

1

Theories and models in communicating health messages

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Learning objectives:

- Define the term 'communication' and identify components of the communication process in a health promotion context.
- Explore communication theory in relation to health promotion practice.
- Apply theoretical models of health promotion to the health promotion and health education setting.

Communication has an essential role in any action that aims to improve health. It is difficult to imagine how a message could be delivered to promote healthy choices if we could not communicate. The communication process is a multi-dimensional transaction influenced by a variety of factors. In health promotion work the successful exchange of information between the practitioner and target audience is an area that has received mixed attention. Most commonly the emphasis on theory is clear, but the application of theory to practice is limited. This chapter introduces five theoretical models that can be applied to health promotion work. This chapter will seek to bridge the theory-practice gap using a range of examples enabling the practitioner to link theoretical models to practice.



Figure 1.1 The sender, message and receiver process

COMMUNICATION DEFINED

- Communication is a transactional process and in a health context it is an important part of health promotion work. Communication according to Minardi and Reily (1997) is an essential, instrumental and purposeful process. The communication transaction is one of sharing information using a set of common rules (Northouse and Northouse 1998). In *health promotion* communication is a planned process (Kiger 2004). The effectiveness of this planned process comes to fruition when the audience has achieved, acted on or responded to a message.

COMPONENTS OF COMMUNICATION

- ▶▶ The basic representative *model* of communication is usually conceptualized as a one-way flow process consisting of a sender, message and receiver (see Figure 1.1). In addition to this, fourth and fifth variables can be added: complete understanding by that receiver and feedback to the communicator. These last two variables are important for health communication as they imply two-way communication, thus moving away from the traditional concept of one-way communication towards multi-way communication. It is also important to remember that communication is a cyclic process involving a series of actions, thus a modified model can be represented as circular (see Figure 1.2).

FACTORS INFLUENCING COMMUNICATION

The multidimensional and dynamic nature of communication means that transactions contain other aspects that influence communication. Watzlawick et al. (1967) break communication down into 'content' and 'relationship'. The 'content' includes the message, the words and the information transmitted. The 'relationship' consists of the dynamics between those involved in the communication transaction—the communicator(s). This breakdown has the advantage identifying the content and the relationship between the sender and receiver separately. In *Communicating Health: Strategies for Health Promotion* the main sender is the health practitioner and the receiver is the intended audience (who will be discussed in more detail in Chapter 2). The content is currently of considerable interest in this chapter.

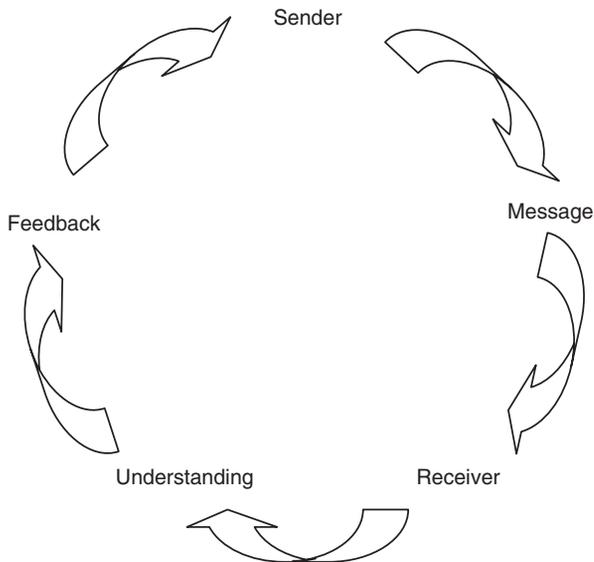


Figure 1.2 Communication as a multi-way process

The content of a message contains verbal and non-verbal communication. Verbal communication is the words, sentences and phrases used (Minardi and Reily 1997). Non-verbal communication, according to Ellis and Beattie (1986), contains the four elements of prosodic, paralinguistic, kinesics and standing features:

- *Prosodic elements* include intonation and rhythm. These can influence how the sender delivers the message and the receiver interprets it. For example, comprehension would alter if the sender of a message spoke quickly or slowly.
- *Paralinguistic features* include vocal but non-verbal expressions like 'mmm' or 'ahhh'. These can alter the way messages are communicated, particularly in relation to the **prosodic** features described above.
- *Kinesic elements* include body language, eye contact, posture or gestures. For example, different interpretations of messages would be transmitted by a sender who was trying to maintain eye contact as opposed to a sender who was looking at their feet.
- *Standing features* include factors such as appearance. Some people have pre-conceived notions of what practitioners who deliver health information should look like. This can include their dress, gender, ethnic group and other appearance-related factors.

Language and lexical content of the message is also important. Lexical content, which literally means the words, can be used positively or negatively. Using words from complex medical technology or abbreviating key terms can confuse messages and exclude the target audience, whereas using repetition has been positively found to influence communication (Pechmann and Reibling 2000).

As a health practitioner, the communication method will alter the importance of additional factors such as lexical content and body language. The communication

- process will dictate the aspects that are the most important. If you are sending every house in one area an information document about *prevention* of food-related illness and hence have minimal contact with the client group, your appearance and eye contact will be of little importance. If you are delivering a brief one-to-one intervention on stopping smoking in a health care setting your verbal communication, eye contact or appearance will be important.

COMMUNICATION IN HEALTH PROMOTION

- Communication in health takes place on many levels, including individual, group, organization, community or mass-media. Communication in health can be defined in much the same way as communication has generally been defined: a transactional process. The main difference in communicating health is that the focus is not a general one but one specific to health information. Kreps (2003) summarizes the addition of 'health' to the definition of communication as a 'resource' that allows health messages (for example prevention, risk or awareness) to be used in the education and avoidance of ill health. This broad definition incorporates the fact that health communication can take place at many levels and embodies a *holistic* approach to health promotion.

Activity 1.1: How are health promotion messages communicated?

There are a number of ways (or 'mediums') that can be used for communicating messages. Many of these can be used in communicating health messages.

- 1 Think of as many ways of communicating information as you can.
- 2 Which methods are most popularly used in communicating health promotion messages?

Communication methods can be divided into one of five categories: intrapersonal, interpersonal, organizational, community and public/mass communication. Figure 1.3 illustrates these five hierarchical categories and gives examples of the type of communication methods that can be included in these categories. 'Intrapersonal' incorporates internal communication. This includes what we think or listen to internally. Interpersonal communication is communication on a personal level. This includes one-to-one communication or small group communication. 'Organizational communication' includes communication in an organization, both formal and informal. 'Community' communication includes mediums that are used in community settings, for example local radio and newspapers. 'Public/Mass' communication is large-scale and includes national and international communication.

