

5 HEALTH AND BEHAVIOUR

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LEARNING OBJECTIVES

This chapter is designed to enable you to:

- Discuss the importance of health behaviour and of health behaviour change.
- Outline the different models of health behaviour.
- Understand how to apply these models in clinical practice to help people change.

Understanding and changing health behaviour effectively would do more than anything else to reduce morbidity and mortality in our society. In the UK the top three causes of death are cardiovascular disease, which accounts for 30 per cent of all deaths, respiratory infections (11 per cent) and lung cancer (6 per cent). This pattern is similar in most developed countries (WHO, 2008). All of these illnesses can be caused or exacerbated by smoking, which has been labelled the number one cause of preventable illness and death (Office of the Surgeon General, 2004). Most people know cigarette smoking is bad for their health, yet approximately one out of every four or five people smoke. Even when they are in hospital some patients will continue to smoke, despite often having to stand outside to do so.

4 SIMPLE HEALTH RULES

① GOOD DIET

② EXERCISE

③ RELAX

④ AND AVOID BEING HIT BY A BUS



5.1 PREDICTING AND CHANGING HEALTH BEHAVIOUR

5.1.1 WHAT ARE HEALTH BEHAVIOURS?

It is not only risky behaviours like smoking that have an impact on our health. In a famous longitudinal study of almost 7,000 people living in Alameda County in the USA, it was

BOX 5.1 Behaviours associated with long life

Not smoking
Being physically active
Moderate weight
Moderate alcohol consumption
7–8 hours sleep a night
Eating breakfast regularly
Not snacking

(Belloc, 1973; Kaplan et al., 1987)

found that the seven behaviours listed in Box 5.1 were associated with a longer life. These included eating breakfast and getting eight hours sleep a night.

Thus our health is affected by a range of behaviours, which can be categorised as (a) health protective behaviours and (b) health risk behaviours. **Health protective behaviours** consist of things like exercise, a good diet, sleep, and dental care. It also includes screening behaviours such as attending regular screening checks for chlamydia, cervical cancer, hypertension, and dental checks. **Health risk behaviours** include things such as smoking, substance misuse, unsafe sex, and risky driving. Behaviours particularly pertinent to morbidity and mortality include smoking, diet, physical activity, alcohol consumption, screening behaviour (particularly for cancer), sexual behaviour, and driving behaviour.

CLINICAL NOTES 5.1**Smoking and health**

- Smoking is the number one cause of preventable illness and death.
- Every single person you help to give up smoking reduces a lot of morbidity and mortality – not only for them but also potentially for their children too.
- Doctors' advice is one of the most effective triggers for people to give up smoking.
- Even *brief* advice from a doctor makes it more likely a person will give up smoking and remain non-smoking a year later.



We need to understand why people choose to behave in ways that will harm their health in order to help them change. This is not simple: behaviour is determined by many factors, including individual differences, social surroundings and influences, and cultural

aspects. In order to have effective health promotion programmes we need to know the main causes of specific behaviours in different groups of people. For example, young people might be more motivated to eat a low-fat diet and regularly brush their teeth to improve their appearance rather than to improve their health, so emphasising the health benefits of these behaviours would not result in significant change in this group. The range of factors that influence health behaviour is shown in Box 5.2. Research and theories of health behaviour try to identify the strongest or proximal causes of behaviour so intervention can target those factors which are most likely to result in change.

BOX 5.2 Factors that influence health behaviour

Biological factors	Heredity (i.e. genetic factors) Sex Age
Psychological factors	Operant conditioning Modelling Emotional state Cognitive factors
Social factors	Demographic factors Social factors Financial/employment status
Cultural factors	Legislation Economics Healthcare provision Systems of provision

5.1.2 THEORIES OF HEALTH BEHAVIOUR

Many theories of health behaviour have been proposed. In recent years, social-cognition models have been most successful at explaining health behaviour. These models include the interplay between social and cognitive factors, such as social pressures, social norms, beliefs and attitudes. These models are based on an *expectancy-value* principle. This assumes that a behaviour is most likely to be maintained or changed if (a) a person expects it to result in certain outcomes and (b) the person values these outcomes as important or positive. These models account for up to a third of the variance in people's behaviour. Other theories integrate aspects of social-cognition models with other factors, such as an individual's readiness or motivation to change.

This chapter discusses four models of health behaviour: two social-cognitive models and two integrative models. We examine the evidence for these models and explore how we can use them in clinical practice to help people change their behaviour. This is illustrated by a case study that shows how each model could be adopted to help a young woman stop smoking.

Predicting and changing health behaviour

The social-cognition models that have been most widely used in the study of health behaviour are the Health Belief Model and the Theory of Planned Behaviour. Examples of integrative approaches are the Transtheoretical Model and PRIME Theory. These models do not necessarily compete. Although one model may be more successful at predicting a particular type of behaviour, aspects of all these models can be used in clinical practice.

