Psychological Care of Cardiac Patients

3

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3.1 Introduction

This chapter addresses the impact and rehabilitation needs of patients following diagnosis with acute coronary syndrome (ACS) and how psychologically based interventions may benefit such patients. It considers a range of approaches that can be used with individuals or in group contexts, all of which are targeted at two key goals:

- Changing risk behaviours, such as smoking and low levels of exercise
- Helping people adjust emotionally to their illness

These goals may be achieved through a variety of means: participation in an exercise programme, for example, may both improve cardiovascular fitness and reduce emotional distress as the individual feels they are gaining control over their illness and life. Likewise, changes in depression or anxiety may improve adherence to medication or exercise regimens. Nevertheless, any interventions can be divided roughly into those that address behavioural change and those that address emotional issues. Accordingly, this chapter will introduce a number of intervention approaches targeted at each outcome. The interventions discussed are not specialist interventions to be used only with a minority of patients. Rather, they, or the principles on which they are based, can usefully be incorporated into any rehabilitation programme. Before addressing these issues, however, the chapter briefly examines the psychological impact an acute coronary event can have on the individual.

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3.2 The Impact of Acute Coronary Events

Cardiac events can trigger significant emotional reactions, but surprisingly modest behavioural change, at least in the long term. Hajek et al. [14], for example, found that 6 weeks following a myocardial infarction (MI), 60 % of those who smoked before their MI no longer did so. One year after MI, the percentage of those remaining a non-smoker fell to 37 %. Diet may also change in the short term although, again, old habits may creep back over time. Leslie et al. [23], for example, found that 65 % of participants in their nutritional educational programme were eating five portions of fruit or vegetables a day at its end: a figure that fell to 31 % over the following year. Levels in fitness may change markedly following participation in specific exercise programmes (e.g. [15]). However, the duration of any changes in the absence of continued follow-up is not clear. Lear et al. [22], for example, reported minimal changes from the baseline on measures of leisure time exercise and treadmill performance 1 year following MI despite participants taking part in a general rehabilitation programme.

Of concern also is that even modest behavioural change may be confined to a subgroup of patients. Bennett et al. [3] found that in the 6 months following acute coronary syndrome (ACS), levels of exercise rose only among patients already engaging in meaningful levels of exercise and did not change in those engaging in low levels of exercise. More encouragingly, people with relatively poor diets before the event did show more improvement than those with good diets, although they still did not reach the dietary scores achieved by the latter group at any time. Those with good dietary habits showed no improvement at all.

The psychological consequences of MI may be profound and persistent. Osler et al. [28] reported that 20 % of patients became depressed in the 2 years following the event. Lane et al. [21] found a 31 % prevalence rate of elevated depression scores during hospitalisation. The 4- and 12-month prevalence rates were 38 and 37 %. The same group reported the prevalence of elevated state anxiety to be 26 % in hospital, 42 % at 4-month follow-up and 40 % at the end of 1 year. They also reported high levels of comorbidity between anxiety and depression. Interest in the rates of post-traumatic stress disorder as a consequence of MI has recently increased, with prevalence rates typically being around 8–10 % up to 1 year following infarction (e.g. [5]). Poor emotional outcomes may be predicted by a range of psychosocial factors, including age (younger is worse), gender (female is worse), previous psychiatric history, lacking the availability of a confidant, the experience of ongoing life problems and personality factors including type D personality (e.g. [35, 18]).

Each of these emotional reactions can also influence important outcomes. Depression, and to a lesser extent anxiety, independently predicts re-infarction (e.g. [37]) as well as having a number of emotional and behavioural implications. Depressed and anxious individuals are least likely to attend cardiac rehabilitation classes [20]. Paradoxically, they are more likely to contact doctors and have more readmissions in the year following infarction [35]. Many of these appointments will be due to worry and health concerns rather than cardiac problems. The impact of mood on health behaviour change is modest. Huijbrechts et al. [16] reported that

depressed and anxious patients were less likely to have stopped smoking 5 months after their MI than their less distressed counterparts. Bennett et al. [4] reported a modest association between low levels of exercise and depression, but no differences between depressed and nondepressed individuals on measures of smoking, alcohol consumption or diet. Finally, Shemesh et al. [31] found that high levels of PTSD symptoms, but not depression, were significant predictors of non-adherence to aspirin.