Communication category	Example of communication medium
Intrapersonal	Internal communication (for example, what we think, when we listen to an innervoice)
Interpersonal	One-to-one, small groups, emails, telephone calls and other activities that allow personal listening and response
Organizational	Lectures, seminars, debates, meetings, memos, intranets, newsletters, workshops, displays
Community	Local radio, talks, seminars, debates, local newspapers, bill boards, bus wraps, health fairs
Public/Mass	Newspapers, television, digital television, national radio, Internet, CD-ROMs, mobile phones

Figure 1.3 Communication in five categories

MODELS AND THEORIES OVERVIEW

The UK government *Choosing health: making healthy choices easier* white paper (DOH 2004) identifies one fundamental and important problem with health messages: that it is not a lack of information in health, but that it is ‘inconsistent, uncoordinated and out of step’ (DOH 2004: 21) with the way the population live their lives. This suggests perhaps that despite efforts from health practitioners, some messages are not as effective as they could be.

The Population Reference Bureau (2005) in the US suggests that human behaviour is the central factor in most leading causes of *mortality* and *morbidity*. They advocate that behaviour change strategies should be at the forefront of any attempts to reduce mortality and morbidity. Being able to predict behaviour makes it easier to plan an intervention (Naidoo and Wills 2000). Therefore the first stage of any communication *campaign* is to analyse the behavioural aspects of the health problem (Atkin 2001).

In addition it is proposed that if we can understand factors that influence behaviour ‘we will be in a better position to devise strategies and formulate methods that will achieve our *health education* goals – no matter what our philosophy or what model we choose to follow’ (Tones and Tilford 1994: 83). *Theory* enables the practitioner to predict the outcomes of interventions and the relationships between internal and external variables. Underpinning communication in health promotion should be an understanding of how and why people change their behaviours and at what point of intervention it is best to target a message. This allows identification of the actions needed to change that behaviour and highlights the pathways of influence that hinder (or promote) that behaviour.

Theories do not specifically identify an intervention to follow. Instead they generate a series of ideas for a theory-led intervention to adopt. There are several

theoretical models that identify influences in the behavioural change process. These are then selected according to what the practitioner wishes to achieve. The purpose of theory is to enable the successful exchange of information between the health promoter and the target audience (for example, the individual, group, population). The success of this process is often down to the influence of a number of variables. These include, for example, the relationship between the communicator and audience (as described earlier), the message itself, how the message is sent and the audiences' beliefs, values, attitudes. Theory can therefore help predict and explain behaviours, assist in the targeting of information and predict the effect that information will have. It also allows practitioners to predict why the audience may not undertake a behaviour no matter how much assistance or encouragement is available.

Theory is often used to inform the groundwork for health promotion, but is usually given less attention (if any at all) during the implementation of programmes (Kobetz et al. 2005). For example, a study by Abraham et al. (2002) examined health promotion messages in safer sex promotion leaflets. They found that the majority of the leaflets examined did not include, or refer to, messages that targeted cognitions and actions that are most strongly related to condom use. This highlights a clear gap between the evidence-based research and practice in relation to designing safer sex promotion leaflets.

The application of theory to practice is not an easy step. Health promotion in the past has made use of theory sporadically, and often inconsistently. Jones and Donovan (2004) argue that practitioners frequently ignore theory, failing to use and implement theory-based interventions. They suggest that practitioners lack the skills and knowledge needed to operationalize the generic theories and models available. This is not to say that all health practitioners are ignorant of the importance and use of theory: some practitioners may have a clear theoretical knowledge but lack the time, resources, expertise or evidence base to implement their knowledge.

If communication is based on a theoretical model, some of the pitfalls associated with poor communication can be eliminated. Tones and Tilford (1994) argue that practitioners need a framework to make a clear selection of outcome indicators and to justify choice. In addition this, it will provide a basis for best practice. In an age of cost-effectiveness alongside the move to evidence-based practice, the inclusion of theoretical models is an almost logical one. Kobetz et al indicate that 'construction and strategic dissemination of finely tuned, theory-based health messages' (2005: 330) alongside making theory practically relevant is one of the keys to effective communication.

Activity 1.2: Why not use theory?

- 1 List all the reasons that you can think of as to why a health practitioner may not use theory in their work.

WHY USE THEORETICAL MODELS?

Models are derived from a simplified version of theory and can be used to guide the development of health promotion programmes. Theories and models are 'useful in planning, implementing and evaluating interventions' (Trifiletti et al. 2005: 299). Models in health promotion usually seek to include key elements important to behaviour and decision-making processes. In health promotion and health education, models are often borrowed from areas of social psychology or health communication and applied to health contexts.

Theories are valued in the field of health promotion because of their use in explaining influences on health alongside the ability to suggest ways where individual change could be achieved (Parker et al. 2004). Effective communication strategies should be grounded in a sound theory (Airhihenbuwa and Obregon 2000). They can be used to design and plan health promotion strategies and to generate decisions and solutions, ensuring that all variables are taken into consideration (Tones and Green 2004). As Lewin surmises, 'there is nothing more practical than a good theory' (1951: 169).

PROBLEMS ASSOCIATED WITH A THEORY-BASED APPROACH

Although the evidence for using theory is difficult to refute, the use of theory is not without its problems. Tones and Green (2004) highlight the concern that theory objectifies human experience and through this process deviates from the main health promotion ethos of *holism* and *empowerment*. This means that a person is seen as someone who can be measured, analysed, adjusted or directed. This process opposes the idea of the person being seen as a holistic whole, and is reductionist in nature. A broader concept of theory should perhaps be taken to alleviate the narrow, mechanistic focus that theory may have. Airhihenbuwa and Obregon (2000) suggest that theoretical frameworks should be flexible and therefore applicable to different contexts. Theory should be used as a means to guide the understanding of complex behaviour, rather than a rigid model that should be followed. In addition, Parker et al. (2004) suggest that designing interventions that attempt to focus on all aspects of a model may be both daunting and unrealistic. A suggestion is to focus on certain 'leverage points' or two or three stages in a model, for example 'subjective norms' or 'intentions'. This may also be more practical for health promotion work.

The other key criticism of the theory-based approach is that structural, political and environmental factors are excluded in many theoretical models. Behaviour and influences on behaviour are altered by the wider societal context and theory often focuses on individuals only. This approach alone will not be effective without other enabling factors present to assist the facilitation of a behaviour change. It is

important to remember when designing communication campaigns that supportive environments are available to facilitate change. Wider societal influences are sometimes difficult to control, for example government priorities, thus ambitions and objectives may need to be adjusted accordingly.

Activity 1.3: The role of wider determinants of health

As a practitioner it would be difficult to advocate change without considering the wider determinants of health, for example, location of facilities, political contexts or environmental influences. It would be difficult to advocate healthy eating in older people, for example, if there were no shops nearby selling fruit and vegetables. How would you do the following?

- 1 Promote cycling to work when no-one has a bicycle, and appropriate funds for bicycles or cycle paths are not available?
- 2 Encourage children to play in fenced park areas when there are no safe outdoor places to play or the nearest park is some distance away?

THEORIES

There are a multitude of theories that can be used in the communication of health. Five theoretical models have been selected to cover a wide range of contexts for the purposes of this textbook. This is by no means definitive coverage of the theoretical models available to the health practitioner. The models chosen have been selected for their suitability and popularity in the communication of health messages and their use in designing simple messages in leaflets to large-scale *mass media* campaigns. The models selected encompass a variety of approaches that lend themselves to different communication projects in the health field.