5.2 THE HEALTH BELIEF MODEL

The Health Belief Model (HBM) was developed by a team of social psychologists in the US Public Health Service to understand why the uptake of tuberculosis (TB) screening programmes in the 1950s was so low (Rosenstock, 1974; Strecher et al., 1997). The HBM is shown in Figure 5.1 and suggests that the likelihood of someone changing their behaviour is primarily determined by the **perceived threat** of their current situation, coupled with an **evaluation of the outcome** if they change. Perceived threat is thought to be influenced mainly by the **perceived susceptibility** to negative consequences and the **perceived severity** of these consequences for the person. For example, if a person thinks they are not susceptible to TB then obviously TB will not be a threat to them so they are unlikely to attend screening. Another person might think they are susceptible to TB but that TB is not severe enough to do anything about. Perceived susceptibility and severity then combine to produce a level of perceived threat that motivates people to take action or change their behaviour.

However, even when the perceived threat is high, people might still not change their behaviour. There is another factor here that influences behaviour, namely how a person evaluates the outcome. This evaluation is affected by **perceived benefits** and **perceived barriers**. Perceived benefits are what a person thinks they will gain from the behaviour or behaviour change. This can be the removal of negative as well as positive factors. For example, attending TB screening can mean the threat of the illness is removed or the illness is treated in its early stages before it causes a disability. Perceived barriers are things that make it difficult for a person to carry out the behaviour. For TB screening this might include not being able to take time off work, the screening clinic being a long distance away, difficulty in finding childcare, a lack of transport, etc.

The HBM is the only model that explicitly recognises the importance of **cues to action** that will prompt people to change. These cues can be internal (such as perceived symptoms), or external (such as health promotion, the advice of a doctor or nurse, or the illness or death of a known person). The illness or death of a public figure can provide strong cues to act that may be wide reaching through extensive media coverage. For example, when Linda McCartney died of breast cancer, the media coverage resulted in many women being screened and treated who might not have accessed this service otherwise. More recently, the death of celebrity Jade Goody from cervical cancer resulted in a 20 per cent increase in the number of women having cervical screening in the UK.

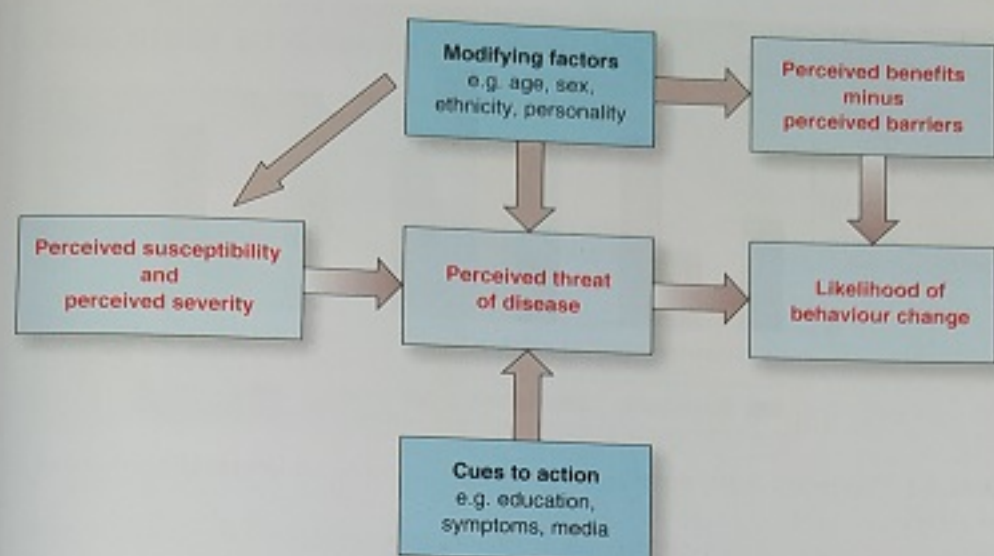


FIGURE 5.1 The Health Belief Model

Cues to action can take many forms. Smoking research has indicated that one of the most effective triggers in persuading someone to quit smoking is for a doctor to tell a patient they should give up. Even brief simple advice from a physician can make it more likely a smoker will quit and remain a non-smoker 12 months later (Stead et al., 2008). However, cues to action are not always necessary for change. If an individual has a sufficient perceived threat and positive evaluation of the outcome of change then they will often change without needing a cue. In other cases cues can be the final trigger that will tip the balance between a perceived threat and barriers and will prompt someone to act.

Later versions of the HBM have included **health motivation** as a factor. This relates to how much a person is concerned about their health and prepared to consider behaviour change. Surprisingly, health motivation and cues to action have been relatively ignored by research. Consequently there is little evidence available on whether these are important. From the limited evidence we do have it seems that health motivation might have a small but significant effect on behaviour (Abraham and Sheeran, 2007).

The HBM is one of the longest-standing models of health behaviour. It has been researched in relation to many health behaviours, including breast self-examination, flu vaccinations, diabetes management, medication for hypertension, and cancer screening (Janz and Becker, 1984). Reviews of the evidence for the HBM have been generally positive and find that perceived barriers are often the most important factor in preventing change (Harrison et al., 1992; Janz and Becker, 1984). The importance of the HBM for different categories of health behaviour is shown in Figure 5.2. It can be seen that screening behaviours are most influenced by perceived barriers and susceptibility. When changing risky



FIGURE 5.2 The Health Belief Model and different types of behaviour (adapted from Harrison et al., 1992)

behaviours it is the perceived benefits that are most important. Adherence to medical treatment is most affected by perceived barriers to the treatment.

