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Stress Management

Paul Bennett

What Is Stress?

Early models of stress considered it to arise from our environment, and to impact on us all equally. Holmes and Rahe¹ established a hierarchy of severity for various stressors. They also attempted to provide a link between stress and health, suggesting that the more stressful life events an individual experiences, the more their risk of ill-health. Unfortunately, this hypothesis was rarely substantiated. What has emerged from subsequent research is that the impact of potentially stressful events is mediated by our psychological responses to those events. The meaning attributed to events, and the coping responses we use, profoundly influence our emotional and behavioral responses to them. Accordingly, more recent models of stress consider stress to have a number of components: a cognitive response (“I am worried I won’t cope with this problem”), a physiological component usually involving increased autonomic arousal, a behavioral element involving more or less useful coping responses, and an emotional experience involving a variety of negative emotional states such as anger or anxiety (Figure 34-1).

Clinicians such as Beck² argued that feelings of stress or distress are a consequence of “faulty” or “irrational” thinking. That is, they considered stress to be the result of negative misinterpretations of environmental events. Such thoughts have been referred to as automatic negative assumptions. These form the individual’s first response to a particular situation and are without logic or grounding in reality. Beck

identified a number of categories of such thoughts, including:

- Catastrophic thinking: considering an event as completely negative, and potentially disastrous: “That’s it – I’ve had a heart attack . . . I’m bound to lose my job, and I won’t be able to pay the mortgage.”
- Over-generalization: drawing a general (negative) conclusion on the basis of a single incident: “That’s it – my angina stopped me going to the cinema – that’s something else I can’t do . . .”
- Arbitrary inference: drawing a conclusion without sufficient evidence to support it: “The pain must mean my condition is getting worse . . . I just know it.”
- Selective abstraction: focusing on a detail taken out of context: “OK, I know I was able to cope with going out, but I was worried about my angina, and I know that will stop me going out in future . . .”

Of course, some events may be inherently “stressful” and a negative cognitive response may be accurate – something which may have significant implications for any intervention aimed at reducing stress.

The Impact of Stress Management

In terms of summarizing a large body of evidence, a recent Cochrane review³ reported that stress management procedures are effective in reducing distress. Other goals may be to improve the rehabilitation process, improve health, and/or prevent

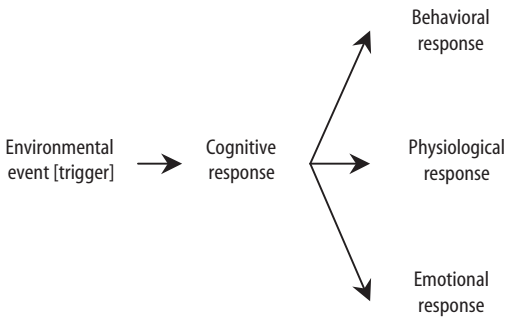


FIGURE 34-1. A simplified representation of the event-stress process.

disease progression. Unfortunately, from a scientific perspective, many stress management interventions are combined with other interventions such as exercise programs, making it difficult to isolate a specific therapeutic effect of the stress management. Nevertheless, the relatively small number of studies that have used stress management in isolation suggest a beneficial impact on these other goals. For instance, a meta-analysis of 27 trials of relaxation therapy in the rehabilitation of cardiac patients found that intensive supervised relaxation practice contributed to many secondary prevention outcomes – psychological, vocational, physiological, and clinical.⁴

Reducing Symptoms

Angina may be triggered by emotional as well as physical stresses. Accordingly, several studies have explored the potential benefits of stress management procedures in people with angina. One of the first studies⁵ found that patients who participated in a stress management program reported reductions in the frequency of angina symptoms, were less reliant on medication, and tolerated higher levels of exercise on a treadmill than those in a usual treatment control group. A larger study, involving a very large sample,⁶ compared a less intensive intervention involving a stress management program delivered in booklet form combined with three group meetings. At 6-month follow-up, compared to a no treatment control group, participants reported a significant reduction in stress-, but not exercise-related, angina.

Preventing Reinfarction

The largest study involving the use of stress management in post-MI patients⁷ targeted type A men (i.e. those who scored highly on measures such as time urgency, competitiveness, hostility, and easily aroused anger: a form of “self-stress”) who had experienced a recent MI. Over a 4-year intervention, participants in the type A management program were at half the risk for further infarction than those in a similarly long, but traditionally focused, rehabilitation program, with total infarction rates over the 4.5-year study of 6% and 12% in the groups, respectively.