In this chapter we will consider two types of theoretical models: cognitive theories and stage-step theories:

- ▶▶ *Cognitive theories* provide 'continuum accounts of behaviour' (Rutter and Quine 2002 p.15), proposing that a certain set of perceptions or *beliefs* will predict a behaviour. In the cognitive theories section the *Theory of Planned Behaviour* (Ajzen 1980) and *Health Belief Model* (Becker 1974) will be examined, and applied to the health communication context.
- ▶▶ *Stage Step theories* assume that the individual is not on a continuum (as they are in cognitive theories) but at a 'step' or 'stage'. Each step on the model is a move forward towards achieving the behaviour. Stage-step theories postulate that the individual goes through a process of change via a series of stages. Their format can be represented as cyclic or a literal series of steps. In this section the 'transtheoretical model' or 'stages of change model' (Prochaska and Diclemente 1983), the 'process of behavioural change' (Population Communication Services/Centre for Communication Programmes 2003) and the '*communication-persuasion matrix*' (McGuire 1976, 2001) will be explored.

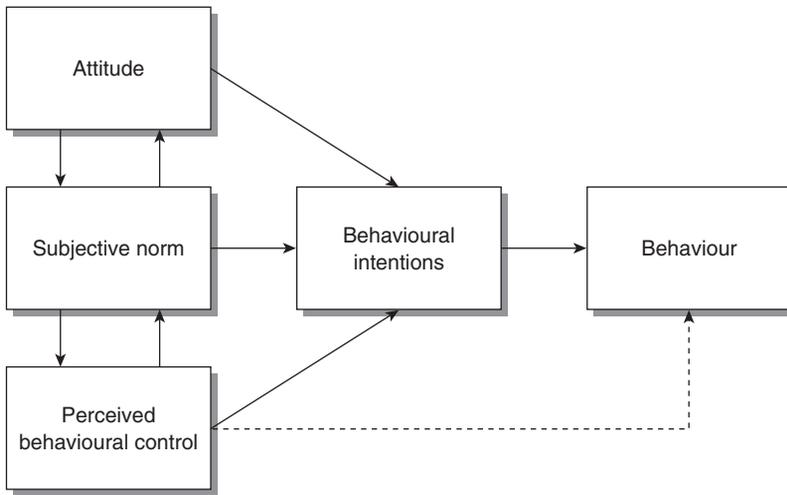


Figure 1.4 The theory of planned behaviour, adapted from Ajzen (1991)

THE THEORY OF PLANNED BEHAVIOUR (TPB)

This theory is the modified version of the *theory of reasoned action* (TRA) (Ajzen and Fishbein 1980), where the additional variable of ‘perceived behavioural control’ has been added. The TRA originally proposed that any intervention attempting to change behaviour should focus on beliefs, as these influence *attitudes* and expectations and in turn influence intentions and behaviours. It was then proposed that behaviours are *not* under ‘volitional control’ and the model was re-visited and expanded to include ‘perceived behaviour control’ (Rutter and Quine 2002). The TRA was revised to the *theory of planned behaviour* (TPB) (Ajzen 1991). The TPB follows the same hypothesis as the TRA with the addition of ‘behavioural control’ as a determinant of behavioural intention and behavioural change (see Figure 1.4).

The TPB states that the closest determinant of behaviour is the intention to perform (or not perform) that behaviour (Jackson et al. 2005; Lavin and Groarke 2005). The TPB’s main determinant of behaviour is based on the person’s intention to perform that behaviour, and intention is determined by three factors:

- 1 *Attitude to the behaviour*: the balancing of the pros/cons of performing the behaviour or the risks/rewards they associate with that choice.
- 2 *Subjective norm*: social pressure from significant others, for example peers, media or family.
- 3 *Perceived behavioural control*: the perception that person has about their ability to perform the behaviour.

This model can be represented more simplistically (see Figure 1.5). The simplistic version of the model proposes that the more positive the attitude, supportive the

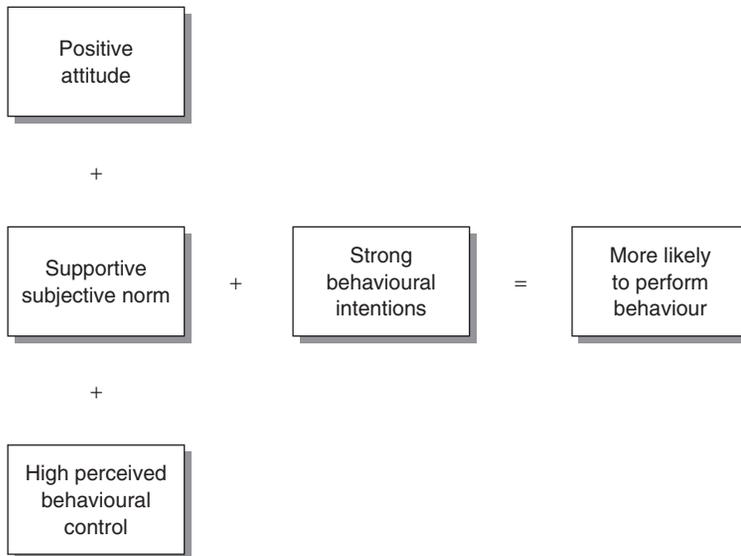


Figure 1.5 A simplistic view of the theory of planned behaviour hypothesis

subjective norm and higher the perceived behavioural control *and* the stronger the intention, the more likely it is that a person will perform that behaviour (Lavin and Groarke 2005).

Activity 1.4: The theory of planned behaviour in action

Daniel has been going to the gym for a few weeks as he wants to build up his muscles to make him look good. He has noticed no improvement so far in his muscles and the gym is costing him money. Daniel gets talking to one of the staff at the gym and explains how he feels and asks for some advice. The member of staff suggests he tries taking a supplement like steroids to help him build up his muscles. The staff member says he uses steroids and he feels great, and gained muscles in 'no time'.

- 1 Using the theory of planned behaviour, do you think he will take the steroids?

The TPB has been widely applied in the context of understanding and predicting behaviour (Bledsoe 2005). Recently it has been used for a number of different health behaviours, including promoting walking among sedentary adults (Reger et al. 2002), smoking cessation (Bledsoe 2005), a predictor of exercise take-up (Norman et al. 2000; Kelley and Abraham 2004), exercise motivation (Papaueisis et al. 2005), dental floss behaviour (Lavin and Groarke 2005) and blood donation behaviours (Giles et al. 2004).