Interventions using the Health Belief Model

To use the HBM in clinical practice we should explore patients' perceived susceptibility, severity, benefits and barriers, as well as any cues. People's perceptions of threat and benefits can be improved through education. Problem-solving and action plans could be used to reduce perceived barriers. Using the HBM to design interventions has proved very effective. For example, Yabroff and Mandelblatt (1999) looked at 63 interventions designed to increase breast cancer screening through mammograms. Interventions based on the HBM were 23 per cent more effective than the usual care.



ACTIVITY 5.1 YOUR OWN HEALTH BEHAVIOUR

Think back to the last time you:

- Went to the doctor.
- Checked yourself for breast or testicular lumps.

How much (if at all) was your behaviour affected by the perceived severity, susceptibility, benefits, and barriers in these different situations?

Case Study 5.1 shows how we might use the HBM to help a young woman give up smoking. This illustrates how the model may be implemented as a guide if we wish to help people change a risky health behaviour.

CASE STUDY 5.1 Smoking cessation using the Health Belief Model

Jenny is a 22 year old woman who has smoked 20 cigarettes a day since she was 15 years old. She coughs every morning and gets breathless easily. She has a strong family history of asthma although she has never been checked for asthma herself.

Cues to action

Explore whether anything has triggered her to consider giving up smoking:

- *Has anything made you think about giving up smoking?*

If so, capitalise on this by reinforcing it. Give her positive feedback if she has thought about giving up smoking.

Health motivation

Explore how motivated or concerned she is about her health:

- *How concerned are you about your health?* [abstract health concern]
- *How important is it to you to stay healthy/not to get ill?* [concrete health concern]

Susceptibility and severity

Explore the perceived susceptibility and severity:

- *How do you think smoking is affecting your health?* [current susceptibility]
- *How might it affect your health in ten years' time?* [future susceptibility]
- *What would it be like if that happened to you/you got [illness]?* [severity]

Educate about the negative effects of smoking to increase the perceived susceptibility and severity:

- *If you smoke you are more likely to have heart disease, a stroke, circulation problems, lung cancer, and many other cancers.*
- *Every cigarette you smoke contains over 4000 chemicals.*
- *The toxins in cigarettes put huge strain on your body.*
- *Other effects of smoking are that your skin ages quicker, teeth become discoloured, gum disease, poor sense of smell, reduced fertility, and blindness.*
- *Smoking is therefore the single most preventable cause of illness and death.*

[Cont'd]

Perceived benefits and barriers

Explore the perceived benefits and barriers:

- What are the pros and cons of smoking for you? (current benefits & costs)
- Is there anything stopping you from giving up? (current barriers)

Problem solving to reduce barriers:

- How can you/we change this? What steps can you/we take to help you give up? (reducing current barriers and focusing on taking action)

Educate about the positive benefits if they give up smoking now, to increase the perceived benefits:


- If you give up smoking you will improve your health and live longer.
- Your risk of heart disease drops dramatically in the first year after quitting.
- You will feel healthier and, as smoking damages the skin, you might look better too.
- You will save a huge amount of money! Someone who smokes 20-a day will spend around £1600 (\$2600) a year on cigarettes.

5.3 THE THEORY OF PLANNED BEHAVIOUR

The Theory of Planned Behaviour (TPB: Ajzen, 1988) originated from social psychology and was first proposed to explain all kinds of behaviour not just health behaviour. This theory is shown in Figure 5.3. It starts from the assumption that the strongest predictor of behaviour will be a person's **intentions** – in other words, how a person intends to behave will be the strongest determinant of how they will actually behave.

Intentions are thought to be determined by two factors. The first is a person's attitudes towards the behaviour (see Chapter 9). This is influenced by their *beliefs about the outcomes of the behaviour* (e.g. the pros and cons) and their *evaluation of these outcomes* (e.g. whether these are positive or negative). Consider our case study. If Jenny believes smoking will keep her slim and reduce stress (pros), and that these outcomes are the most important to her (her evaluation of outcome), then she will be motivated to quit.

The second factor that determines intentions is the **subjective norm**. This is the perceived social norm about the behaviour in a person's environment. This is influenced by the *perceived beliefs of others* about the behaviour and the person's *motivation to comply* with these beliefs. For example, young people are often most motivated to comply with the norms of their friends. Family-based interventions for young people are therefore less likely to be successful than interventions targeted at peer groups.



ACTIVITY 5.2 SOCIAL NORMS VERSUS ATTITUDES

Has there ever been a time when you have been persuaded to do something against your better judgement because everyone else was doing it? For example:

- Drinking and driving.
- Drinking too much.
- Smoking or other drug use.

What do you think is more powerful: your own attitudes or social pressure/group norms? Why is this?

