

# Adherence to treatment in diabetes: A journey towards health promoting behaviour

Lucy Shapiro

## Article points

1. Non-adherence to treatment is a problem on a national scale, which is also encountered by individual practitioners in their everyday work.
2. Raising awareness of the importance of psychological issues in the care of people with diabetes, showing how these issues have the potential to stimulate or prevent health promoting behaviour in their patients, may be invaluable to health professionals.
3. Formal use of psychological models could help to establish better patient–practitioner relationships, as they allow the DSN a better understanding of the patient's views.

## Key words

- Health belief model
- Behavioural change model
- Patient–practitioner relationship

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Diabetes is associated with high rates of morbidity and mortality. It is possible to arrest disease progression, if patients follow their individual recommended care plans; many, however, find it difficult to do so. This case-study based review examines how positive relationships between the patient and a specialized diabetes nurse, as well as with other multidisciplinary team (MDT) members can improve adherence to treatment. Whether behaviour change and health belief models are useful tools in this process is also investigated. Discussion is also focussed on how the formal implementation of these treatment modalities, in combination with the additional provision of psychological services might offer the necessary support for people with diabetes in their journey towards health promoting behaviour.

Diabetes is a chronic disease with a prevalence of 3.5% in the UK (Diabetes UK, 2007); the incidence of diabetes is rising, making it one of the major health problems facing the nation. Diabetes' progression can be arrested by adequate glycaemic control (Funnell, 2000); but, unfortunately, people with diabetes often do not follow their prescribed glucose-lowering regimen. Considering that 95% of diabetes treatment is by 'self care' (Funnell, 2004), non-adherence to treatment results in significant increase of the condition's progression, higher costs to the health care system, and frustration in both patients and care providers. Non-adherence to treatment is a problem on a

national scale, which is also encountered by individual practitioners in their everyday work. This article will outline the factors that can improve patient adherence to treatment, such as improved relationships and efforts by the MDT members.

## The patient–practitioner relationship

A good, trusting relationship between the diabetes patient and their health professional is essential for the patient's maintaining a positive attitude to treatment, and thus can improve adherence to the prescribed treatment regimen, which in turn might result in improved glycaemic control (Delamater, 2006). In this author's experience, both clinicians and patients have

voiced the opinion that adherence to treatment is more likely if the health professional shows respect to their patient and allows them to take the lead, while providing the expertise and support they need. This balance also ensures that the patient controls the pace at which the treatment consultation is conducted, which can reduce the chance of misunderstanding; a known contributing factor to poor adherence (Adolffson et al, 2008; Ary et al, 1986). Research has shown that patients who made their treatment plans themselves, assisted by a clinician's advice and support, are much more likely to adhere to the treatment regimen prescribed compared with patients who were required to follow a regimen compiled for them without their own input (Koenigsberg, 2004).

Below are a few helpful approaches, compiled through this author's own experience and personal communications; these recommendations have been useful to help build rapport with patients and encourage them to take control of their diabetes.

- Actively listen to the patient's concerns and wishes.
- Encourage the patient to talk about their views on diabetes and its treatment.
- Empathise with and show the patient respect.
- Lead the consultation at the patient's pace.
- Provide information in a clear, easy-to-understand manner.
- Always offer the patient an opportunity to come back or phone if they have got any concerns or questions.

Four models of patient-practitioner relationship options

have been described, including the following: practitioner-centred, patient-centred, consumerist, and default (Meichenbaum, 1987). Of these, the practitioner- and patient-centred relationships are the main types used in practice in the UK (Funnell, 2000). Traditionally, health care providers have been perceived as superiors who give instructions, and to which the patient is expected to conform. This approach promotes the concept of compliance, which is "the extent to which a person's behaviour coincides with medical advice" (Haynes, 1979; Williams, 1998; Delamater, 2006). It follows that using this approach places patients in a passive, unequal role in relation to their care providers. This approach might, perhaps, be considered appropriate in an acute medical setting where the dominance of the medical professional is justified by the gravity of the patient's illness; however, this approach has proven itself futile when dealing with chronic conditions in which control over the 'disease' and its management lies predominately with the patient themselves. This attitude might increase the perception that the patient's autonomy has been taken away from them, and some healthcare professionals have expressed the opinion that this approach may be seen as unethical.