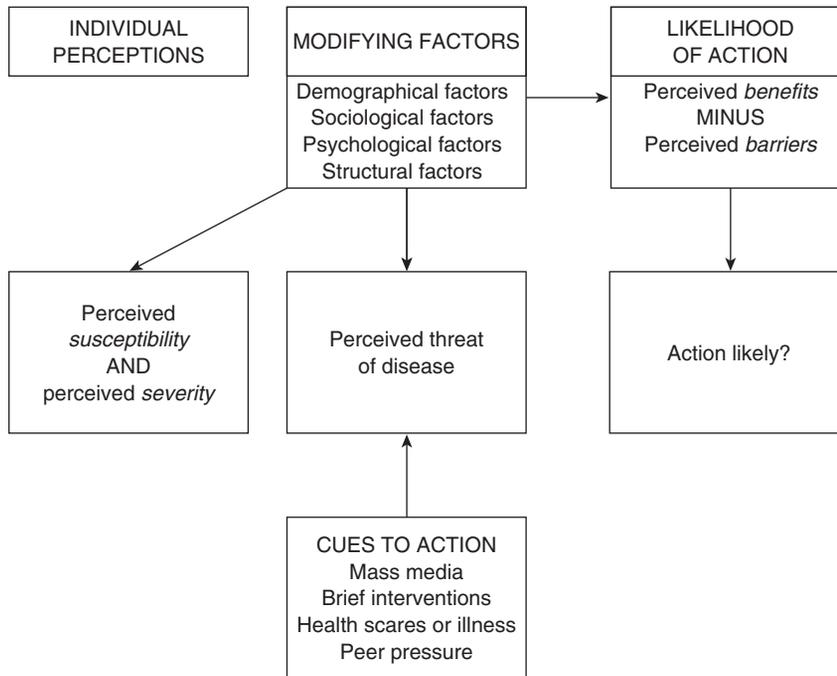


Figure 1.6 The health belief model adapted from Rosenstock et al. (1988)

HEALTH BELIEF MODEL

Becker (1974) developed the *health belief model* (HBM) from the work of Rosenstock (1966). This model can be used as a pattern to evaluate or influence individual behavioural change. Figure 1.6 illustrates the health belief model. ◀◀

The model proposes that a person's behaviour can be predicted based on how vulnerable the individual considers themselves to be. 'Vulnerability' is expressed in the HBM through risk (perceived susceptibility) and the seriousness of consequences (severity). These two vulnerability variables need to be considered before a decision can take place. This means a person has to weigh up the costs/benefits (Naidoo and Wills 2000) or pros/cons of performing a behaviour. For example, this could include how 'susceptible' they feel they are to contracting an illness, for example mumps, and how 'severe' the consequences of having mumps is, or how 'susceptible' they are to an injury, for example falling off a bicycle without protective clothing, and how 'severe' the consequence will be. A person's decision to perform the health-promoting (or damaging) behaviour will be based on the outcome of this 'weighing up' process. Self-efficacy is also added to the HBM to enable prediction of behaviour. Self-efficacy is a person's perceived confidence of their ability to perform that behaviour.

The HBM includes four factors that need to take place for a behaviour change to occur:

- 1 *The person needs to have an 'incentive' to change their behaviour*
For example: An 'incentive' for a person to stop smoking could be the desire not to smoke around a new baby.
- 2 *The person must feel there is a 'risk' of continuing the current behaviour*
For example: By not taking preventive measures, such as compliance with anti-malarial drugs in a high malaria risk area, a person would feel that they would be putting themselves at 'risk' of contracting malaria.
- 3 *The person must believe change will have 'benefits', and these need to outweigh the 'barriers'*
For example: A person may believe that the benefits of using a bicycle helmet means they are less likely to have a serious head injury if they fall off their bicycle. They also identify that the barriers to wearing one; they are cumbersome to carry throughout the day. The 'benefits' must outweigh the 'barriers' in order for a change to be made.
- 4 *The person must have the 'confidence' (self-efficacy) to make the change to their behaviour*
For example: A person must believe they have the ability to cut down their fatty food intake to help them lose weight and are 'confident' about their abilities to do this.

The HBM additionally suggests that there is a 'cue to action' to prompt the behaviour change process. This could be a conversation with a friend or a television programme. Alternatively, it could be an external prompt, such as moving employment. The prompt, however, has to be appropriate to that person or, as Naidoo and Wills suggest, this cue needs to be 'salient or relevant' (2000: 225).

The HBM also considers 'modifying factors' important to behaviour change. These include demographic variables, socio-psychological variables and structural variables that influence how a person perceives the disease severity, threats and susceptibility. Factors such as age, gender, peer pressure or prior contact with the disease also impact on the decision-making process.

Case Study 1.1 The health belief model in action

Theo never wears a seatbelt. He has never crashed his car and thinks he is a good driver. He thinks seatbelts restrict his movement when driving, and none of his friends wear seatbelts either.

Outcome: Using the HBM, the benefits Theo sees of wearing a seatbelt are minimal, and the barriers to wearing one are numerous (ruins his image, restrict movement etc). It is likely that his decision will be that he does not wear a seatbelt as the costs (ruined image, restricted movement) outweigh the benefits (safety, injury prevention).

Activity 1.5: The health belief model in action

Suki is a 10-a-day 'social' smoker. She has been sent an email about 'No Smoking Day' in March from one of her friends. She has often seen advertisements about stopping smoking, but do not think they apply to her as she is a 'social' smoker, and only smokes in the evenings when she goes out with her friends and has a drink after work. Her father has lung cancer from smoking, and is currently in hospital.

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- 1 Using the health belief model, what is the likelihood that she will stop smoking on 'No Smoking Day' in March?
- 2 What health promotion advice could you give Suki?

This model, and elements from it – particularly 'perceived barriers' and 'perceived susceptibility' – has been used to predict preventive health behaviours (Naidoo and Wills 2000) and sick role behaviours (Janz and Becker 1984). Recently these have included the practice of adolescent health behaviours to prevent SARS (severe acute respiratory syndrome) (Wong and Tang 2005), sexual behaviours and risk-taking (Lin et al. 2005), choices to use public transport (Mulberry Research and Consulting Group 2004), risk of BSE (bovine spongiform encephalopathy) and dietary behaviours (Weitkunat et al. 2003), and vaccination behaviour (De Wit et al. 2005).

CRITICISMS OF COGNITIVE THEORIES

There are a number of criticisms of TPB and the HBM alongside other social cognitive models. Social cognitive models (the HBM in particular) emphasize a rational approach to behaviour and may exclude influential aspects such as friends, family or social norms. The TPB places emphasis on attitudes as a predictor of behavioural intention, but behaviour cannot necessarily be predicted by attitudes (Naidoo and Wills 2000). Careful consideration of which attitudes are more likely to lead to a behaviour intention needs additional thought. The exclusion of the wider determinants of health from social cognitive models is a frequently cited criticism. Without identification of these wider determinants, some aspects of social cognitive models may not actually determine behaviour.

Another criticism of these models is that they may be more suitable for small or high-risk populations, rather than large-scale high-risk populations (Elder 2001). The role of behavioural intentions may also be less important in non-Western cultures, as these theories assume a degree of autonomy alongside the Western biomedical model (King et al. 1995). In addition, the role of cultural contexts is missing and in non-Western populations these theories may be less culturally sensitive (Lin et al. 2005), especially if they promote individualism and remove emphasis on family or group behaviours (Airhihenbuwa and Obregon 2000). Careful examination of these aspects needs consideration before a model is chosen for use.