A strength of the TPB is that it takes account of the importance of social pressures and norms as well as how much control a person believes they have over their behaviour. Research has shown that control is indeed important in behaviour change (Wallston, 2007). The TPB accounts for control quite broadly in the form of **perceived behavioural control**. The link between perceived behavioural control and intentions is via the amount of overall control people believe they have over their behaviour and changing this behaviour. If a person believes they do not have any control over their smoking then they will not intend to quit. The direct link between control and behaviour is thought to be due to an *actual* lack of control over the factors needed to support or change a behaviour, rather than a *perceived* lack of control. An actual lack of control might

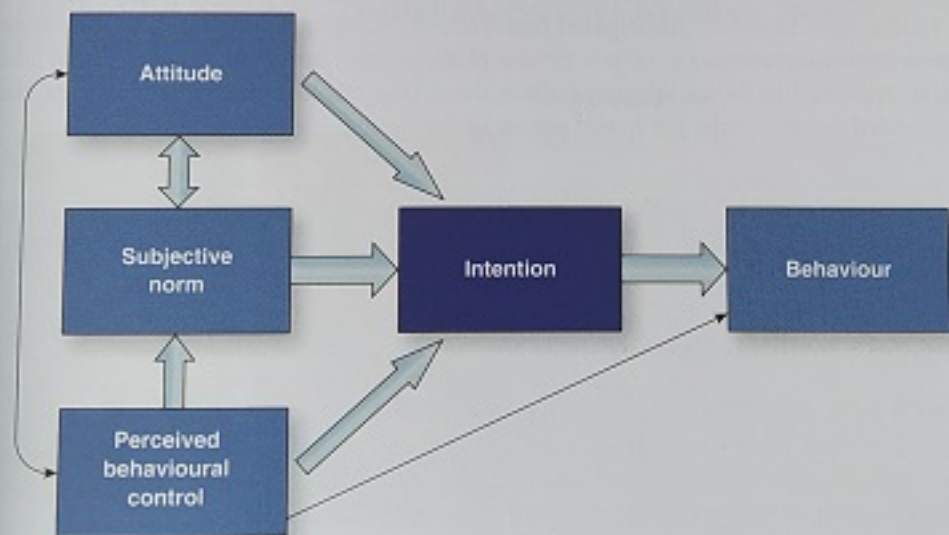


FIGURE 5.3 The Theory of Planned Behaviour

involve not having suitable transport to attend a smoking cessation clinic, not being able to afford nicotine replacement therapy, or living in an environment where many other people also smoke.

There are numerous ways in which we can look at control. For example, we can distinguish between an internal locus of control, where people believe they can control their behaviour or the outcome of events, or an external locus of control, where people believe that other people or fate are controlling the outcome of events (see Chapter 9). This will differ between different situations but is very relevant to medicine. For example, a patient with an external locus of control is more likely to expect medical professionals to control or sort out their illness. A patient with an internal locus of control will be more proactive and likely to make lifestyle changes or adhere to treatment because they believe they have control over the outcome of their illness. This is a useful characteristic to look out for in clinical work because it can help to develop a more effective treatment plan for each individual. For example, a person with diabetes who has an external locus of control might be more effectively treated with regular outpatient appointments to monitor their progress and adjust their medication.

The TPB therefore proposes that attitudes, subjective norms, and perceived behavioural control are the major determinants of intentions. The relative importance of these three factors will vary according to different behaviours and individuals. There is evidence that the TPB predicts between 55 per cent and 71 per cent of intentions for a wide range of health behaviours, including smoking, testicular self-examination, exercise, abortion, condom use, diet, and oral hygiene. The TPB is therefore very good at explaining people's intentions to act in certain ways. However, while many of us intend to live healthier lifestyles – especially at New Year – this does not always mean we will do so! The TPB is slightly less successful at predicting actual behaviour. Researchers are therefore endeavouring to improve the theory by adding such factors as **anticipated regret** about changing a behaviour, **moral norms**, and **action implementations** i.e. how a person plans to take action to change. These additions have appeared to be useful, particularly the action implementations. However, they have not added greatly to the predictive power of the model.

CLINICAL NOTES 5.2

Changing a health behaviour

- Information (education) from a healthcare professional is a strong trigger for a behaviour change.
- Models of health behaviours are useful guides for clinical practice when helping someone change their behaviour (see case studies).
- It is important to identify the barriers to change: even when people are motivated to change, the perceived barriers can prevent it happening.



- Explore how a person's social environment and norms may facilitate or prevent a behaviour change.
- If a person thinks they have no control over a behaviour they will not attempt to change. Re-education and support can help increase a person's perceived control.
- Helping someone develop a plan for how they will change their behaviour makes it more likely they will succeed.

Interventions using the Theory of Planned Behaviour

Interventions based on the TPB appear to be effective, although there have only been a few methodologically rigorous research studies available to date. The results of these studies have been mixed, although most support the positive effect of these interventions for changing behaviour (Hardeman et al., 2002). One recent, well-designed study used the TPB to develop a leaflet to encourage school children to exercise more. This study found that children who received the intervention reported changes in their attitude towards exercise, subjective norm, behavioural control, and intentions. They were also more likely to have increased their exercise than children in the control group (Hill et al., 2007). The study design and leaflet are shown in Research Box 5.1.

RESEARCH BOX 5.1 Leaflet intervention based on Theory of Planned Behaviour



Background

The Theory of Planned Behaviour (TPB) suggests that healthy behaviour can be promoted by changing attitudes, normative beliefs, and feelings of control over behaviour. This study looked at whether a leaflet based on the Theory of Planned Behaviour would increase exercise in teenagers.

Methods and findings

503 school children were randomly allocated to receive either a:

(Cont'd)

- Leaflet.
- Leaflet + motivational quiz.
- Leaflet + implementation intention prompt.
- No leaflet (control group).