The newly adopted approach to the patient-practitioner relationship focuses on the patients and their needs, with the healthcare professional adopting the role of an expert advisor rather than the traditional role of decision-maker. In this author's experience, this relationship format is most

**Page points**

1. Although the DSN is the patient's main contact, diabetes is a multi-system condition which requires efficient liaison between a number of health care providers, each of whom has a distinct niche in diabetes care (Vivian, 2007).
2. Unfortunately, with so many team members involved in the treatment of a single patient, communication can be a problem, and in some cases might lead to the late presentation of complications, as witnessed in practice by this author on many occasions.
3. Using the correct patient approach as early as possible in order to detect the patient's attitude towards clinical care can, therefore, be an invaluable means of achieving the best possible care.
4. Progression towards the ultimate goal may not necessarily be linear, patients may present at any level, and stepping backward can also occur (Janz, 1984).

frequently utilized by the majority of health professionals working with people with diabetes, and is based around the concept of adherence which is defined as "active, voluntary, and collaborative involvement of the patient in a mutually acceptable course of behaviour to produce a therapeutic result" (Haynes, 1979). This approach has a number of advantages; it helps to establish a positive, supporting and trusting relationship with the patient, who is given the role of a partner rather than that of a passive receiver of health services. This approach also incorporates the assessment of the patients' views on their 'disease' and treatment, and involves them in decision-making. Data from a recent study has shown that vertical relationships, learning by compliance, and external control all limit patients' ability to assume responsibility for their condition (Adolfsson, 2008). Conversely, horizontal relationships, participatory learning and self-control contributed to strengthening patients' ability to influence, and be actively involved in their own care.

**Role of the MDT**

Treatment of patients with diabetes is most effective when carried out within the framework of continuity of care, which is simultaneously centred around the patient's needs. Although the DSN is the patient's main contact, diabetes is a multi-system condition which requires efficient liaison between a number of health care providers, each of whom has a distinct niche in diabetes care (Vivian, 2007). The specialist nurse provides overall support for the patient, performs regular checks, and refers the patient to the relevant specialist when appropriate; specialists involved in diabetes care can include, but are by no means limited to the following: the dietitian, who consults with the patient about healthy eating; the podiatrist, who provides foot care; and the optician, who screens for eye disease within the framework of the English National Screening Programme for Diabetic Retinopathy or following an

individual referral. Alongside their specific roles, all carers involved in diabetes should provide education, encouragement, and address common hurdles that prevent patients achieving optimal glycaemic control. Unfortunately, with so many team members involved in the treatment of a single patient, communication can be a problem, and in some cases might lead to the late presentation of complications, as witnessed in practice by this author on many occasions.

Monitoring patient progress is further complicated by patients who do not attend their appointments. Among the other reasons for non-attendance such as mobility difficulties or forgetfulness, some patients miss their appointments because they have had a discouraging experience of a patient-practitioner relationship in the past, they may not recognise the seriousness of their condition, or may not see how health care providers could help them. (Delamater, 2006). Early detection of the patients who may be reluctant to attend clinical appointments would potentially improve their care, as their initial assessment could be performed with application of the psychological models discussed below. Using the correct patient approach as early as possible in order to detect the patient's attitude towards clinical care can, therefore, be an invaluable means of achieving the best possible care.

**Facilitating behavioural change**

As patients' health promoting behaviour is an absolute requirement for good glycaemic control, all members of the MDT should seek to encourage it. Prochaska et al (1992) suggested a model of facilitating behavioural change that has been successfully implemented in alcohol and smoking cessation programmes (See *Figure 1*). Progression towards the ultimate goal may not necessarily be linear, patients may present at any level, and stepping backward can also occur (Janz, 1984).

Page points

1. A patient at the precontemplation stage is not even considering changing. They may be in denial about the seriousness of diabetes or might believe that they are unable to deal with certain parts of their treatment due to underlying circumstances.
2. A person in the contemplation stage of behavioural change is aware of the risks associated with their behaviour, but is ambivalent about changing and measures the benefits of change versus costs or barriers.

A patient at the precontemplation stage is not even considering changing. They may be in denial about the seriousness of diabetes or might believe that they are unable to deal with certain parts of their treatment due to underlying circumstances. For example, patients in the precontemplation stage struggling to lose weight might believe that their efforts to lose weight are useless because “everybody in my family is big – it’s just our build”. Patients in the precontemplation stage often do not attend the clinics and may be difficult to engage in health promoting behaviour. At this stage, a useful means of intervention would be education on the risks versus benefits of nonadherence to treatment and the positive outcomes related to change.