TRANSTHEORETICAL MODEL (TTM) (OR STAGES OF CHANGE MODEL)

The *transtheoretical model* (TTM), more frequently referred to as the 'stages of change' model, is a cyclic model developed by Prochaska and Diclemente (1983). ◀◀

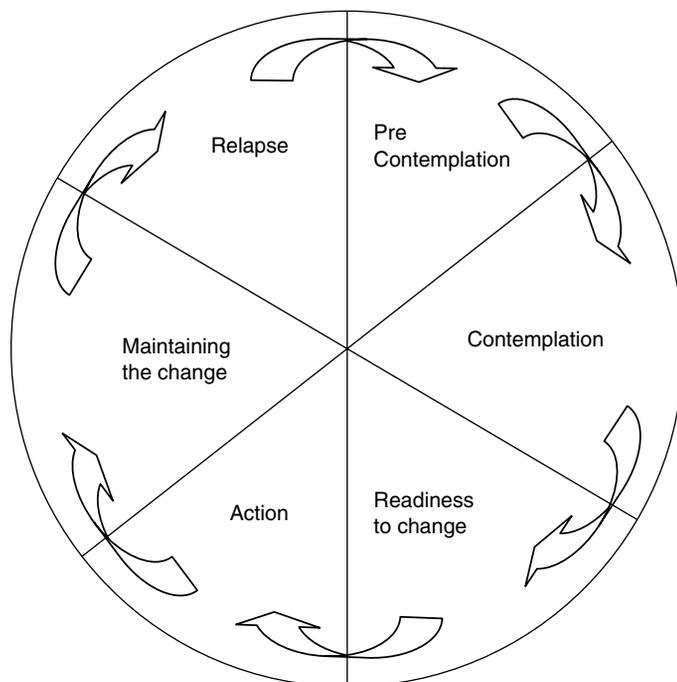


Figure 1.7 The transtheoretical model, adapted from Prochaska & Diclemente (1983)

The model suggests that people change their behaviour at certain stages in life, rather than making one major change. During these incremental stages, they consider whether or not to make changes to their behaviour (see Figure 1.7).

This cyclic model is based on the premise that people are at different levels of readiness to change, and during the change process they move through a series of stages. People move from *precontemplation* (not ready to change) to *contemplation* (thinking of change), to *preparation* (getting ready to change), to *action* (performing the change), to *maintenance* (continuing the change), to *relapse* (abandoning changes and reverting to former behaviours). A person may start at any of these stages and may move between stages.

Case Study 1.2 Physical activity and the transtheoretical model (TTM)

Precontemplation: A person who is sedentary and does not perceive any risks in being sedentary would be in the precontemplation phase of the TTM as they are not ready to change their behaviour yet. They cannot see any harm or risks in remaining sedentary.

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Contemplation: A person who is sedentary, but is aware of the risks of being sedentary and is perhaps considering the benefits or cons of exercise would be in the contemplation stage.

Preparation: Someone who is sedentary but has gone to the local gym to sign up for aerobics classes or is planning a walking route to work, would be in the preparation stage as they are getting ready to change.

Action: A person who has started exercising as has done so for a number of weeks would be in the action phase.

Maintenance: Once the person has been performing that behaviour (usually for six months or more), they are in the maintenance stage.

Relapse: At any of these stages, a person could 'fall off' this cycle. Perhaps despite planning they started to exercise for a few weeks before stopping. At this stage the person is seen to 'relapse' and then will move backwards to another stage of the cycle.

The TTM uses are extensive and the model has frequently been used in targeting intervention programmes and *tailoring information* to appropriate stages of change. Kidd et al. (2003) indicate that the TTM could provide precision when examining effectiveness and long-term efficacy in an intervention. It has also been said that it is a model that is 'simple, powerful, discerning and practical' (Brug et al. 2005). One of the most appealing aspects of the TTM to practitioners is its simplicity. Although originally designed for smoking interventions, recently the TTM has been used in areas that include promoting fruit and vegetable consumption (Ruud et al. 2005), injury prevention (Kidd et al. 2003) and physical activity (Marshall and Biddle 2001).

Activity 1.6: The transtheoretical model (TTM) in action

Where would you place these people on the transtheoretical model? Use Figure 1.7 to help you.

- 1 'I now go to the dentists every 6 months for a check-up after that abscess in my tooth – it was so painful.'
- 2 'I have been eating healthier for the last month.'
- 3 'I have cycled to work for just over a year now, it's so much quicker than sitting in traffic.'
- 4 'Cigarettes can't kill you! My uncle lived until he was 102 and he smoked all his life.'
- 5 'I have joined the local gym and am going to my first class on Monday, and I have arranged for my children to be looked after by a neighbour.'
- 6 'I enjoy getting drunk with my friends, but my hangovers are getting worse and I would really like to have time to do more at the weekend.'

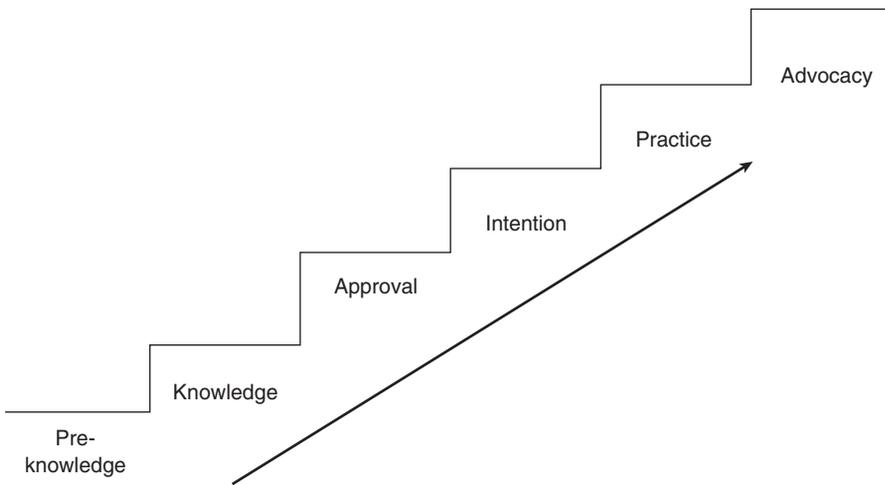


Figure 1.8 The perceived behavioural control (PBC) model, based on population Communication Services/Centre for Communication programmes

PROCESS OF BEHAVIOUR CHANGE (PBC)

- An alternative model to the TTM is the *process of behaviour change* (PBC) model. Described by the Population Communication Services/Centre for Communication Programmes (2003) in the US, this model recognizes communication as a process where people can move between the stages of the PBC framework. Different messages are sought depending on where the person is on the PBC framework. The main difference between the PBC and the TTM is that the model is not seen as circular, but as a series of 'steps' where a person moves upwards towards the final goal.

In the PBC people move through the following steps:

- *Preknowledge*: when a person is unaware of any risks or problems associated with their behaviour.
- *Knowledgeable*: when a person is aware of the problem and of the risks attached to their behaviour.
- *Approving*: when a person is in favour of changing their behaviour.
- *Intending*: when a person is intending to take action to change their behaviour.
- *Practicing*: when the intended behaviour is being practiced.
- *Advocating*: when the new behaviour is being implemented and when a person then advocates that behaviour to another.