The leaflet was designed to improve:

- *Awareness* of different types of exercise
- *Attitudes* towards exercise – e.g. 'exercise will enhance your self-esteem and confidence', 'exercise can stop you putting on weight'
- *Normative beliefs* by highlighting others' exercising and approval of exercise – e.g. 'people are impressed by others who look fit and healthy'; 'It's cool to be fit'
- *Behavioural control* – e.g. 'It's easy to do one more session of exercise than you do at the moment', 'exercise such as jogging is free'
- *Intentions* – e.g. 'build exercise into your daily routine'.

The leaflet listed different sports activities and encouraged children to increase their exercise programme by one session each week.

Children were followed up three weeks after being given the leaflet. All children who had received a leaflet had increased their intentions to exercise and were doing more exercise – regardless of the type of leaflet.

Significance

This study tested a carefully designed leaflet that directly mapped onto aspects of the Theory of Planned Behaviour. The results suggest that such leaflets could be a simple, cost-effective intervention to increase exercise in children.

Leaflet reproduced courtesy of Charles Abraham

Hill, C. et al. (2007) Can theory-based messages in combination with cognitive prompts promote exercise in classroom settings?, *Social Science and Medicine*, 65: 1049–1058.

Case Study 5.2 illustrates how the TPB might be used as a guide for intervention in clinical practice. Next we look at a completely different model, which focuses on *processes* of change rather than on the factors that determine behaviour.

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CASE STUDY 5.2 Smoking cessation using the Theory of Planned Behaviour



Jenny is a 22 year old woman who has smoked 20 cigarettes a day since she was 15 years old.

Attitudes

Explore her attitudes towards smoking:

- *What do you think about smoking?* (general attitude)
- *Is smoking a good or bad thing for you? In what way?* (evaluation of attitude/behaviour)

Educate about negative effects of smoking to try to change the attitude from positive to negative.

Social norms

Explore the norms of important people around her:

- *What do your friends/family/partner think about smoking?* (general norm)
- *What do your friends/family/partner think about you smoking?* (specific norm)
- *Whose opinion is most important to you?* (who she is motivated to comply with)
- *Would you like to give up smoking for [person]?* (motivation to comply with norms)

Discuss the pros and cons for her if she were to comply with the person or group norms she values most.

Intentions

Explore whether she intends to quit smoking:

- *Have you ever thought about giving up smoking?* (previous intention)
- *Do you intend to give up smoking in the next few months?* (current intention)

Perceived behavioural control

Explore how much control she thinks she has over quitting smoking.

- *Do you think you can give up smoking?* (perceived control over quitting)

If low control, explore the reasons e.g.

- *What makes you think you can't give up?*

(Cont'd)

Normalise the difficulty in quitting:

- Many people find it hard to give up

Increase the perceived control:

- most people are successful if they keep trying

Explore the actual control:

- Is there anything in particular that stops you from trying to quit?

Action implementations

If she is ready to try quitting, discuss the steps she can take to give up smoking:

- What steps are you going to take to give up smoking? (concrete plans)

Discuss how these can be changed or added to in order to increase chances of success:

- e.g. nicotine replacement, smoking cessation groups
- setting personal goals about quitting, and setting rewards for not smoking

5.4 THE TRANSTHEORETICAL MODEL

The Transtheoretical Model (Prochaska and DiClemente, 1983) was an early attempt to integrate models of health behaviour and psychotherapy to produce an effective model for smoking intervention. This model is often referred to as the 'Stages of Change' model. The stages that characterise this model are illustrated in Figure 5.4. It includes four components: (1) the stages of change, (2) decisional balance, (3) confidence and temptation, and (4) processes of change.

The **stages of change** are a series of stages that people are thought to go through when changing their behaviour. In *precontemplation* a person is not even considering changing their behaviour. In *contemplation* they begin to consider changing. This leads into *preparation* where the individual prepares to change. The final two stages are *action* and *maintenance* where the person makes the change in the short term (action) and this behaviour change is consolidated and maintained in the long term (maintenance).

An important aspect of this model is the inclusion of relapse, based on the recognition that people can relapse back to previous behaviour at any point and that they may have to go through the cycle a few times before the new behaviour becomes permanent. The advantage of this is that it normalises relapse and encourages people not to see this as a failure but to keep trying to change their behaviour. In clinical practice a healthcare professional could emphasise this and explore what a person has learned from a relapse and how this can be used to increase chances of success next time.

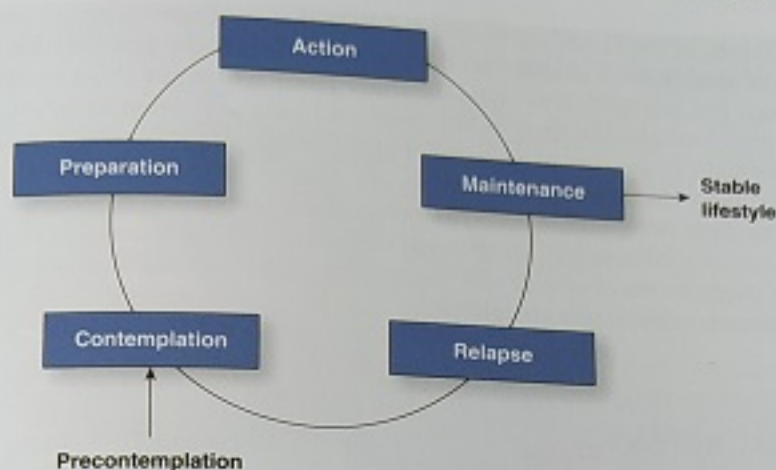


FIGURE 5.4 The Transtheoretical or 'Stages of Change' Model

Decisional balance involves the relative pros and cons of changing the behaviour. People are asked to write down the pros and cons of changing their behaviour in a decisional balance task. This helps them to clarify whether there are more pros than cons (or vice versa) and might prompt a person to consider changing their behaviour (i.e. move from precontemplation into contemplation).