More importantly, perhaps, depression has consistently been associated with delayed or failure to return to work, reduced work hours and low ratings of work or social satisfaction (e.g. [32]). Delay in returning to work has been predicted by greater concerns about health and low social support. Resuming work at a lower activity level than before infarction is associated with older age, higher health concerns and patients' expectations of lower working capacity (independently of actual capacity). Indeed, patient's beliefs about their condition, which will be influenced by mood, appear critical in determining their behavioural response to it. Petrie et al. [30], for example, found that attendance at cardiac rehabilitation was significantly related to a stronger belief during admission that the illness could be cured or controlled. Return to work within 6 weeks was significantly predicted by the perception that the illness would last a short time and have less negative consequences. Patients' belief that their heart disease would have serious consequences was significantly related to later disability in work around the house, recreational activities and social interaction.

Finally, the partners of patients also experience high levels of distress, often greater than that reported by the patient [26]. Such anxieties may be increased by fears for the patient's health linked to a poor prognosis and non-compliance with treatment or behaviour change programmes [6]. Many wives also appear to inhibit angry or sexual feelings and become overprotective of their husbands [33].

3.3 Changing Risk Behaviour

A key component of any cardiac rehabilitation programme should address behaviour change designed to reduce risk for further disease progression and enhance quality of life. Achieving this goal can best be considered to involve two sets of processes:

- Increasing motivation to change
- Developing strategies of change

As the evidence reviewed above suggests, not everyone is motivated to change risk behaviours, even after acute events such as an MI. This group of individuals can be particularly challenging to health professionals as they are unlikely to respond to exhortations to change their behaviour, nor are they likely to benefit from interventions designed to show them how to change their behaviour. The best approach to use with such individuals is one that increases their *intrinsic* motivation to change.

3.3.1 Information Provision

One apparently simple approach to increasing motivation to change involves the provision of information. If individuals are unaware of the advantages of change, they are unlikely to be motivated to attempt to make change. The logic is clear. Unfortunately, while clear information may be of benefit when it is completely novel, does not contradict previous understandings of issues, is highly relevant to the individual and is relatively easy to act on, health-related information rarely meets all these criteria. And even when it does, it may well not impact on behaviour.

Reasons for these failures are complex and involve social, psychological and situational factors. Even relatively simple behavioural changes, such as improvements to diet, may involve quite complex barriers to change including negotiations within families, potential expense and lack of cooking skills. For this reason, a number of specific strategies have been used in attempts to influence motivation to change. One guide to relevant strategies is provided by the UK National Institute for Health and Care Excellence Guidelines on Behavioural Change (NICE 2014). These identify, for example, several ways of framing information through conversation or leaflets and similar outputs in order to increase the motivation of smokers to quit. Key messages should target psychological factors known to influence behaviour and include:

- *Outcome expectancies*: Smoking causes people to die on average 8 years earlier than the average.
- *Personal relevance*: If you were to stop smoking, you could add 6 years to your life and be fitter over that time.
- *Positive attitude*: Life is good and worth living. Better to be fit as you get older than unable to engage in things you would like to do.
- *Self-efficacy (confidence)*: You have managed to quit before. With some support there is no reason why you cannot sustain change now.
- *Descriptive norms*: Around 30 % of people of your age have successfully given up smoking.
- *Subjective norms*: Your wife and children will appreciate it if you were to give up smoking.
- *Personal and moral norms*: Smoking is anti-social and you do not want your kids to start smoking.

3.3.2 Motivational Interview

A more formal, technique-based approach to increasing motivation is afforded by the so-called motivational interview [25]. As its name suggests, its goal is to increase an individual's motivation to consider change – not to show them how to change. If the interview succeeds in motivating change, only then can any intervention proceed to considering ways of achieving that change. The approach is designed to help people to explore and resolve any ambivalence they may have about changing their

behaviour. It assumes that when an individual is facing the need to change, they may have beliefs and attitudes that both support and counterchange. Prior to the interview, thoughts that counterchange probably predominate, or else the person would be actively making change. Nevertheless, the goal of the interview is to elicit both sets of beliefs and attitudes and to bring them into sharp focus, perhaps for the first time: 'I know smoking does damage my health', 'I enjoy smoking', and so on. This is thought to bring the individual to a decision point which is resolved by rejecting one set of beliefs in favour of the other. These may (or may not) favour behavioural change. If an individual decides to change their behaviour, the intervention will then focus on consideration of how to achieve change. If the individual still rejects the possibility of change, they would typically not continue in any programme of behavioural change, although the possibility of future motivational change should not completely preclude such continuation.