Case Study 1.3 Eating more calcium-rich foods and the perceived behavioural control (PBC) model

Preknowledge: This step is when a person is not aware they may need to eat more calcium-rich foods.

Knowledgeable: When a person has the knowledge that calcium-rich food may reduce deficiency diseases such as osteoporosis.

Approving: This step is when the person is in favour of eating more calcium-rich foods.

Intending: This step is when that person wants to change their behaviours (i.e. their diet) and intends to eat more calcium-rich foods.

Practicing: This step is when a person starts to eat more calcium-rich foods.

Advocating: The person has been practicing eating calcium-rich foods over a period of time and is advocating the behaviour (calcium-rich foods) to others.

Activity 1.7: The perceived behavioural control (PBC) model in action

You are working in a local community and you want to raise awareness about new recycling bins that are now available for community use. You are trying to encourage those that use the recycling bins already to advocate using them to others.

- 1 What would people need to do at each step on the PBC model to achieve this?

CRITICISMS OF STAGE-STEP THEORIES

Stage-step models have been criticised for a number of reasons. First, people have competing priorities and therefore the behaviour (for example, stopping smoking) may not be seen as important to that person at that time (Naidoo and Wills 2000). Practitioners and the targeted individual's idea of which stage the person is in may conflict or be inaccurate (Brug et al. 2005). Some people may place themselves at wrong stages on the model, or their actions are interpreted as being in a different phase than they actually are. This may lead to limited success. West (2005) argues that some of the stages are 'soft' options, for example

moving from pre-contemplation to contemplation, is not a strong move to change behaviour as there is no measurable behaviour change. West (2005) also argues that the TTM assumes that the individual has made a rational plan (for example, to quit smoking), that it does not take into account entrenched habits or irrationality. Aspects included in social cognitive models, for example *self-efficacy*, attitudes or subjective norms, are not included in the TTM.

Brug et al. (2005) debate a variety of aspects of the TTM. They consider that it is difficult to apply to complex behaviour, especially if environmental variables are also needed to change (for example, behaviours that need money or transportation). They also argue that the TTM is more likely to change short-term behaviours than long-term. Rutter and Quine (2002) highlight a number of current debates about stage-step models, including the premise that barriers are the same for each individual at each stage. Individuals put different emphasis on different barriers (something that cognitive models recognize) and the TTM makes the assumption that these barriers will all be similar.

THE COMMUNICATION-PERSUASION MODEL AND THE INFORMATION-PERSUASION MATRIX

The communication-persuasion model (McGuire 1976, 2001) is different from other theoretical models in the health field, and its uses are predominately found in the field of advertising. The communication-persuasion model has guided *public health* communication particularly in using mass media (Elder 2001), which makes it different from other health promotion models that traditionally focus on small-scale, at-risk populations. This model has been used in a variety of ways. These include the examination of consumer behaviour in response to messages; for example, Kaphingst et al. (2004) use McGuire's communication-persuasion matrix to help analyse direct-to-consumer television prescription drug adverts.

McGuire is responsible for developing both an information-persuasion model (IPM) and the communication-persuasion model. The IPM can be used in conjunction with an information-persuasion matrix (McGuire 2001). According to McGuire (1976) the IPM proposes three factors that can influence a person's choice.

- *External factors*, for example price or location.
- *Internal directive factors*, for example individual attitudes or beliefs.
- *Internal dynamic factors*, for example demographic characteristics such as age or ethnicity.

The main concern of the IPM is 'internal' factors. These factors are seen to influence or change the message as it moves through the communication-persuasion model, and its progressive input-output steps.

Input Communication Factors		
	<i>INPUT</i>	<i>Factors in this 'input' section include:</i>
1	Source	Demographics, credibility, attractiveness etc.
2	Message	Appeal, organization, style etc.
3	Channel	Type of media used, i.e. television
4	Receiver	Demographics, social/psychological factors
5	Destination	Immediacy/delay, prevention/cessation
Output Persuasion Techniques		
	<i>OUTPUT</i>	<i>Description of what happens at each step:</i>
1	Tuning in	Exposure to the message
2	Attending	Paying attention to the message
3	Liking	Liking and being interested in the message
4	Comprehending	Understanding the message
5	Generating	Related cognitions
6	Acquiring	Gaining the appropriate skills to act on the message
7	Agreeing	Agreeing the message is correct
8	Storing	Saving the message to memory
9	Retrieval	Retrieval of the message from memory when needed
10	Decision	Acting on the message
11	Acting	Performing the action
12	Post-action	Integration of the action into behaviour
13	Converting	Advising others to behave likewise

Figure 1.9 Information persuasion matrix, adapted from McGuire (2001)

The communication–persuasion model can be characterized as an input–output matrix that can be manipulated and measured to achieve a change. The communication ‘input’ factors contain five separate stages of communication: source, message, channel, receiver and destination. These input variables provide options for health practitioners to select and manipulate. These ‘input’ variables are the main step in achieving the ‘output’ variables. Figure 1.9 illustrates how McGuire has split these five ‘Input’ variables into sub-divisions, for example, attractiveness or non-verbal aspects.

The 13 output variables (or stages) are a sequence of events that, according to McGuire (2001), must take place in an order (1 to 13) to enable the message to have an effect and a change to happen. It is assumed that a person cannot, for example, complete step 6 (acquiring relevant skills) without first completing step 2 (attending to the communication). In some way this is similar to the PBC model of ‘steps’ where the message can only be acted upon when the person has moved up the steps. McGuire is proposing that all of these stages must be completed to reach the final stages of 11 (acting on the message) to 12 (post-action cognitive

integration of the behaviour) to finally 13 (proselytizing, or advocating, others to behave likewise).

Case Study 1.4 Communication–persuasion model in practice: 5 a day

- 1 **Tuning in:** Exposure to the five-a-day message.
- 2 **Attending:** Paying attention to the five-a-day message.
- 3 **Liking:** Liking and being interested in the message.
- 4 **Comprehending:** Understanding the message concept (i.e. need to eat five different types of fruit and vegetables every day).
- 5 **Generating:** Related cognitions (thinking what would need to be done to eat five a day).
- 6 **Acquiring:** Gaining skills to act on the message, for example cooking, shopping, changes to diet.
- 7 **Agreeing:** Agreeing to eat five a day.
- 8 **Storing:** Storing the five a day.
- 9 **Retrieval:** Being able to retrieve five a day at appropriate times (i.e. in the supermarket, when cooking).
- 10 **Decision:** Deciding to eat five fruit and vegetables every day.
- 11 **Acting:** Eating five fruit and vegetables a day.
- 12 **Post-action:** Continuing to eat five a day.
- 13 **Converting:** Encouraging or advising others to eat five a day.

Activity 1.8: The information persuasion matrix in action

Using Figure 1.9 to help you, what would a person need to do at each of the 1–13 stages to successfully perform the following behaviour:

- 1 Respond to a message that says, 'Use a condom to prevent sexually transmitted infections' (aimed at 16–18-year-olds).

