

# Models in health psychology: an introduction

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## ARTICLE POINTS

**1** The study of health psychology is relevant to nurses working in diabetes care.

**2** A working knowledge of some models and theories enables development of practice and research skills.

**3** Health psychology takes a more holistic view of health and medicine than traditional medicine.

**4** All theories and models have advantages and disadvantages.

## KEY WORDS

- Health psychology
- Health belief model
- Health locus of control
- Theory of planned behaviour

## Introduction

This article, the first in a series on health psychology, introduces the subject and some of the models which seem particularly relevant to diabetes care. These include the health belief model, the health locus of control model, the theory of planned behaviour, and the transtheoretical theory of behaviour change. Examples of how these theories apply directly to the care of patients with diabetes are explored. The intention is to promote greater insight, further reading and, hopefully, future application of the theories in research studies.

**W**hat makes some people more able than others to lose weight? Why are some people better motivated to perform blood glucose monitoring? What makes some people more able to cope with distressing situations? What factors contribute to the development of depression? How can one possibly predict whether a person newly diagnosed with diabetes will manage the demands of the condition?

These are the type of questions typically addressed in health psychology — the study of how psychological factors such as beliefs, values, thoughts, feelings and attitudes impact on health and illness and health-related behaviours.

Health psychology is a relatively new discipline, emerging in the context of a challenge to traditional biomedical models of illness. Briefly, these traditional models see illness as arising from external forces (e.g. bacteria) over which the individual has no control. There is no continuum between mental and physical aspects of illness and the two are regarded as entirely separate. Treatment is solely in the hands of the healthcare professional. By contrast, health psychology views mental processes as not only intertwined with physical processes in illness, but also as a potential contributory factor to both health and illness. The individual is seen as having an active, rather than passive, role in the cause, progression and outcome of illness. The biopsychosocial model (*Table 1*) illustrates how these various components interact.

## Models, constructs and theories

These are many and varied. Some have emerged or been adapted from learning or behavioural theories; others have been derived directly from health psychology research. A selection of those models that seem to have direct relevance to diabetes appear below. The basics of each are described, along with a brief critique and suggestions of potential applications to diabetes care.

### Health belief model

The health belief model (HBM) is a cognition model, i.e. a model that emphasises the way an individual provides a rationale for their behaviour without particular reference to a social context. The HBM was conceived by Rosenstock (1966) and has undergone revision and development, primarily by Becker (1974). It has made an important contribution to the prediction of health

**Table 1. Biopsychosocial model**

<b>Bio</b>	Viruses Bacteria Lesions
<b>Psycho</b>	Behaviour Beliefs Coping Stress Pain
<b>Social</b>	Class Employment Ethnicity

behaviour. The HBM suggests that an individual's likelihood of undertaking a health behaviour (i.e. a behaviour aimed at promoting health) is influenced by the following:

- Belief in the severity of illness which may ensue if the behaviour is not undertaken
- Perceived susceptibility to such an illness
- Benefits and costs, or barriers, to undertaking the behaviour necessary
- Cues to action, either internal or external.

Connor and Norman (1998) include a very useful overview of the HBM model. An outline of the model (Figure 1) shows that demographic and psychological variables are taken as a starting point that may have helped to form an individual's beliefs.

With regard to diabetes, the HBM would suggest, for example, that whether a person undertakes regular blood glucose monitoring (a health behaviour) depends on:

- Perception of the severity of uncontrolled diabetes
- Perception of susceptibility to diabetes complications
- Outcome of weighing up of costs (e.g. sore fingers, inconvenience, embarrassment) and benefits (e.g. knowledge of blood glucose levels, prevention of hypoglycaemia, confidence in adjusting medication)
- Cues to action (e.g. increasing awareness of the link between blood glucose levels and complications), or an acute admission to hospital as a result of poor advice from an external source or ignorance of self-management methods
- Core beliefs, which may have been influenced by age, sex and socio-economic status and by others' opinions.

Support for the HBM is widespread, with studies showing an effect for the components both together and separately. In the latter case, Ogden (1996) describes some studies showing that barriers and susceptibility are the main predictors and others showing that barriers, benefits and severity best predict health behaviour.

Much research interest has focused on cues to action such as warnings that are intended to arouse fear, information leaflets, posters and negative outcomes of behaviours such as smoking. The outcomes of this research can be

seen in any health promotion initiative.