The motivational interview is deliberately non-confrontational. Miller and Rollnick consider the process to be a philosophy of supporting individual change and not attempting to persuade an individual to go against their own wishes. When the intervention was first developed, it was based on exploration of two key issues:

- 'What are the good things about your present behaviour?'
- 'What are the not so good things about your present behaviour?'

The first question is important as it acknowledges the individual is gaining something from their present behaviour and is intended to reduce the potential for resistance and argument. This process of exploration is not simply a one-question approach. Both the questions above are leads into a wider detailed exploration of these issues. However, once the individual has considered each issue (both for and against change), they are summarised by the health professional in a way that highlights the contradiction between the two sets of issues: 'So, smoking helps you cope with stress, but it causes trouble at home because your wife doesn't want you to smoke'. Once this has been fed back to the individual, they are invited to consider how this information makes them feel. Only if they express some interest in change should the interview then go on to consider how to change. More recently, Miller and Rollnick have suggested that patients may be encouraged to consider more actively the benefits of change and how things may be different were change achieved. Other key strategies include:

- *Expressing empathy through the use of reflective listening*: this involves engaging with the individual and trying to see things from their perspective rather than that of a health professional trying to encourage change. This helps develop an alliance between patient and health professional rather than a potentially adversarial relationship.
- *Avoiding arguments by assuming the individual is responsible for the decision to change*: this removes the onus of the health professional to actively persuade. In the end, it is up to the individual whether they change their behaviour, not the health professional.

- *'Rolling with resistance' rather than confronting or opposing it*: again, this means avoiding arguments and attempts at direct persuasion.
- *Supporting beliefs in the ability to change an optimism for change*: if the individual is unwilling to contemplate change because they are not sure they can achieve it, then part of the conversation could usefully look for evidence of the person's ability to change and feed this back to them, to increase their confidence in achieving change.

The motivational approach can be extremely powerful, even where people show high levels of resistance. Take the (true) example of Mr Jones, who had continued smoking despite having had two infarctions and being told that he may require two below-the-knee amputations due to ischaemia in his lower legs if he continued smoking:

Mr Jones: I know you want me to give up smoking. The doctors have told me that I have to give up, but I'm not going to. I know it's your job, but you can't persuade me! It's the one pleasure that I have, and I'm not giving it up.

Nurse: OK. OK. I'm not going to try and persuade you to stop smoking. In the end it is your choice. However, I am interested in why you smoke and why you are so firmly against changing despite all the hassle you have had from the doctors. So, what do you get out of smoking?

Mr Jones: Oh! (looks surprised and relieved and starts talking in a much more non-confrontational manner). Well, I've smoked all my life, ever since I was a kid really. It's difficult to give up something you've done for so long. It's part of my life. In a way, that's the main thing really – it's just part of my life. I can't see life without smoking. It helps me keep calm, and most of my mates are smokers – so it's part of my social life.

Nurse: So, it's difficult to see how to give up and how life would be without smoking….

Mr Jones: That's about it, really. I've tried to give up in the past and it's been really difficult. I've been back to smoking pretty quickly, so it's difficult to see myself giving up, even if I wanted to….

Nurse: Oh, so you've tried in the past to quit. What led you to that?

Mr Jones: Well, I know it really does make my heart bad, and I get out of breath when I smoke. So, it really makes it obvious the harm I'm doing to myself. But it's one thing to say you want to quit and another to actually do it. And I know I can't quit, so what's the point of even trying?