Confidence refers to the confidence a person has in their ability to change. This overlaps with perceived behavioural control from previous models. **Temptation** is which factors will tempt a person to continue with an unhealthy behaviour in particular circumstances. For example, in our case study Jenny may want to give up smoking but finds it difficult to resist smoking when out with friends. The fourth aspect of the model is that it specifies ten processes of change which can be used to help people change their behaviour. These are consciousness raising (raising awareness), reinforcement management (helping a person to plan rewards if they change their behaviour), stimulus control, counter-conditioning, re-evaluation of self or environment, dramatic relief, social liberation, self-liberation and helping relationships.

ACTIVITY 5.3 CHANGING YOUR OWN BEHAVIOUR

- Do you have a bad habit or behaviour you would like to change?
- If so, what stage do you think you are at?
- How could you use the Transtheoretical Model to help yourself change that behaviour?

The strengths of the Transtheoretical Model are that it recognises people are at different stages of readiness for change and that interventions should be tailored to their particular stage. For example, if in our case study Jenny had never thought of giving up smoking (precontemplation) there is little point in trying to develop an action plan with her. It might make more sense to educate her about the dangers of smoking and encourage her to think about quitting (contemplation). Another strength is the inclusion of relapse. This is particularly important in addictive behaviour where relapse is common. However, the model has been criticised on the grounds that people do not necessarily move through the various stages consecutively. People might move backwards and forwards through the stages or miss out other stages completely.

CLINICAL NOTES 5.3

Working with resistance and relapse

- Whether a person is ready to change or not will affect the type of approach you should take.
- If a person has not considered changing, educate them about the negative impact of their current behaviour and encourage a change.
- Looking at the pros and cons of the current behaviour can also get people thinking about changing.
- Help them plan how they are going to change and build in rewards to reinforce the new behaviour.
- Relapse is a common part of behaviour change and not a failure. Explore why this happened and work out how to avoid it happening again the next time.



Interventions using the Transtheoretical Model

Evidence for the Transtheoretical Model is surprisingly weak. The majority of supporting evidence for the model comes from the research group who developed the model in its application to smoking cessation (e.g. Prochaska et al., 2001). Reviews of the evidence have concluded that there is, at best, weak evidence and, at worst, no evidence that interventions targeting people in particular stages are more effective than interventions that do not target such stages (Sutton, 2007). This is not to say an intervention based on the model has been completely unsuccessful, but rather that targeting stages does not significantly improve on interventions developed from other models such as the Theory of Planned Behaviour. The Transtheoretical Model at least provides a way to think about how the other different models of behaviour may operate at different stages. In other words, this is not an alternative to other models but a framework in which to place them. Case Study 5.3 illustrates how we might use the Transtheoretical Model in clinical practice.

CASE STUDY 5.3 Smoking cessation using the Transtheoretical Model

Jenny is a 22 year old woman who has smoked 20 cigarettes a day since she was 15 years old.

Stage of change

Identify which stage she may be at:

- *Have you ever thought about giving up?* (contemplation)
- *Have you ever planned to give up or tried to give up?* (preparation and action)

Decisional balance

Explore her perceived pros and cons of smoking. This is best done by writing them down and then looking at the list together:

- *What are the positive things for you about smoking?* (pros)
- *What are the negative things for you about smoking?* (cons)
- *Looking at this list, what does it make you think about your smoking?*

Confidence

Explore how confident she is that she can control her smoking:

- *Do you think you can control your smoking?*
- *How confident are you that you could reduce or quit smoking?*

Temptation

Explore which situations are particularly tempting for her to smoke and how this might affect a relapse:

- *Are there certain times or situations when you find it difficult not to smoke?*
- *How can you prevent this affecting you if you give up smoking?*

Processes of change

Use any of the processes to plan with her how she can quit smoking. For example:

- *Is there someone who can help you quit, or give up with you?* (helping relationships)
- *Can you do something instead of smoking that distracts you and makes you feel better, e.g. something relaxing, or exercise?* (counter-conditioning)
- *It's important to reward yourself regularly in the beginning to encourage you to continue not smoking. What would be a good reward for you?* (reinforcement management)

5.5 PRIME THEORY

A difficulty with many theories of health behaviour is that they tend to assume people will think rationally about their behaviour. Very few theories consider the role of emotions, or why people behave without thinking or in ways that they do not intend. **PRIME Theory** (West, 2006) is an attempt to incorporate motivation, emotions, impulses, and cognitive factors into one model.

The structural elements of **PRIME Theory** are shown in Figure 5.5. These consist of five factors thought to determine health behaviour:

- Plans*: conscious representations of future actions including a commitment to act.
- Responses* that are starting, stopping, or modifying any action.
- Impulses* or inhibitory forces that are experienced as urges.
- Motives* that are experienced as desires.
- Evaluations* or evaluative beliefs.