Case 1

*A 50-year-old male with type 1 diabetes was admitted to the accident and emergency department with severe vomiting and confusion. Patient history details revealed that he smoked 40 cigarettes per day, drank 70 units of alcohol per week and had undergone two recent ‘binges’, did not take his insulin for the last three days, and*

*had four recent admissions to hospital with diabetic ketoacidosis (DKA). The patient was diagnosed with DKA and his HbA<sub>1c</sub> level was 8%, indicating that diabetes control has been chronically poor.*

This patient had clearly been neglecting his diabetes care, which resulted in him developing DKA. The patient now has complex medical and psychological needs, including alcohol dependence, and will thus require a multidisciplinary approach to his medical problems, with careful follow-up from his DSN. This person is a clear example of the precontemplation stage of the behavioural change model, and will be the most difficult to reform to health-promoting behaviour.

A person in the contemplation stage of behavioural change is aware of the risks associated with their behaviour, but is ambivalent about changing and measures the benefits of change versus costs or barriers. Identifying barriers (for example, fear of being different to others) and misconceptions such as “I won’t be allowed to eat normal food”, and addressing concerns, such as “will I be able to keep up with this complex schedule?”, as well as utilising available support systems (for example, dietician and psychologist) is likely to yield a positive result. Case study 2 is an example of a person in the contemplation stage, and approaches that could be beneficial when dealing with a person at this stage are discussed below.

Case 2

*A 19-year-old pregnant woman was diagnosed with gestational diabetes. She was told about its possible adverse effects on her and her baby, but was not sure how important her own actions would be, and considered treating her diabetes an unnecessary burden.*

This person will need a lot of education and support in order to achieve and

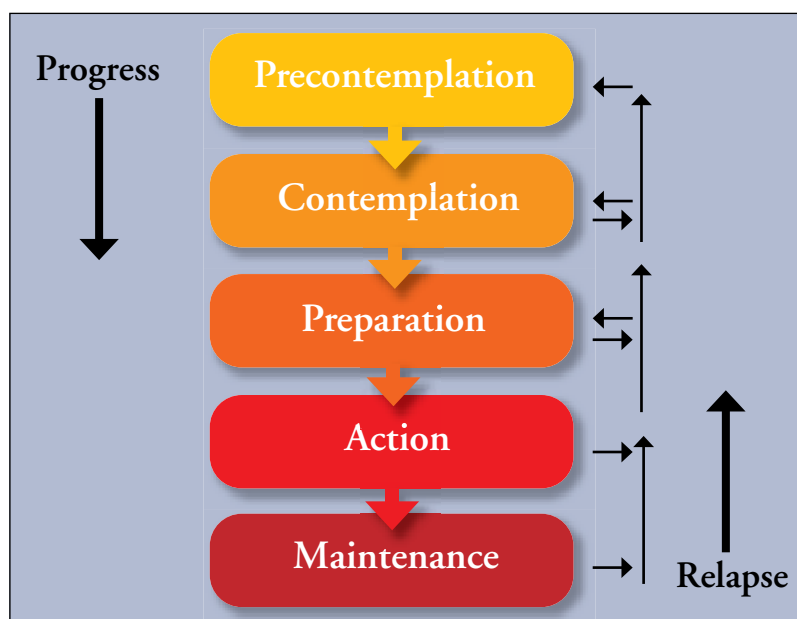


Figure 1. Behaviour change model (<http://www.adultmeducation.com/FacilitatingBehaviorChange.html>)

maintain good diabetes control, and might benefit from exploration of health beliefs and further discussion of barriers which prevent adherence. Such beliefs and barriers are discussed in detail in the section 'Health belief model' below, and for this person could include perceived severity of diabetes and its threat to her and her baby, perceived difficulty of following a glucose-lowering regimen and perceived ineffectiveness of her efforts to control her diabetes. The DSN's active listening skills would be of immense value in this case, and would help the patient proceed to the preparation, or decision stage. In either of these stages, patients are ready to make some changes. For example, they might sign up to the gym or learn how to monitor their blood glucose levels.