Note at this point that by not challenging or actively trying to persuade Mr Jones, the conversation has shifted from his not *wanting* to give up to not *feeling able* to give up – although because of the confrontational way this had been discussed previously, this had not been clear. So, the nurse moves from highlighting the pros and cons of behavioural change and takes this as a cue to look at how and why things have gone wrong before, in the hope that this may lead to consideration of behavioural change:

Nurse: You say you have tried to stop smoking in the past. How did you set about this?
Mr Jones: Well, I just tried to do it…. What do you call it? Will power?
Nurse: How well did that work? Not too good from what you say….
Mr Jones: No, not very well. I started to feel awful, sweaty, shaky, and I had to have a cigarette. And once you give in, then it's back to smoking, isn't it.
Nurse: It sounds like you were having withdrawal symptoms from the nicotine. Did you take any nicotine replacements like Nicorette or something like that?
Mr Jones: No, just tried on my own.
Nurse: That may be why you had problems. It's possible that if you used something to help the withdrawal, it may have been easier to quit.
Mr Jones: Oh right, what does that involve then?

Note here that the nurse did not try to persuade Mr Jones that he could stop smoking, but rather began to search for evidence of why things went wrong in the past. False reassurance with no basis in fact will not encourage change. Here, however, there were some clues as to why things went wrong previously and how they could be changed to increase Mr Jones's chances of successfully quitting. This was subtly fed back to him, and he is now beginning to think about stopping smoking, despite the nurse making no attempt at active persuasion through the conversation. In fact, Mr Jones did go on to state he wanted to quit smoking and was successful in stopping smoking using nicotine replacement therapy.

3.3.3 Changing Behaviour

Changing behaviours such as smoking, exercise or food choices can be difficult within the context of our complex lives. We frequently know what we should be doing, but still fail to put these intentions into action. So frequent is this failure, it has been bestowed a name: the intention-behaviour gap. One way to increase the chances of intentions actually leading to actions involves planning and thinking through how any desired changes can be made. One of the earlier approaches to this process was developed by Egan [11]. His model of problem-focused counselling involves three phases, through which the identification and change of any factors that are inhibiting behavioural change can be achieved:

- Problem exploration and clarification
- Goal setting
- Facilitating action

3.3.4 Problem Exploration and Clarification

The goal of the first stage is to help an individual identify the problems he or she is facing that may be contributing to their problems or interfering with attempts at behavioural change. The goal of this stage is to clarify *exactly* what difficulties the individual is facing, and in some detail, only then can appropriate problem-solving strategies be applied. The most obvious way of eliciting this type of information is to ask direct questions. Egan also suggests the use of prompts ('Tell me about…') and probes ('How did that cause problems…?') requesting information. A further, and important, method of encouraging problem exploration is through the use of what Egan termed empathic feedback: 'So, you felt very frustrated when your partner refused to talk about…'.

3.3.5 Goal Setting

Once particular problems have been identified, some people may feel they are able to deal with them and need no further help in making appropriate changes. Others, however, may need further support in determining what they want to change and how to change it. The first stage in this process is to help the individual to decide the goals he or she wishes to achieve and to frame his or her goals in specific rather than general terms (e.g. 'I will try to relax more' versus 'I will take 20 minutes out each day to practise some yoga'). If the final goal seems too difficult to achieve in one step, the identification of sub-goals working towards the final goal should be encouraged.

Some goals may be apparent following the problem exploration phase. However, should this not be the case, Egan identified a series of strategies designed to help the patient identify and set goals. One of the most important is to encourage the individual to explore new perspectives – to think about new ways of doing things. At this stage, direct challenges or advice giving ('Well, why don't you take some time out each day to relax?') is likely to result in resistance or feelings of defeat. The individual should be encouraged to explore their own solutions rather than them being provided by the health professional.

3.3.6 Facilitating Action

Once goals have been established in the second phase, some individuals may feel they need no further support in achieving them. However, some people may not be able to plan how they could achieve any goals they wish to achieve. Accordingly, the final stage is to plan ways of achieving the identified goals. It can be helpful to work towards relatively easy goals at the beginning of any attempt at change, before working towards more difficult to change goals as the individual gains skills or confidence in their ability to change.

The following case study provides an example of problem-focused counselling and how the appropriate assessment of a problem can ensure that any attempts at change are successful.

Following an infarction at a relatively early age, Mrs T was found to be obese and to have a raised serum cholesterol level. After seeing a dietician, she agreed to lose a kilogramme a week over the following months. She was given a leaflet providing information about the fat and calorific content of a variety of foods and a leaflet describing a number of 'healthy' recipes.