As illustrated in Figure 5.5, momentary responses are influenced by external stimuli such as triggers, and internal states such as arousal and emotion, and then directly

The human motivational system

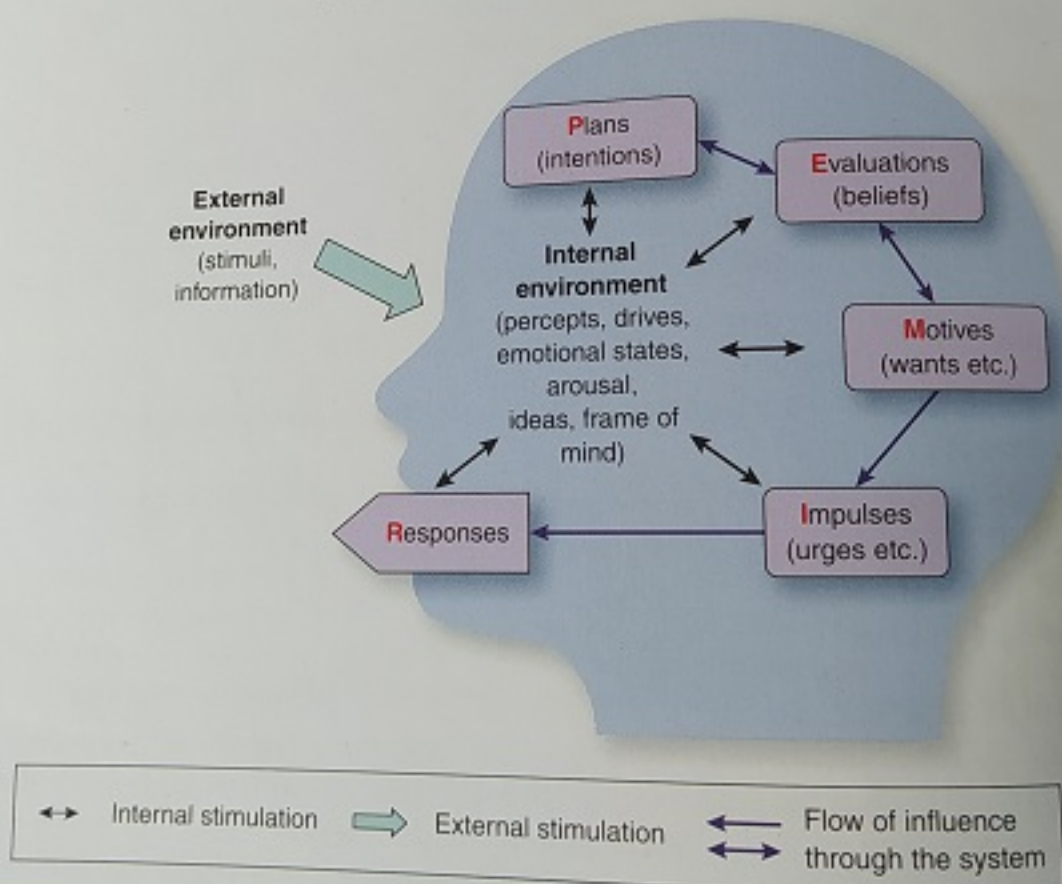


FIGURE 5.5 PRIME Theory
Image reproduced courtesy of Robert West

moderated by impulses and inhibitions. Impulses and inhibitions are in turn influenced by motives and evaluations. Motives and evaluations can be consciously experienced but not necessarily so. It is only at this level that beliefs and higher thought processes will come in. Finally, plans are cognitive intentions for future action that moderate motives and evaluations.

PRIME Theory is based on four assumptions about motivation and health behaviour. The first assumption is that we need to understand the moment-to-moment control of health behaviour before we can understand the long-term influences on behaviour. The second assumption is that the system has **plasticity** (is able to be modified or changed by experience). The third assumption is that **self-identity** is highly important to behaviour, our motives, and our plans (see Chapter 9). The fourth is that a system can appear complex but still be determined by relatively simple processes. For more detailed information see www.prime.co.uk.

One strength of PRIME Theory is that it integrates motivation (e.g. arousal, drives, motives) and emotion (emotional states, impulses) with cognitions (e.g. plans, evaluations) in a theory of health behaviour. Also, the model includes self-identity, something which is rarely considered in other models. A difficulty with PRIME Theory is that there is little evidence available on whether it is effective at explaining health behaviours. However, PRIME Theory can still be used in clinical practice to help people change their behaviour, as is illustrated in Case Study 5.4.

ACTIVITY 5.4 HELPING OTHERS CHANGE

- If you wanted to help a friend stop binge drinking how would you use these models?
- What four things do you think would be most appropriate and useful for this person?
- How would you incorporate this into a behaviour change programme?

CASE STUDY 5.4 Smoking cessation using PRIME Theory



Jenny is a 22 year old woman who has smoked 20 cigarettes a day since she was 15 years old.

Plans

Explore whether she plans or intends to give up smoking:

- *Have you ever thought about giving up smoking?* [previous intention]
- *Do you intend to give up smoking? If so, when?* [intention and timeframe]

[Cont'd]

Evaluations/beliefs

Explore her beliefs about smoking and evaluation of it:

- *What do you think about smoking?* (beliefs)
- *Is smoking a good or bad thing? In what way?* (evaluation of smoking)

Educate about the negative effects of smoking to try to change her attitude from positive to negative.