Other studies have shown positive gains following shorter and more general stress management interventions. Blumenthal and colleagues,⁸ for example, assigned patients to a 4-month program of exercise or stress management training or usual treatment control. Participants in the stress management group were significantly less likely to have a cardiac event over the follow-up period than participants in either other condition. Appels and colleagues⁹ used a simpler intervention program involving a relaxation and controlled breathing program following angioplasty. This resulted in a 50% lower risk of further intervention or a new coronary event than that of participants in a no treatment group in the following 18 months.

Although the evidence is not always strong, there is a general consensus that depression may increase risk for infarction or reinfarction.¹⁰ Such a relationship suggests that interventions that reduce depression should reduce risk of reinfarction. Evidence in support of this hypothesis, however, is still lacking. In one of the first studies to examine this issue, Black et al.¹¹ found lower use of hospital services in the year following MI among patients offered cognitive behavior therapy to help reduce their distress than among those in a usual care control group. Whether this difference was a consequence of physiological or psychological changes such as less anxiety over cardiac symptoms is not clear. Evidence from the largest study conducted in this area¹² proved more disappointing. The ENRICH study included 2481 patients and provided an intervention for up to one year for people identified as depressed immediately following an MI. All participants in

the active intervention arm received two or three treatment components: group cognitive behavior therapy, provision of social support, and, if necessary, antidepressant medication. A comparison group received usual care. Although the intervention appeared to lower levels of depression more than reductions achieved in the usual care condition, there were no differences in survival between the two groups in the 2 years following infarction. More detailed discussion of depression and cardiovascular events is considered in Chapter 32.

Stress Management Training

Strategies to help people cope with stress are many and varied. Some may be as simple as the provision of reassuring information. Others require a more complex technology. This chapter will focus specifically on strategies that fall within the rubric of “stress management training.” The approach is based on the model of stress described above and aims to:

- Change environmental triggers to the stress response.
- Change inappropriate behavioral, physiological, or cognitive responses that occur in response to this event.
- These goals may be achieved through a variety of strategies:
- High levels of muscular tension can be reduced through relaxation techniques.
- Triggers can be identified and modified using problem-solving strategies.
- Cognitive distortions can be identified and changed through a number of cognitive techniques such as cognitive restructuring:
- “Stressed” behaviors can be changed through consideration and rehearsal of alternative behavioral responses.

Many stress management programs simply teach relaxation techniques to minimize the high levels of arousal associated with stress. More complex interventions try to change cognitive (and therefore emotional) reactions to environmental triggers. Few address the factors that initiate the stress response. Given the idiosyncratic nature of both the stressors individuals may

experience and the complexity of changing their cognitive response to them, interventions that address these factors are often led by specialists in stress management, and may best be targeted at individuals who are experiencing significant levels of stress. By contrast, relaxation techniques are relatively easy to teach and incorporate into “real life,” and may benefit most cardiac patients. As a consequence, they can be taught by non-specialists, and may usefully be integrated into the core syllabus of any group rehabilitation program.

Teaching Relaxation Skills

The goal of teaching relaxation skills is to enable patients to relax as much as is 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 involves practice 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, a trained practitioner should lead the individual through the process of deep relaxation. This is augmented by continued practice at home, typically using taped instructions. The relaxation process most commonly taught involves alternately tensing and relaxing muscle groups throughout the body in an ordered sequence. As the individual becomes more skilled, the emphasis of practice shifts towards relaxation without prior tension, or relaxing specific muscle groups whilst using others, in order to mimic the circumstances in which relaxation will be used in “real life.” The order in which the muscles are relaxed varies, but a typical exercise may involve the following stages (the tensing procedure is described in brackets):

- hands and forearms (making a fist)
- upper arms (touching fingers to shoulder)

- shoulders and lower neck (pulling up shoulders)
- back of neck (touching chin to chest)
- lips (pushing them together)
- forehead (frowning)
- abdomen/chest (holding deep breath)
- abdomen (tensing stomach muscles)
- legs and feet (push heel away, pull toes to point at head: not lifting leg).

At the same time as practicing relaxation skills, individuals can monitor their levels of physical tension throughout the day using a diary to record their level of tension on some form of numerical scale (0 = no tension, 100 = the highest tension possible) at regular intervals through the day or at times of particular stress. This helps teach people how and when they become tense, and acts as a baseline against which to assess their progress when learning relaxation. As a prelude to the cognitive or behavioral interventions considered below, diaries may also focus on the thoughts, emotions, or behaviors experienced at times of stress (Table 34-1).