On her follow-up visits, her cholesterol level and weight remained unchanged. So, the dietician changed her tactics and began to explore why Mrs T had not made use of the advice she had been given. Mrs T explained that she already knew which were 'healthy' and 'unhealthy' foods. Indeed, she had been on many diets before – with little success. They then began to explore why this was the case. At this point, the key problem became apparent.

Mrs T's husband supported her attempts to lose weight and was prepared to change his diet to help her. However, her sons often demanded meals late at night when they got back from the 'pub' (bar), often relatively drunk. As a consequence, Mrs T often started to cook late at night at the end of what may have been a successful day of dieting. She then nibbled high-calorie food while cooking. This had two outcomes. Firstly, she increased her calorie input. Secondly, she frequently 'catastrophised' ('I've eaten so much; I may as well abandon my diet for today') and ate a full meal at this time. It also reduced her motivation to follow her diet the following day.

Once this specific problem had been identified, Mrs T set a goal of not cooking late-night fry-ups for her sons. She decided that if her sons wanted a fry-up, they could cook it themselves. Once the goal was established, Mrs T felt a little concerned about how her sons would react to her no longer cooking for them. So, she and the dietician explored ways in which she could set about telling them – and sticking to her resolution. She finally decided she would tell them in the coming week, explaining why she felt she could no longer cook for them at that time of night. She even rehearsed how she would say it. This she did, with good effect, as she stopped cooking for them and did start to lose weight.

If nothing else, this vignette shows the danger of making implicit assumptions about what is preventing change (in this case, the dietician initially assumed it was lack of knowledge about healthy foodstuffs). Time spent assessing the precise cause of any problems an individual is experiencing is time well spent and ensures that the rest of any intervention is focusing on appropriate issues.

3.3.7 Implementing Plans and Intentions

A simpler approach to that of Egan, but compressed into a period of minutes rather than hours, involves simply planning change. According to Gollwitzer [13], we frequently fail to translate our intentions into behaviours for a number of reasons, including:

- *Failing to start*: the individual does not remember to start, they do not seize the opportunity to act, or they have second thoughts at the critical moment.
- *Becoming 'derailed' from goal striving*: the individual is derailed by enticing stimuli, they find it difficult to suppress habitual behavioural responses, or many are adversely affected by negative mood states or expectations of negative mood if they implement change.

To overcome these obstacles, a relatively simple procedure may be utilised. This approach involves specifying a relatively simple goal ('I will eat less fatty food') and how this will be achieved ('I will buy healthy food options at the supermarket'). This link between goal and behaviour may take 5 min of planning; it is not complex. The approach can take a number of slightly more complex forms, one of which is known as the 'if-then' approach: '*If* I find myself bored and hungry, *then* I will try to find something active to do/eat a health snack'. Ideally, the behaviour is specified in terms of when, where and how. Although simple, the premise of this approach is that this process will result in a mental association between representations of specified cues (feeling bored) and means of attaining goals (engaging in non-boring activities, not eating), which will become activated when the cue is encountered. Developing appropriate implementations is simple in practice, particularly for one-off simple behaviours: 'If I have an urge to smoke in the house, I will play a game on the Xbox to take my mind of it', 'If I am offered a cigarette by a friend…', and so on. Establishing these if-then associations may promote the initiation of goal-relevant behaviours, stabilise them over time and shield the individual from alternatives and obstacles. By considering times or situations of particular salience to the individual, they have a preformed plan of what to do when in this situation. Through planning, the individual should not find themselves in a challenging or difficult situation without a plan to engage in, a context which makes the likelihood of resort to previous behaviours associated with that situation highly likely.

