**KEY KNOWLEDGE**

- Sources of stress (eustress and distress) including daily pressures, life events, acculturative stress, major stress and catastrophes that disrupt whole communities
- Models of stress as a biological process, with reference to Selye’s general adaptation syndrome of alarm reaction (shock/countershock), resistance and exhaustion, including the ‘fight-flight-freeze’ response and the role of cortisol
- Models of stress as a psychological process, with reference to Richard Lazarus and Susan Folkman’s Transactional Model of Stress and Coping (stages of primary and secondary appraisal)

- Context-specific effectiveness, coping flexibility and use of particular strategies (exercise and approach and avoidance strategies) for coping with stress.

**Eustress and distress**

**Sources of stress**

**Stress as a biological process**

**Stress as a psychological process**

**Strategies for coping with stress**
Exposure to stressful situations or events is a common human experience. These can range from daily pressures or hassles that are relatively minor events, such as forgetting a locker key or missing the bus, through to ones that are longer-lasting and much more challenging or even life-changing, such as the loss of a significant relationship or being the victim of a violent crime or catastrophic event. These situations and events can bring about stress; however, they do not describe or explain stress. They are examples of stressors — stimuli that cause or produce stress and challenge our ability to cope.

Psychologists often classify stressors as having an internal or external source. An internal stressor originates within the individual; for example, a personal problem that causes concern about the potential consequences or the experience of physical pain that may be perceived as signalling an untimely illness. An external stressor originates outside the individual from situations and events in the environment; for example, having too much homework, being nagged by parents, being in an overcrowded train or being threatened by someone outside a nightclub.

Stress has both biological and psychological components and consequences. It is therefore considered to be a psychobiological process. This is reflected in the definition of stress as a state of physiological (‘biological’) and psychological arousal produced by internal or external stressors that are perceived by the individual as challenging or exceeding their ability or resources to cope. Note the role of the individual in influencing a stress response. From a psychological perspective, stress is a subjective experience and therefore depends on our personal interpretation of a potential stressor.

Internally and externally sourced events are usually interpreted in a way that produces stress when we believe that we may not or do not have the ability or resources to cope with their demands or consequences. If we believe we can cope, these events may be perceived as difficult or ‘unsettling’ experiences, but not necessarily as stressors. For example, some people find speaking to a large group of people highly stressful, whereas others find it challenging but enjoyable rather than stressful. Similarly, some people experience a high level of stress when they are forced to make a significant change in their lives, whereas others may simply view change as an opportunity for a new experience.

**FIGURE 3.1** Exposure to stressful situations or events is a common human experience.
The stress we experience can sometimes be brief and specific to the demands of a particular situation, such as a deadline, a performance, or when dealing with a difficult challenge or traumatic event. This is commonly called acute stress and tends to produce a very high arousal level for a relatively short time. When acute stress occurs and over and over again, this may be referred to as episodic acute stress. These kinds of repetitive stress episodes may be due to a series of very real stressful challenges; for example, the death of a loved pet, then developing a health problem, followed by difficulties at school or work. Chronic stress involves ongoing demands, pressures and worries that are long-lasting. It can seem to go on forever, with little hope of letting up. This type of stress produces an increased arousal level that persists over a relatively long time and is likely to be harmful in some way to our health and wellbeing, psychologically and physically (APS, 2012).

**EUSTRESS AND DISTRESS**

When we think about stress we often focus on the negative effects it has on our lives. However, not all stress is necessarily negative, or ‘bad’. In fact, stress can have positive effects. The notion that stress could be either a negative (‘bad’) or positive (‘good’) state was first proposed by the Canadian doctor Hans Selye (1907–1982) who was a pioneering researcher on the harmful physiological effects of stress.

The excitement of a first date, an 18th birthday party, riding on a roller-coaster, meeting a celebrity, or getting an A+ for an exam can all cause what Selye (1974) called positive stress, or eustress. **Eustress** is a positive psychological response to a stressor, as indicated by the presence of positive psychological states such as feeling enthusiastic and motivated, excited, active and alert. Eustress is typically short-term and can provide the energy and motivation needed to achieve a goal or peak performance. Furthermore, it is not considered to be harmful or damaging to the body.