After learning relaxation techniques and monitoring tension, individuals can begin to integrate relaxation into their daily lives. At this time, relaxation involves monitoring and reducing tension to appropriate levels while engaging in everyday activities. Initially this may involve trying to keep as relaxed as possible at times of relatively low stress and then, as the individual becomes more skilled, implementing relaxation at times of increasing stress. An alternative strategy involves relaxing at regular intervals (such as coffee breaks) throughout the day.

Changing Triggers

The triggers to each person's stress necessarily differ, as will any strategies used to cope with them. Nevertheless, clinicians such as Egan¹³ have developed a relatively simple set of procedures for both identifying and changing stress triggers. It involves a three-phase process as outlined in the following sections:

- Problem exploration and clarification: what are the triggers to stress?
- Goal setting: which triggers does the individual want to change?
- Facilitating action: how do they set about changing the triggers to stress?

Problem Exploration and Clarification

The goal of this stage is to help an individual identify the problems he or she is facing that are contributing to the stress. Some of these may be immediately obvious; some require a more detailed exploration. However, detailed and careful work here prevents errors and failed attempts to resolve inappropriate issues subsequently. A number of techniques were identified to elicit relevant information at this stage. The most obvious method is to ask direct questions, which should be open-ended to discourage one-word answers. Requests for information may also take the form of prompts ("Tell me about . . ."). It is important to mix direct questioning with other strategies, including the use of silence or minimal prompts ("uh-huh") or empathic feedback, in

TABLE 34-1. Excerpt from a stress diary noting stress triggers, levels of tension, and related behaviors and thoughts

Time	Situation	Tension level	Behaviors	Thoughts
8.32	Driving to work – late!	62	Tense – gripping steering wheel Cursing at traffic lights	Late again!! . . . the boss is bound to notice . . . – Come on – hurry up – I haven't got all day! Why do these bloody traffic lights always take so long to change?!
10.00	Couldn't catch my breath while exercising	100	Got agitated Phoned home and said thought I was having a heart attack	Oh no . . . I'm having another heart attack . . . is this the time I die? My chest hurts just like last time . . .

which the health professional reflects back their understanding of the situation reported by the patient: "So, you find it scary when you are away from people who know about your heart condition, in case you experience problems . . .". Such feedback also shows that the health professional understands the situation and facilitates rapport with the patient.

Goal Setting

Once problems have been identified, some people may have the resources to deal with them and need no further help in making appropriate changes. Others, however, may need support in determining what they want to change and how to change it. The first stage in this process is to help them decide the goals they wish to achieve, and to frame their goals in specific rather than general terms ("I will walk for 20 minutes a day" versus "I will try to exercise more"). If any goal seems too difficult to achieve in one step, the elaboration of sub-goals should be encouraged. Some goals may be apparent following the problem exploration phase. However, should this not be the case, a series of strategies has been designed to help the patient identify and set them. Of critical importance is that the individual is invited to explore their own new perspectives – to think about new ways of doing things. Advice giving, however well phrased ("Well, why don't you take some time out each day to relax?"), is likely to result in resistance to change or feelings of defeat.

Facilitating Action

Having identified what they want to change, some people may remain unsure of how to achieve their goals. Accordingly, the final stage of this element of stress management is to plan ways of achieving the identified goals. Stress may have multiple sources, and some areas of stress may be easier to change than others. It can be helpful to work towards relatively easy goals at the beginning of any attempt at change, before working towards more serious or difficult to change goals as the individual gains skills or confidence in their ability to change.¹³

Cognitive Interventions

Two strategies for changing cognitions that contribute to stress are frequently employed. The simplest, known as self-instruction training, was developed by Meichenbaum¹⁴ and is intended to interrupt the flow of stress-provoking thoughts by replacing them with pre-rehearsed stress reducing or "coping" thoughts. These can be considered as three categories:

- Reminders to use any stress coping techniques the person has learned ("You're winding yourself up here – take it easy, remember to relax . . . deep breathe, relax . . .").
- Reassurance, reminding the individual that they can cope effectively with their feelings of distress ("Come on you've dealt with this before – you should be able to again – keep calm – things will not get out of control.").
- Reducing the stress inherent in the situation ("OK . . . this feels bad, but you've had this feeling before . . . it doesn't mean you are having another heart attack . . . you've just been trying too hard. Relax and the feelings will go like last time.").

To ensure relevance to the individual, and to help them to evoke these thoughts at times of stress, Meichenbaum suggested that particular coping thoughts should be thought through and rehearsed, wherever possible, before the stressful events occur – whether in a therapy session or minutes before a known stressor is likely to occur.