3.4 Emotional Adjustment

While any negative emotional outcome following the onset of disease is worthy of treatment in itself, the adverse impact that emotional distress can have on rehabilitation or even the prognosis of the disease should make the treatment of such problems key to any rehabilitation programme (e.g. [8]). The chapter introduces one well-known approach to reducing emotional distress and one that is perhaps less well known:

- Cognitive-behavioural interventions
- Written emotional expression

3.4.1 Cognitive-Behavioural Interventions

Cognitive-behavioural interventions assume that emotional distress results not just from the things that happen to us, but how we interpret them. They consider distress often to involve misinterpretations of events or exaggerations of the negative elements within them and a loss of focus on any positive aspects of the situation. The most basic cognitive intervention is to identify such distorted thinking and to help the individual look at the situation from a different perspective. See, for example, in the dialogue below, how Tom exaggerates the negative consequences of his MI and how the nurse encourages him to consider other ways of looking at the situation:

Tom: Well, that's it. I've had a heart attack. And I know I'll lose my job now… and what's going to happen about money. I can see we're going to have to sell the house or at least the cars….

Nurse: That's a lot of things to be worrying about…. Tell me, why do you think you'll lose your job?

Tom: Well, heart attacks are bad news, aren't they? Most people have to stop work when they have one, don't they?

Nurse: Some people do – but most people can go back to work. Having a heart attack doesn't have to disable you and stop you working…. Most people get back to the same or a similar lifestyle to the one they had before their heart attack…. What sort of job do you have?

Tom: I'm a manager in a large marketing company.

Nurse: So, your job is not very physically demanding…. It doesn't put a lot of strain on the heart. So, going back to work isn't going to be difficult from a physical point of view.

Tom: No, I guess not….

Nurse: I wonder…. You must have known a number of people who have had a serious illness in your line of work. How does the company treat them? Do they have to leave?

Tom: In some ways that would be crazy, if they are a good worker and can still work, the company would keep them on.

Nurse: So as far as you know, the company tries to keep people on even if they are ill.
Tom: So there's no real need for the company to have a problem with me?
Nurse: Perhaps not….
Tom: So, things might not be that bad after all. Wow, I feel better after thinking that through….

Here, Tom is encouraged to rethink some of the assumptions he has made about the company's response to his illness and not simply to accept them as true. Note that the nurse did not try to reassure him directly, but gave him some relevant information and then encouraged him to look for evidence to challenge his own erroneous assumptions – a much more powerful procedure. In a more formal cognitive-behavioural programme, the health professional may talk through any inappropriate assumptions that the individual may make and teach them to challenge them as they occur in real life. The educational approach of Petrie and colleagues described above also adopts this type of approach in a formal and systematic manner, identifying the types of beliefs that are likely to affect how engaged an individual is in any rehabilitation programme and providing evidence to challenge them [29].

3.4.2 Relaxation Training

A second cognitive-behavioural approach – usually used in stress management programmes – involves teaching relaxation skills. The goal of teaching relaxation skills is to enable the individual to relax as much as possible and appropriate both throughout the day and at times of particular stress. This contrasts with procedures such as meditation, which provide a period of deep relaxation and 'time out', as sufficient in themselves. Relaxation skills are best learned through three phases:

- Learning basic relaxation skills
- Monitoring tension in daily life
- Using relaxation at times of stress

The first stage of learning relaxation skills is to practise them under optimal conditions such as a quiet room in a comfortable chair – where there are no distractions and it is relatively easy to relax. Initially, the patient should be led through the relaxation process by an experienced practitioner. This can then be added to by continued practice at home, typically using taped instructions. The relaxation process most commonly taught is based on Jacobson's deep muscle relaxation technique. This involves alternately tensing and relaxing muscle groups throughout the body in an ordered sequence. Over time, the emphasis of practice shifts towards relaxation without prior tension, or relaxing specific muscle groups while using others, to mimic the use of relaxation in the 'real world'.

At the same time as practising relaxation skills, individuals can begin to monitor their levels of physical tension throughout the day. Initially, this serves as a learning

process, helping them to identify how tense they are at particular times of the day and what triggers any excessive tension. Such monitoring may also help identify future triggers to stress and provide clues as to when the use of relaxation procedures may be particularly useful. After a period of learning relaxation techniques and monitoring tension, individuals can begin to integrate relaxation into their daily lives. At this stage, relaxation involves reducing tension to appropriate levels while engaging in everyday activities. Initially, this may involve trying to keep as relaxed as possible and appropriate at times of relatively low stress and then, as the individual becomes more skilled, using relaxation at times of increasing stress. The goal of relaxation at these times is not to escape from the cause of stress, but to remain as relaxed as possible while dealing with the particular stressor. An alternative strategy involves relaxing at regular intervals (such as coffee breaks) throughout the day.