In contrast, **distress** is a negative psychological response to a stressor, as indicated by the presence of negative psychological states such as anger, anxiety, nervousness, irritability or tension. Distress can result from such situations as being in a long queue when in a hurry, losing an important sports match, watching a horror movie, financial pressures and ongoing problems in a relationship. Distress can be short-term but, for some stressors, can also persist for weeks, months or even years if it is not addressed and managed. Prolonged distress can have serious and debilitating consequences for our physical and mental health.

Generally, eustress is a good kind of stress because it is associated with positive feelings and a healthy bodily state, whereas distress is the bad kind, associated with negative feelings and a disturbed bodily state. When stress is beneficial or desirable it can be described as eustress. When stress is objectionable or undesirable, it can be described as distress. However, Selye also noted that the human body does not recognise the distinction between eustress and distress.

According to Selye (1974), all stressors produce a non-specific stress response. This means that regardless of whether a stressor involves positive eustress or negative distress, our body undergoes virtually the same physiological changes. For example, consider the scenarios of unexpectedly being told by your parents that they will separate immediately then divorce as soon as possible, and being minutes away from seeing a special person you have not seen for over a year. Both situations are likely to cause you to experience physiological arousal involving changes such as increased heart and breathing rates despite one being a ‘negative’ event and the other being a ‘positive’ event.

Although both positive and negative events result in virtually the same physiological responses, whether a situation or event is experienced as ‘eustressful’ or ‘distressful’ varies from individual to individual. It depends on psychological factors such as an individual’s personality, prior experience with the stressor and, most importantly, their perception and interpretation of the stressor; that is, whether they judge the stressor as positive or negative in relation to themselves. For example, an outgoing person might look forward to participating in extracurricular activities at school or attending social events (eustress), whereas a shy person might dread the same situations (distress). In addition, the same situation or event can be ‘eustressful’ or ‘distressful’ for the same person at different times. For example, if you are well prepared for a SAC test, taking that test might cause eustress. However, taking a test for which you are not at all prepared might cause distress.

**FIGURE 3.2** The same stressor may produce eustress in one person and distress in another.
LEARNING ACTIVITY 3.1

Review questions
1. (a) How is stress commonly defined in psychology? (b) Why is stress described as a psychobiological process? Explain with reference to an example.
2. (a) Distinguish between a stressor and stress with reference to an example not used in the text. (b) Explain the relationship between a stressor and stress with reference to an example not used in the text.
3. (a) Explain the difference between internal and external stressors with reference to one or more examples not used in the text. (b) Give an example of an internally sourced stressor that is not psychological.
4. (c) Explain how a physical stimulus in the environment such as noise or temperature may be a stressor.
5. (a) Distinguish between eustress and distress. (b) Describe two characteristics of eustress and two of distress. (c) Complete the following table on eustress and distress stressors you have experienced. In the first column, briefly describe three stressors that resulted in eustress and three stressors that resulted in distress. In the second column, classify each stressor as either predominantly eustress or distress. In the last column, explain your choice of classification.

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Eustress = E</th>
<th>Distress = D</th>
<th>Reason for classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Outline three events and/or situations that could cause eustress in one person and distress in another. Explain why the different responses can occur.

LEARNING ACTIVITY 3.2

Reflection
Comment on whether we experience more or less eustress or distress as a direct result of how we think about situations and events in our lives.
Virtually anything can be a source of stress and therefore a stressor. It may be internally or externally sourced. It may be psychological or physical in nature. It may be a person, object, situation, event or a combination of these. We consider sources of stress involving daily pressures, life events, acculturative stress, major stressors and catastrophes that disrupt whole communities.

Daily pressures

A lot of our stress is sourced in relatively minor troubles or concerns that arise in day-to-day living, such as having an argument with a friend, waiting in a line, looking for keys when in a hurry, and having too many things to do at once. These daily pressures or hassles as they are they are commonly called in psychology, are little problems of everyday living that are irritants — events that annoy or bother us and which can make us upset or angry. Some hassles occur on a fairly regular basis and others are relatively rare. Some have only a slight effect, others have a strong effect. They are not necessarily significant in themselves or distressing for a prolonged time, but they can pile up to become a major source of stress (DeLongis, Folkman & Lazarus, 1988; Kanner, et al., 1981).

Often, hassles are not readily identified as stressors because they are such a part of everyday life that they may be taken for granted. Table 3.1 lists hassles that have been identified through self-report research as being common causes of stress for people in each of three lifespan stages. Box 3.1 shows an example of a rating scale used to collect hassles data in the table.