The HBM is not above criticism, however. An obvious weakness is its emphasis on rational aspects of decision making, ignoring a role for emotional factors such as fear ('I perform blood glucose monitoring because I'm terrified of going blind'), simple habit ('I test my blood glucose at 8am every day') or approval ('I know it pleases the DSN when my record book is full of results'). A further criticism is that it appears to be static rather than dynamic, i.e. it implies that beliefs do not change over time. Finally, as Sheeran and Abraham (1998) point out, it does not address the important role of intention to behave, only behaviour itself.

### Health locus of control

The health locus of control (HLC) construct arose out of social learning theory and attribution theory, both of which include an internal/external causality dimension.

Rotter's social learning theory (1966) proposes that people have a 'generalised expectancy' of the outcomes of their actions depending on their previous experiences and the extent to which the outcome of their behaviour is valued. An internal dimension would be present if the person feels themselves in control of their destiny and an external dimension exists if they feel other people or events are in control.

Attribution theory refers to four dimensions of causality:

- Internal or external
- Specific or global
- Controllable or uncontrollable
- Stable or unstable.

Thus, if a person attributes their situation to forces external to them, stable (i.e. unchangeable), uncontrollable (i.e. he/she

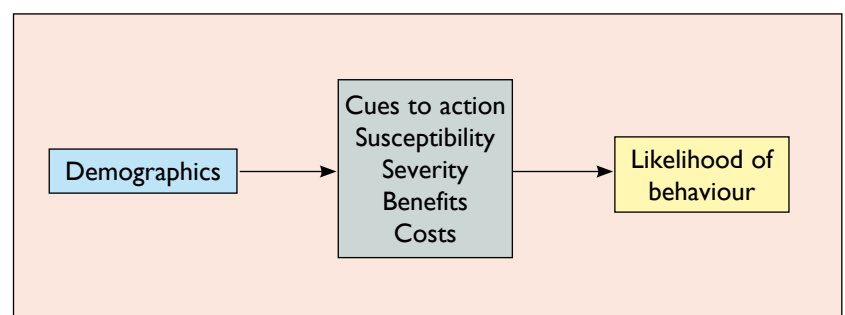


Figure 1. The health belief model.

**PAGE POINTS**

- 1 An internal locus of control tends to be associated with health behaviours more than an external locus of control.
- 2 External locus of control can be divided into external-chance and external-powerful others.
- 3 Self-efficacy and health value are important additional concepts to locus of control.
- 4 The theory of planned behaviour takes intention to behave into account.

has no power over it) and global (i.e. non-specific), then the possibility of controlling the situation is remote. However, if the opposite occurs, and the attribution is specific, controllable, internal and unstable, there is more chance that the person will be able to influence the outcome. Where these constructs are applied to health, the latter dimension mix is more likely to lead to a health behaviour being undertaken.

Rotter's predictions that 'internals' are more likely to be responsible for their own health than 'externals', are borne out by some research. However, some studies have found that the external dimension can consist of attributions to both 'chance' and 'powerful others', leading to a difference in the outcome. For example, external 'chance' attributions ('It's a matter of luck whether I get complications') are much less likely to lead to health behaviours than external 'powerful others' attributions ('the doctor will tell me what to do for the best'). It seems that the combination of internality and 'powerful others' externality can also lead to health behaviours along with internality alone.

Further, an internal locus of control has not always been shown to be positive; the burden of self-responsibility has been shown to correlate with increased depression in those with a renal transplant (Kaplan et al, 1993). This depression may be due, in part,

to a sense of helplessness (Seligman, 1975).

A simple internal/external locus of control distinction is too narrow to predict behaviour. Clearly, behaviour depends on the perceived value of the outcome (as in Rotter's original prediction) and also self-efficacy, i.e. the extent to which a person feels able to undertake the behaviour (Sarafino (1996) explains self-efficacy in more detail). Current research on HLC is looking at these factors together. However, overall, the notion of a sense of personal control does seem to be important in prediction of health behaviour and this is addressed by some of the emerging philosophies of diabetes care, such as empowerment (Funnel et al, 1991).

**Theory of planned behaviour**

The theory of planned behaviour (TPB) (Figure 2) is known as a social cognition model, i.e. a model that places the individual in their social world as well as their individual one, in recognition of the impact of important others' opinions on a person's actions. The TPB emerged from earlier research on the role of attitudes on behaviour, as Ogden (1996) explained.

The importance of the TPB is that it emphasises the role of intentions in the undertaking of health behaviour. These intentions can be modified by attitudes of the individual and others to a health behaviour, and the individual's perceived control over the relevant behaviour, e.g. a belief in internal or external control. In turn, these beliefs can be modified by the perceived benefits or costs of the behaviour.