#### Case 3

*A 67-year-old male attended his regular diabetes check. He has frequently missed his appointments in the past. This patient had a recent deterioration of vision, which was attributed to diabetic retinopathy. This event made this patient aware of the consequences of his poor glycaemic control, and he decided to discuss the actions that could help him to control diabetes with his DSN.*

At this point, goal setting, prioritising and advice will be effective. After preparation of targets, the patient could take a definitive action that would help him to achieve glycaemic control, be it changing his lifestyle, taking medication on time or regular monitoring. Positive reinforcement and support from the DSN are most important in this situation. The author has anecdotal evidence from patients who confirm that the MDT and their DSN especially were essential for them to get motivation needed for this step.

During the maintenance phase, the patient tries to retain and extend their achievements, and encouragement including regular contact, follow-up and continuous

education are vital. Case 4 illustrates this.

#### Case 4

*A 53-year-old male with type 2 diabetes and on insulin was seen in a diabetes clinic. He described his lifestyle, noting three gym sessions a week, balanced diet and correct administration of insulin. His daily blood glucose levels were around 4–6 mmol/L, his HbA<sub>1c</sub> level was 6.5%.*

This type of behaviour is a target for all people with diabetes; however, in this author's experience, DSNs believe that maintenance is the most difficult stage for the patient, and continuous support from their DSN is essential for them to keep up with this task.

### Health belief model

The health belief model is a psychological concept that attempts to explain and predict health behaviours. It postulates a number of variables that affect a person's willingness and ability to change their behaviour and indicates the aspects where interventions are likely to be successful (See Figure 2; Nutbeam, 2000). Perceived risk, severity of complications and effectiveness of health promoting behaviour were shown to correlate with patients' motivation to adjust their life and adhere to a treatment plan. This model helps to identify the barriers that stop the patient from achieving their goal and demonstrates how a practitioner might enhance health promoting behaviour.

In reality, the health belief model is often used to complement the model of behaviour change. For example, the 19-year-old pregnant woman in case 2 who was assessed as being in the 'contemplation' phase was weighing up the perceived threats of diabetes versus the perceived benefits of following the regimen. The health belief model offers a structured approach to understanding this patient's psychological state, and the method was reported helpful by DSN interviewed by this author.

In combination with anecdotal evidence,

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1. This person will need a lot of education and support in order to achieve and maintain good diabetes control, and might benefit from exploration of health beliefs and further discussion of barriers which prevent adherence.
2. A 53-year-old male with type 2 diabetes and on insulin was seen in a diabetes clinic. He described his lifestyle, noting three gym sessions a week, balanced diet and correct administration of insulin. His daily blood glucose levels were around 4–6 mmol/L, his HbA<sub>1c</sub> level was 6.5%. This type of behaviour is a target for all people with diabetes.
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1. In combination with anecdotal evidence, available literature confirms the effectiveness of the health belief model in diabetes care (Aoun, 2002).
2. The health belief model can be used to identify the targets of educational schemes: for example, by explaining to the patients how eye problems are more common with poor glycaemic control, and how diet and medications can effectively prevent it (Cerkoney, 1980).
3. So, do these treatment models actually work? Anecdotal evidence suggests that they are useful assessment tools, but their implementation does not always ensure a smooth journey for diabetes patients towards the desired health promoting behaviour.

available literature confirms the effectiveness of the health belief model in diabetes care (Aoun, 2002). Studies have also indicated a number of barriers that stopped the patients from taking control of their glucose levels (Schlundt, 1994). Ary et al (1986) report that people adhered least well to the dietary and physical activity components of the regimen, with the most common reasons for dietary non-adherence being the situational factors of eating out and inappropriate food offers from others. Some independent factors might also act as cues to health promotion, for example set meal times at work or sport culture within one's social circle are both factors that are likely to encourage the patient to health enhancing behaviour. DSNs treating patients with diabetes could use this information in their practice when advising their patients which targets are most appropriate for their level of motivation and ability, and what 'tricks' they could use to help them manage their diabetes.

**Major Elements of the Health Belief Model**

On the whole, the health belief model seems to have a lot to offer to the successful

management of diabetes. The health belief model can be used to identify the targets of educational schemes: for example, by explaining to the patients how eye problems are more common with poor glycaemic control, and how diet and medications can effectively prevent it (Cerkoney, 1980). Unfortunately, the advantages of this model remain largely unexploited, as up to 90% of health providers fail to evaluate psychological problems or provide the psychological support needed by people with diabetes (Peyrot, 2005). Raising awareness of the importance of psychological issues in the care of people with diabetes, showing how these issues have the potential to stimulate or prevent health promoting behaviour in their patients may be invaluable to health professionals.