The advantage of this model is that it has clear planning stages that can be followed in order to obtain an outcome. For example, Bull et al. (2001) used the communication–persuasion matrix and found that there were a number of features of printed health education materials that can lead to behaviour change in overweight adults. These include attractiveness, encouragement, levels of information and application to ones' self. These were all associated with the early steps in the communication–persuasion matrix. This suggests that these might be areas to focus on when designing health promotion materials to enable progression through the stages of the matrix. Alcalay and Bell (2000) propose that one advantage of this

module is that *evaluation* has to be included in the communication strategy as it is built into the model. The model can also help practitioners to identify and consider channels and strategies that can influence the campaign outcomes. Given the emphasis on each stage, each message stage can be examined for impact, appropriateness and effectiveness. ◀◀

CRITICISMS OF THE COMMUNICATION–PERSUASION MODEL

This model has been criticised for a number of reasons. These include having an overly restrictive number of steps in order for a behaviour change to take place (Scholten 1996) – the TTM and the PBC have around half this number. McGuire (2001) himself considers that the matrix may restrict concentration on a single variable at a time, as they all interact with one another. McGuire also considers that the matrix assumes rational behaviour and the process of response to a message may not be a linear process. The analogy to an information processor (or computer) is evident in the title of the model itself. As with the criticisms highlighted in the cognitive models, people do not necessarily act in a rational or logical manner, and do not process information in a rational way. Finally, Huhman (2004) suggests that as the audience processes a message, a percentage of this audience are lost at each step. Therefore for this model to be effective high exposure, and high awareness levels, are essential. The model lends itself therefore to more high-profile, high-level communication than smaller communication efforts.

PRACTICAL IMPLICATIONS: WHICH THEORETICAL MODEL?

There are many models and theories in use in the respective disciplines of communication and health promotion. Some of these are of more use to the health practitioner than to others. It is not simply the case that ‘one model fits all’. Communication in the health setting uses different methods, with different messages for different audiences. All the models described (alongside some not described – see the additional reading section at the end of this chapter) have the potential to be utilized effectively in the communication of health promotion and health education messages.

There are no set guidelines for practitioners to help them select which model to use. Tones and Green (2004) list a series of questions that the practitioner could consider before selecting models;

- Does it include all relevant variables?
- Does it make logical sense to use this model in this particular situation?
- Has it been used elsewhere for similar purposes?
- Are there any studies to illustrate its use in the chosen area?

MODEL	Client/person contact	Example settings	Examples of topic interventions
Theory of planned behaviour (TPB)	Face-to-face Groups Mass media	<i>Group settings</i> Church, schools, universities, workplaces <i>Wider settings</i> Communities, towns	<ul style="list-style-type: none"> • Physical activity • Accident/injury prevention • Tobacco uptake • Oral health • Alcohol/drug misuse
Health belief model (HBM)	Face-to-face Groups	<i>Group settings</i> Church, schools, universities, work places	Preventive behaviour: <ul style="list-style-type: none"> • Physical activity • Sexual health • Vaccinations • Dietary changes
Transtheoretical model (TTM) or perceived behavioural control (PBC)	Face-to-face Groups Self-help (i.e. via Internet)	<i>Medical settings</i> General practice, dentists, pharmacies <i>Group settings</i> Schools, universities, workplaces <i>Service settings</i> Stop smoking Groups, Screening	<ul style="list-style-type: none"> • Tobacco • Physical Activity • Alcohol/drug misuse • Accident/injury prevention • Cancer screening • Nutrition/diet
Communication–persuasion matrix	Little or no person contact (i.e. mass media)	<i>Wider settings</i> Communities, neighbourhoods, towns, cities	Wider public health issues: <ul style="list-style-type: none"> • CHD • Cancer • Tobacco • Infectious disease • Prescription drugs

Figure 1.10 Examples of theoretical models that can be used in practice by group, setting and intervention

Alongside these questions, selection of theoretical models can include personal choice, target group, funding, time, influences of stakeholders, size of project and behaviours that are being targeted. Figure 1.10 illustrates each theoretical model with the common client/person contact that it has been used for. The table also shows settings where this model has been applied and the appropriate topic interventions. This is by no means a comprehensive list of every setting or topic these models have been used for, and practitioners should investigate their own topic fully before selecting a model(s) of choice to use in their communication project.

PRACTICAL IMPLICATIONS: GETTING STARTED

Often models assume some pre-contact with the client/person before an intervention can take place. For example, if you can identify the barriers that the client groups experience or the attitudes that are shared in relation to behaviours, it is easier to identify the topics to address. Communicating with your chosen target group before your intervention commences enables you to foster a more *bottom-up approach* to health communication, facilitating a transactional information exchange process. ◀◀

However, if you cannot access the target group beforehand, this makes things more complex. How do you know that your intervention will be successful if you cannot ask any questions beforehand? Also the planned intervention will be taking a *top-down approach*, communication will be one-sided and may exclude the very group you are trying to reach. The principles of evidence-based practice (see Chapter 7), alongside researching other campaigns in your chosen area, will be of help here. ◀◀

PRACTICAL IMPLICATIONS: INDIVIDUAL CHANGE v STRUCTURAL CHANGE

Cohen et al. (2000) argue that there are two basic targets of health interventions and all interventions can be divided into these two main targets:

- *Target one* is those interventions that seek to change individuals and in the control of individual(s).
- *Target two* is those that seek to change structures and are therefore outside of the control of the individual(s).

Interventions that use an individual approach usually want to influence or change attitudes, beliefs, knowledge or skills. Those at a structural level seek to change variables out of the individual control, for example, by adapting environments or increasing accessibility of services. Interventions can also be a combination of the two.

Case Study 1.5 Individual change and structural change

A peer education campaign in a university that aims through role play to change first year student's condom negotiation skills would be classed as having an individual change target (the change is in the control of the individual).

Structural change: A campaign that aims to increase the amount of condom machines available throughout the university would be classed as having a structural change target (the change is in the control of the authorities fitting the machines).

A combination: Individual and structural change: a campaign that aims to use peer education through role play to change students' condom negotiation skills alongside increasing the amount of condom machines available throughout the university and in first-year halls of residence.

Activity 1.9: Individual, structural or both?

Examine the following communication projects and identify if you think they are: *Individual, Structural or both.*

- 1 A teacher led project in a secondary school that aimed to introduce female pupils to three new types of physical activities (dance, tai-chi and yoga) to encourage positive attitudes to physical activity.
- 2 A video designed by a major airline to encourage chair exercise to decrease the risks of DVT on aeroplane flights screened to all passengers on flight take-off.
- 3 A programme run by a transport service to introduce newly designed bus services in a capital city and extend existing bus routes.

THE THEORY OF PLANNED BEHAVIOUR IN PRACTICE

Application of the TPB is particularly useful when there is access to a group first, allowing the mapping of major beliefs that may help or hinder performance of behaviours. One of the other advantages of this model is the inclusion of the 'subjective norm' allowing focus on peer or family influences. Recent campaigns have focussed on behavioural beliefs, normative beliefs and perceived behavioural control. Stead et al. (2005) give an overview of the 'Fools speed' driving campaign in Scotland in 1999–2001. The intervention aimed to target behavioural beliefs, normative beliefs and perceived behavioural control. Behavioural control messages focused on the consequences of speeding, for example, causing an accident. Normative beliefs focused on how others perceived speeding, and perceived behavioural control was used to remind drivers that they could control their own speed. Case Study 1.6 illustrates the theory of planned behaviour in action in a different context (physical activity).