Applied to diabetes, the TPB predicts that, after taking into account internal and external factors, people will intend to undertake a health behaviour, e.g. regular exercise, if they or their 'significant others' believe it to be beneficial (the subjective norm) and they perceive themselves as capable of it (perhaps because of past experience). The TPB also allows for behaviour to be predicted without the mediation of intentions.

The TPB has been criticised for the lack of a time or directional component. However, this seems relatively unimportant in view of the quantity of supportive research covering

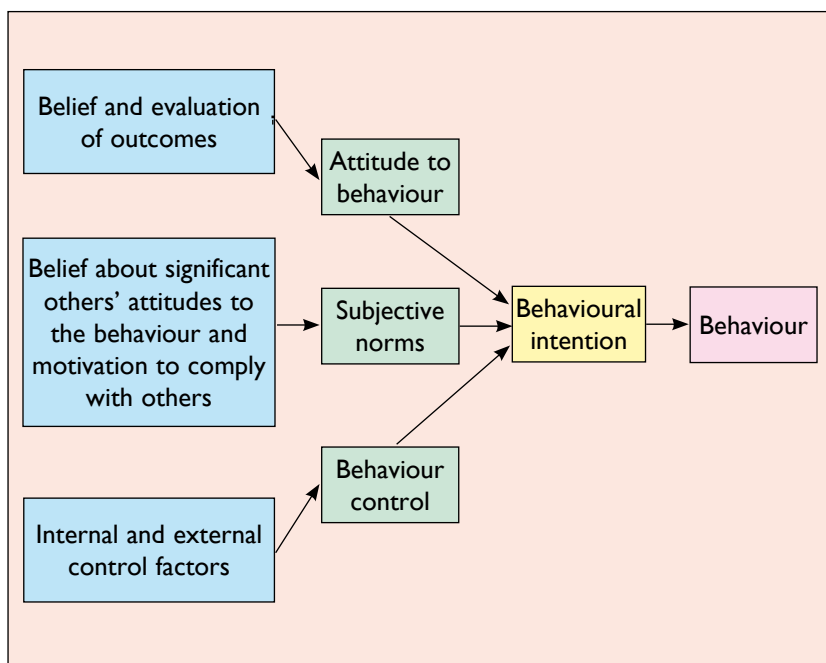


Figure 2. The theory of planned behaviour.

numerous behaviours, e.g. weight loss behaviour and testicular self-examination (Ogden, 1996), in which the individual components of the model were found to predict intention to undertake behaviours. A particularly powerful predictor for weight loss behaviour seems to be perceived behavioural control. This points to its potential application in diabetes research.

Ogden (1996) gives a useful research project which uses TPB theory in respect of exercise behaviour.

### The transtheoretical model of behaviour change

This model (also known as the stages of change model) was introduced by Prochaska and DiClemente in 1982. They distilled a number of processes, suggested by other therapies, which promote behaviour change into a composite model that recognises the following stages:

- Precontemplation (the person is not considering any change)
- Contemplation (the person is considering taking action about a problem)
- Preparation (the person is ready to act)
- Action (the person undertakes a health behaviour)
- Maintenance (the person continues to undertake the changed behaviour).

Although it sounds rigid, the model is dynamic rather than linear, allowing a person to move back and forth between the stages according to their situation. The model also lends a time scale to behaviour, stating for example that the contemplation stage can take several months and the action stage up to six months from the preparation stage.

This model has enjoyed considerable research support in respect of cessation of smoking and other addictive behaviours as well as in exercise and screening behaviour. However, it is easy to see how the model can be criticised in terms of the first, precontemplative, stage which may imply a lack of activity. Sarafino (1996) points out how interventions can be tailored to all the stages and in respect of the first stage, interventions would be aimed at raising awareness of the need for health behaviour and filling in any informational or knowledge gaps. This may promote 'readiness to act'

and hence health behaviour.

In diabetes care, the stages of change model can be applied to many aspects, (blood glucose monitoring, weight loss behaviour, exercise, etc). It is easy to see how potentially useful the model can be as a framework for tailoring interventions (e.g. counselling, motivational interviewing, regular contact, encouragement and information giving) to the stage the person is at.

### Summary

It is hoped that this article has provided a very basic introduction to health psychology and some of the models and theories it offers. Further, it is hoped, that readers will be stimulated to read in more detail in the general texts given which are accessible and interesting, and highly relevant to diabetes care ■

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### PAGE POINTS

1 The theory of planned behaviour can be applied to aspects of diabetes management, e.g. exercise.

2 Interventions are important at each stage of the transtheoretical model of behaviour change.

3 The stages of change model allows for relapse in behaviour change.

### Recommended further reading

- Ogden (1996)
- Connor and Norman (1998)
- Sarafino (1998)