

18. The belief that one's health can be controlled by taking concrete action is a key element in the theory of planned behaviour.
    a) True
    b) False

19. The transtheoretical model of change postulates five stages of change. In which of these stages is there the most ambivalence?
    a) pre-contemplation
    b) contemplation
    c) action
    d) preparation
    e) maintenance

20. According to the transtheoretical model of behaviour change, the professional’s role is to get the patient to move to the next stage.
    a) True
    b) False

FACULTY:

About the author
Christiane Mayer is a part-time lecturer on communication skills for pharmacists at the University of Montreal's Faculty of Pharmacy. She frequently speaks and writes on the topic of patient non-adherence to treatment. She is also a pharmacy consultant in community practice re-engineering and a professional continuing education consultant.

Reviewers
All lessons are reviewed by pharmacists for accuracy, currency and relevance to current pharmacy practice.

Continuing Education Project Manager
Sheila McGovern, Toronto, Ont.

For information about CE marking, please contact Mayra Ramos at (416) 764-3879, fax (416) 764-3937 or mayra.ramos@rci.rogers.com. No part of this CE lesson may be reproduced, in whole or in part, without the written permission of the publisher. © 2007
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Mayra Ramos
Fax: (416) 764-3937 or
email: mayra.ramos@rci.rogers.com

Quebec Pharmacie and L’actualite Pharmaceutique
Stephane Paradis
Fax: (514) 843-2183
email: stephane.paradis@rci.rogers.com