3.4.3 Mindfulness

A relatively new, but increasingly popular, approach to helping people cope with stress involves the use of a technique known as mindfulness. This involves the individual learning to recognise the presence of stressful thoughts while remaining emotionally disengaged from them. Mindfulness has a long history and is central to Buddhist philosophy. It can be achieved through meditation, but can also be evoked, with practice, while engaged in day-to-day activities. Mindfulness may be considered to have two elements:

- *Self-regulation of attention*: Mindfulness involves being fully aware of our current experience – observing and attending to our changing thoughts, feelings and sensations as they occur. This allows us to be aware of these phenomena, but not to elaborate on them. Rather than getting caught up in ruminative thoughts, mindfulness involves a direct non-judgmental experience of events in the mind and body.
- *An orientation towards experiences in the present moment characterised by curiosity, openness and acceptance*: The lack of cognitive effort given to the engagement and elaboration of our experiences allows us to focus on our present experience. Rather than observing experience through the filter of our beliefs and assumptions, mindfulness involves a direct, unfiltered awareness of our experiences.

In essence, mindfulness involves a focus on our whole experience at any one time, not just focusing on panicky, anxious or depressed thoughts. These become just part of our experience, and we can learn to observe them rather than allow them to dominate our consciousness. Achieving this level of simultaneous awareness and disengagement is not easy, and most programmes that teach mindfulness do so over sessions spread over many weeks or months.

One of the most widely recognised training programmes is the mindfulness-based stress reduction programme of Kabat-Zinn (e.g. [17]). This involves an

8–10-week course for groups of participants who meet weekly for practice in mindfulness meditation skills, together with discussion of stress, coping and homework assignments. An all-day mindfulness training session is also included. Several mindfulness meditation skills are taught. These include the 'body scan', involving a 45-min exercise in which attention is directed sequentially to numerous areas of the body while lying down with eyes closed. Sensations in each area are carefully observed. In sitting meditation, participants are instructed to sit in a relaxed and wakeful posture with eyes closed and to direct attention to the sensations of breathing. Hatha yoga postures are used to teach mindfulness of bodily sensations during gentle movements and stretching. Participants also practise mindfulness during ordinary activities like walking, standing and eating. For all mindfulness exercises, participants are instructed to focus attention on the target of observation and to be aware of it in each moment. When emotions, sensations or cognitions arise, they are observed non-judgmentally. If participants notice their mind has wandered into thoughts, memories or fantasies, their nature or content is briefly noted, and then attention is returned to the present moment. An important consequence of mindfulness practice is the realisation that most sensations, thoughts and emotions fluctuate, or are transient, passing by 'like waves in the sea'.

Mindfulness can act as a 'stand-alone' intervention. It can also be integrated into other therapies and used to help people cope with challenging behavioural experiments or distressing thoughts as part of the treatment of mood and anxiety disorders. While mindfulness training may be beyond the remit of most rehabilitation programmes, patients may usefully be signposted to the many self-help interventions available on the Internet and books, such as Stahl and Goldstein [34] and Alinda [1].

3.5 Concluding Remarks

Cardiac rehabilitation works. We know that appropriate interventions can effectively change behaviour and emotional consequences of the experience of an acute cardiac event. We also know that more complex interventions work better than simpler approaches. Those, for example, that involve the development of personal strategies of change are more effective than less complex educational programmes [2], although the latter can be highly effective if conducted in appropriate manner. These relatively complex interventions need not necessarily be provided in complex ways, however. The 'self-help' intervention developed by Lewin and colleagues [24] provides a graduated programme of behavioural change and emotional regulation over a period of six weekly instalments and has proven as effective as the same programme provided 'live' in cardiac rehabilitation centres [10]. Intriguingly, we have still to find out what type of intervention works best for which patients. Nevertheless, there is consistent evidence that either live interventions or the Internet- or other media-based interventions are most effective if they apply the principles considered in this chapter [7, 9, 12, 19, 27, 36]. Ultimately, a triaged system in which patients

are enrolled in programmes of varying complexity and cost may ultimately provide the most effective and cost-effective approach, with simple educational provision being the basic intervention and more complex interventions being initiated as appropriate.

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