**Conclusion**

So, do these treatment models actually work? Anecdotal evidence suggests that they are useful assessment tools, but their implementation does not always ensure a smooth journey for diabetes patients towards the desired health promoting behaviour. It is difficult to assess the

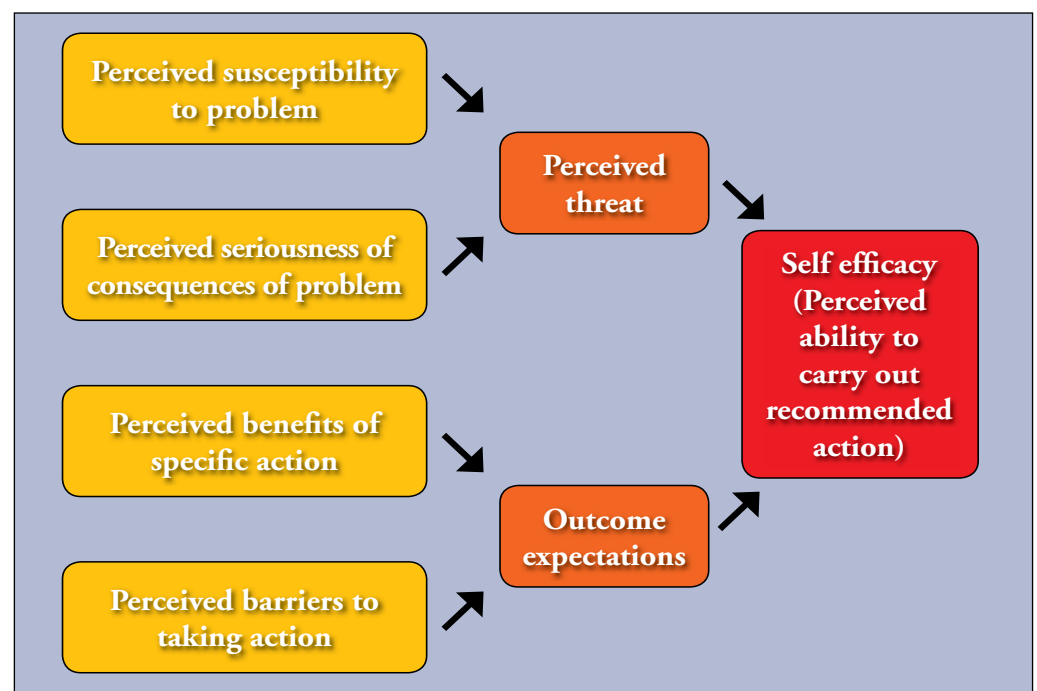


Figure 2. Health belief model ([www.ohprs.ca/hp101/mod4/module4c3.htm](http://www.ohprs.ca/hp101/mod4/module4c3.htm))

extent of the effectiveness of treatment models as their use is not formally adopted in nursing practice. A nationally recognised protocol for psychological assessment based on the health belief model and the model of behaviour change may be beneficial for patients, and could provide concrete guidelines for nurses and other MDT members. A pilot study of such a protocol would definitely help to make an evidence-based decision regarding such an initiative.

Specialist nurses interviewed by this author stated that they do apply the health belief and behaviour change models in their practice, but felt that they would benefit from further training in the use of such techniques. They also felt that wider involvement of psychological services in diabetes care could make a dramatic difference to rates of adherence to treatment, however, at present such resources for this group of patients are scarce.

Formal use of psychological models could help to establish better patient–practitioner relationships, as they allow the DSN a better understanding of the patient’s views. Health belief and behaviour change models have the potential to improve communication between the MDT members, stop patients in need of increased psychological support from “slipping through the net”, and allow fair referral to psychological services where they are most needed. ■

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1. A pilot study of such a protocol would definitely help to make an evidence-based decision regarding such an initiative.
2. Specialist nurses interviewed by this author felt that wider involvement of psychological services in diabetes care could make a dramatic difference to rates of adherence to treatment, however, at present such resources for this group of patients are scarce.