Case Study 1.6 Theory of planned behaviour in action

The campaign 'Wheeling walks' in West Virginia (Reger et al. 2002) utilized a variety of strategies to promote walking among sedentary adults. In order to identify physical activity and walking habits, they used a telephone survey questionnaire alongside behavioural observation measurements to literally count the number of walkers. They used the TPB (and the TTM) to encourage behaviour change. In their use of the TPB they identified one barrier as an 'I don't have time' belief. They selected this as the basis for their advertisements and focussed on suggestions for starting low, for example 10 minutes a day compared to the 30 minutes a day of a television programme. The concluding statement was 'Isn't it time you started walking', hence challenging the 'I don't have time' belief.

THE HEALTH BELIEF MODEL IN PRACTICE

The health belief model can be applied to a variety of health behaviours. Interventions using this model usually aim to influence the 'perceived threat of disease' variable and hence change the susceptibility/severity balance. The main way of doing this tends to be directing information that has an emotional appeal or contains a strong fear or emotional response. Topics such as drink-driving, accidents, domestic violence, substance misuse (particularly illegal drugs) and road safety are good examples of this and often lend themselves to creating an emotional response to the topic (see Chapter 4 for more on this topic).

As the health belief model suggests that barriers may be more important than benefits (Lajunen and Räsänen 2004; Janz and Becker 1984), barriers may also provide a focus for targeting communication. For example, studies indicate that concern about pain in *screening* for preventive behaviours (Bryd et al. 2004; Weinberg et al. 2004 in colon and cervical screening) can be a significant barrier to overcome. If a practitioner can identify barriers to performing behaviours, an intervention can focus on these to promote a behaviour change. ◀◀

Other aspects of the HBM have also been found to be associated with behaviours. Moser et al. (2005) found perceived benefits to be a predictor of fruit and vegetable consumption. Lin et al. (2005) suggests that self-efficacy is a strong predictor of sexual behaviour, whereas Weltkumat et al. (2003) found 'perceived threat' important to an aspect of dietary behaviour. De Wit (2005) promotes the use of perceived susceptibility and severity as being important components of interventions, thus illustrating that 'part's of the TPB could be used in practice'. See Case Study 1.8 for an example of perceived severity/susceptibility in action.

Case Study 1.8 The health belief model (HBM) in practice – asthma

A Community Action Against Asthma (CAAA) example (Parker et al. 2004).

As part of the CAAA, the HBM was used to target information to children with asthma and their care-givers, given by a community environmental specialist (CES). Education messages were aimed at increasing *perceived susceptibility* and increasing the care-givers *perceived severity* by identifying with the care-givers different types of environmental allergens or irritants and how they can affect children's asthma. To increase care-givers' *perceived benefits*, the CES practitioner explained links between reducing environmental allergens or irritants and ways to do this (cleaning etc.) and the benefit to the child. In response to *perceived barriers*, provision of vacuum cleaners, cleaning supplies, mattress covers etc. were made available alongside referral to appropriate agencies to help with issues such as childcare.

APPLICATION OF THE TRANSTHEORETICAL MODEL (TTM) TO PRACTICE

Application of the TTM (or the PBC) is particularly useful when there is access to the client group first allowing the mapping of individuals to stages, preferably through face-to-face involvement. For example, the TTM provides an opportunity for stage-tailored information, such as tailoring newsletters (Ruud et al. 2005) or brief advice. First, questions will need to be asked of the client. These should include questions about past behaviour, current behaviour and future intentions, including current knowledge and practice. The questions can be brief and allow the practitioner to apply a stage to a person's response. Once the stage on the TTM has been decided, the level of action will then be appropriate to that stage. This may consist of doing very little (not everyone is going to want to change). As behaviour changes, there may be a need to assess 'stages' at each encounter with the person.

The types of action you may take could include:

- *Pre-contemplation*: providing information, highlighting benefits.
- *Contemplation*: examining ways of overcoming barriers, including access, cost, transport, time or fear.
- *Preparation*: support for any last-minute problems, provide additional advice.
- *Action/Maintenance*: continue to support positive choice made.
- *Relapse*: advice to try again when a person is ready, alongside re-checking the stage a person is in.

Case study 1.9 illustrates an example of the TTM in practice, and how these stages can be used in campaign design.

Case Study 1.9 The stages of change in action – stop, yield and go

Kobetz et al. (2005) utilized the TTM by breaking the cycle into three phases rather than six. Each client was asked two questions.

- 1 Does she *know* about mammograms?
- 2 Does she *go* for mammograms?

Traffic-light characters were used to indicate a client's readiness to change their behaviours in relation to mammograms. Susie STOP (Red) represents *precontemplation*, Yasmin YIELD (yellow) represents *contemplation* and Greta GO (Green) represents *action*. Susie STOP has knowledge barriers, hence she is in the precontemplation phase. Yasmin YIELD considers going for a mammogram but has access barriers, for example cost or transport. Greta GO understands benefits and uses screening services regularly.

Once women were placed in a stage they receive the appropriate 'action'. Those in the Susie STOP phase were given information about the importance of regular screenings and early detection. Those in the Yasmin YIELD phase had discussions of ways to overcome barriers, were given information about low-cost options and ways to decrease discomfort. Those in the Greta GO phase were commended and reminded of the importance of screening.

CONCLUSION

It is no longer acceptable that health promotion campaigns are planned and implemented on an ad hoc basis and the application of theory to practice in interventions cannot be ignored. In order to promote health successfully and reduce ill health, health promoters should design all interventions using theoretical concepts for successful health promotion campaigns. This chapter has drawn attention to a variety of theoretical models that can be used in full or part to help inform health communication programmes, although there are others that are equally important in health promotion, and that practitioners may prefer to use.

Although theoretical models do not provide a full explanation of every factor in the behaviour change process, they identify potential factors or leverage points that may influence decisions that can help in the targeting and structuring of communication. Critics of theoretical models should continue to debate not what is wrong with these models, but how can they be best used to inform future practice to promote health for all.

Summary

- This chapter has discussed the role and application of theoretical models in health promotion practice.
- Two cognitive models, the theory of planned behaviour and the health beliefs model, and three stage-step models, the transtheoretical model, perceived behavioural control model and the information–persuasion matrix were described and applied to practice.
- The advantages of using theory were highlighted alongside criticisms of the theoretical approach.
- The use of theory in practice was examined alongside the application of theoretical models to health promotion practice.

ADDITIONAL READING

Theoretical models are discussed in more detail by a variety of authors.

Tones, K and Green, J (2004) *Health promotion: planning and strategies*: Sage, London.

The theory of planned behaviour is explained in more depth in Rutter, D and Quine, L (eds) (2002) *Changing health behaviour*: Open University Press, Buckingham.

Some examples of theory-based campaigns in a US context can be found in

Rice, R E and Aktin, C K (eds) (2001) *Public communication campaigns*, 3rd edition: Sage, London.