Motives

Explore her motives and motivation to quit:

- *Do you want to quit? If so, how badly do you want to do this?*
- *What motivates you to give up?*
- *How important is that to you?*

Impulses

Explore the positive and negative impulses:

- *Are there times when you have strong impulses to quit?* (positive impulses)
- *What triggers this, or when do you feel this?* (triggers to positive impulses)
- *How can you make the most of this to help you quit?* (harnessing these impulses)
- *Are there times when you have strong impulses to smoke?* (negative impulses)
- *What triggers this, or when do you feel this?* (triggers to negative impulses)
- *How can you avoid this or change it?* (harnessing these impulses)

Responses

Explore her responses in these situations:

- *How do you usually respond to these (positive) impulses/circumstances?*
- *How do you usually respond to these (negative) impulses/circumstances?*

Self-identity

Examine her self-identity and how this is affected by smoking:

- *How does smoking affect how you feel about yourself?* (self-identity)
- *Do you think being a smoker affects how other people see you?* (perceptions of others)
- *How would you feel about yourself if you quit smoking?* (develop new positive self-identity)
- *How do you think other people would see you if you were a non-smoker?* (develop the reinforcing views of others)

Overall, there is a...
Model can...
interventions...
evidence to support...
Health Theory...
is a...
From this...
weaknesses...
in clinical practice...
people to change...
will need to...
to be more effective

Summary

- Social...
include...
• The...
three...
central...
factors...
• Ac...
info...
no...
• Th...
th...
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CONCLUSION

Overall, there is good evidence that the Theory of Planned Behaviour and Health Belief Model can account for some of the factors that will determine health behaviour and that interventions based on these models are effective at changing behaviour. There is limited evidence to support the effectiveness of interventions based on the Transtheoretical Model. PRIME Theory has not yet been tested empirically, so it is not clear how effective it actually is at predicting behaviour and behaviour change.

From this chapter it should be clear that all of these models have various strengths and weaknesses. It should also be apparent that, although the models possess different concepts and underpinnings, many of the questions in the different case studies are similar and overlap. Thus, in clinical practice aspects of all these models can be mixed and used effectively to encourage people to change unhealthy behaviours. It is probable that different aspects of these models will work better for different clinicians and patients. However, a common implication is that we will need to explore each person's beliefs and reasons for behaving in the way they do in order to be most effective in helping them to change and develop an appropriate plan of change.

Summary

- Social-cognitive models of health behaviour take an expectancy-value approach and include the Health Belief Model and the Theory of Planned Behaviour.
- The Health Belief Model states a health behaviour change is determined by the threat of illness (perceived susceptibility and perceived severity) balanced by the perceived benefits and barriers to change. Triggers or cues to action can also be important in some cases.
- According to the Theory of Planned Behaviour a health behaviour is determined by intentions, which in turn are determined by attitudes towards the behaviour, social norms, and perceived behavioural control.
- The Transtheoretical Model of behaviour change is an integrative theory that focuses on the stages and processes of change, rather than the determinants of health behaviour.
- PRIME Theory is a recent attempt to integrate motivational and health behaviour theories to explain moment-to-moment behaviour. This theory focuses on plans, responses, impulses and inhibitions, motives, and evaluations as determining behaviour.
- There is evidence that the Theory of Planned Behaviour and Health Belief Model can explain some health behaviours, and that interventions based on these models are effective at changing behaviour.
- There is limited evidence to support the effectiveness of interventions based on the Transtheoretical Model. PRIME Theory has not yet been tested empirically so it is not yet clear how effective it is.
- Each model results in slightly different approaches to intervention, but aspects of all these models can be combined in clinical practice to encourage behaviour change.



FURTHER READING

- Ayers, S. et al. (eds) (2007) *The Cambridge Handbook of Psychology, Health and Medicine* 2nd edition. Cambridge: Cambridge University Press. This book has short chapters on many psychological factors relevant to health behaviour. It also has chapters on specific behaviours such as smoking cessation.
- Conner, M. & Norman, P. (eds) (2005) *Predicting Health Behaviour: Research and Practice with Social Cognition Models* (2nd edition). Maidenhead: Open University Press. This book provides a comprehensive and authoritative overview of psychological models of health behaviour, including many not covered here.
- Scriven, A. & Orme, J. (eds) (2001) *Health Promotion: Professional Perspectives* (2nd edition). London: Palgrave. This book provides a comprehensive overview of health promotion theory and also examines health promotion in the health service, schools, the voluntary sector, and the workplace.



REVISION QUESTIONS

- 1 What are health behaviours and how have they been categorised?
- 2 What biological, psychological, social, and societal factors influence health behaviours?
- 3 What is the expectancy-value principle? How is this relevant to health behaviour change?
- 4 Outline the Health Belief Model. How effective is it for behaviour change?
- 5 Outline the Theory of Planned Behaviour. How effective is it for behaviour change?
- 6 What is locus of control? How might it be relevant to clinical practice?
- 7 Outline the Transtheoretical Model. How effective is it for behaviour change?
- 8 Outline PRIME Theory. How might it be used to promote health behaviour change?
- 9 Compare and contrast two models of health behaviour change.
- 10 Describe how you might use one model of health behaviour to help someone give up smoking.