A more complex intervention, known as cognitive restructuring, involves identifying and challenging the accuracy of stress-engendering thoughts.¹⁴ It asks the individual to consider them as hypotheses, not facts, and to assess their validity without bias. The best way of challenging stressogenic thoughts may initially be taught within therapy sessions. In this, the health professional uses a process known as the Socratic method or "guided discovery"² to help patients identify distorted patterns of thinking that are contributing to their feelings of stress. Then, the health professional encourages the individual to consider and evaluate different sources of information that provide evidence of the reality or otherwise of the beliefs they hold. Patients may challenge their stressful assumptions by asking key questions such as:

- What evidence is there that supports or refutes my assumption?
- Are there any other ways I can think about this situation?
- Could I be making a mistake in the way I am thinking?

Once individuals can engage in this process within the therapy session, they are encouraged to use the Socratic process at times when they feel hooked into feelings of stress – to question the basis of those feelings. The following excerpt from a dialogue between a nurse and a patient who has had an MI shows the basics of the Socratic dialogue at work:

- Tom: Well, that's it . . . I've had a heart attack . . . that's my health ruined now . . . and I know I'll lose my job now. Bound to . . . and what's going to happen about money. Wow, we are in a real mess now . . .
- Nurse: Those are big worries to have . . . Tell me, why do you think you'll lose your job?
- Tom: Well, most people do when they've had a heart attack I guess . . . Why should I be different?
- Nurse: Some people do – but most don't lose their job. Having a heart attack does not necessarily disable you and stop you working . . . What sort of job do you have?
- Tom: I'm a manager in a large manufacturing company.
- Nurse: I imagine in a large company like that, many people must have serious illnesses at some time or other. How does the company treat them? Do you know?
- Tom: Not bad actually. Most people do OK.
- Nurse: Do they get made redundant?
- 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: Well, yes, I suppose so . . . But I've had a heart attack . . . that has to be more serious than most things . . .
- Nurse: Not necessarily at all . . . Most people go on to recover well from their heart

attack. The heart can recover just like any other part of the body. And if you look after yourself you could be as fit if not fitter than you are now.

Tom: So there's no real need for the company to have a problem with me?

Nurse: Not really.

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 and not simply to accept them as true. In addition, by giving some relevant information the health professional has aided his restructuring and encouraged him to reconsider his situation.

Behavioral Interventions

The goal of behavioral change is to help the individual respond to any stress triggers in ways that maximize their effectiveness in dealing with the trigger, and causes them minimal stress. Some behaviors can be relatively simple. Behaviors that reduce the stress of driving may involve, for example, driving within the speed limits, putting the handbrake on when stopped at traffic lights and taking time to relax, not cutting people up, and so on. Others may take practice – a person who becomes excessively angry, for example, may role play assertive responses within therapy sessions to prepare them for doing the same in “real life.” Still others have to be thought through at the time of the stress. Here, the goal of stress management training may be to teach the individual to plan their response to any potential stressor to be one that minimizes their personal stress. A simple rule of thumb that can be useful here is to encourage individuals to stop and plan what they are going to do – even if this takes a few seconds – rather than to jump into action without thought, as this typically leads to more rather than less stress.

Putting It All Together

The various strands of cognitive therapy described above could be combined into a simple iterative learning process in one of two ways.¹⁴

Firstly, when an individual is facing a stressor, they need to keep three processes under review:

- check that their behavior is appropriate to the circumstances
- maintain relaxation
- give themselves appropriate self-talk.

In addition, where a particular stressor can be anticipated, the opportunity should be taken to rehearse these actions before the event itself. Once in the situation, the planned strategies should be enacted. Finally, after the situation has occurred, time should be given to review what occurred and successes or failures learned from – rather than treated as disasters that should be forgotten.

Conclusions

Strategies to cope with stress are many and varied. Some may be as simple as the provision of reassuring information. Others require a more complex technology. This chapter has considered strategies that fall within the rubric of “stress management” training. Basic interventions and, in particular, relaxation can be taught by most healthcare professionals – and are frequently taught in a group context. The core elements of the problem-focused approach or cognitive interventions can be taught to individuals or groups of cardiac patients by professionals familiar with the issues. Indeed, the basic strategies of the problem-focused approach may be key to successful rehabilitation, as patients may benefit from thinking through not just how they can manage their stress but how they implement some of the broad issues of risk behavior change or disease management in their own lives. However, where an individual is reporting high levels of stress or distress, these (and other) strategies may best be implemented by more specialist health professionals with a background in mental as well as physical health problems.

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