Research studies have found that daily hassles are a strong predictor of both physical and psychological wellbeing. In addition, experiencing more hassles also tends to lead to more symptoms for people who are already suffering from a disease or disorder. Generally, the more hassles we experience, the more symptoms of physical and mental health problems we are likely to have (Sanderson, 2013).

When hassles persist or accumulate, physical health problems such as flu, sore throat, headaches and backaches are commonly reported. In relation to mental health, mood disturbance is common, especially when the stress level due to hassles increases. There are, however, significant individual differences. For example, people with low self-esteem and who also perceive that they lack access to supportive social relationships tend to be more likely to experience physical and psychological problems than individuals with high self-esteem and a belief that they have lots of opportunities for support from others when required (DeLongis, Folkman & Lazarus, 1988; Sanderson, 2013).

Studies have also found that the accumulation of daily hassles can contribute more to physical and/or psychological ill-health than a single, significant life event such as getting divorced or the death of a loved one (Kohn, Lafreniere & Gurevich, 1991). However, people who experience such disruptive life events are also likely to experience more daily hassles. For example, divorce is very stressful, but its stress effects may also be tied up in the increased number of hassles it creates, such as child care arrangements and concerns about money. It can therefore be difficult to isolate the effects of daily hassles and more significant stressors.

FIGURE 3.4 Waiting in a queue and being reprimanded by a parent are examples of daily pressures or hassles. Individually, they are irritants, but they may accumulate and the overall impact can have the same effect on wellbeing as the more significant life stressors.
TABLE 3.1 Common daily hassles

<table>
<thead>
<tr>
<th>Children and early adolescents</th>
<th>Middle–late adolescents</th>
<th>Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Having to clean up your room</td>
<td>• Conflicts with a boyfriend or girlfriend</td>
<td>• Concerns about weight</td>
</tr>
<tr>
<td>• Being bored and having nothing to do</td>
<td>• Dissatisfaction with your athletic skills</td>
<td>• Health of a family member</td>
</tr>
<tr>
<td>• Seeing that another child can do something better</td>
<td>• Having your trust betrayed by a friend</td>
<td>• Social obligations</td>
</tr>
<tr>
<td>• Being punished for doing something wrong</td>
<td>• Struggling to meet your own academic standards</td>
<td>• Concerns about money</td>
</tr>
<tr>
<td>• Having to go to bed when you don’t want to</td>
<td>• Not having enough leisure time</td>
<td>• Misplacing or losing things</td>
</tr>
<tr>
<td>• Being teased at school</td>
<td>• Gossip concerning someone you care about</td>
<td>• Home maintenance</td>
</tr>
<tr>
<td></td>
<td>• Dissatisfaction with your physical appearance</td>
<td>• Job security</td>
</tr>
</tbody>
</table>


LEARNING ACTIVITY 3.3

Reflection

Consider the stressors in table 3.1 derived from research conducted over 25 years ago.
(a) Which stressors for middle–late adolescents do you believe are still relevant or are no longer relevant?
(b) Which stressors do you believe might be included in the list if the studies were to be replicated by contemporary researchers?

BOX 3.1

Measuring ‘daily pressures’ using a Hassles Scale

The following scale includes items that have been used in many research studies to identify everyday pressures or hassles that can be stressors. Responses have been used to collate data like that in table 3.1, to compare groups based on characteristics such as sex, occupational, income or cultural differences, and to identify how hassles change over time. Generally the higher the score, the greater the hassle. You may consider creating a hassles scale for your own research investigation, using instructions and items such as those below.

The Hassles Scale

Following is a list of experiences which many people have some time or other. Please respond for each one that you have most recently experienced, its degree of severity in your life using the following scale. Put a ‘1’ in the space provided next to an experience if it had a somewhat severe effect; ‘2’ for an experience that had a moderately severe effect; and ‘3’ if it had an extremely severe effect. If you have not had the experience, put a ‘0’ in the space provided.

Severity of the most recent experience
0 = Not experienced
1 = Somewhat severe
2 = Moderately severe
3 = Extremely severe

1. Conflicts with a boyfriend or girlfriend _____________
2. Dissatisfaction with your athletic skills _____________
3. Having your trust betrayed by a friend _______________
4. Struggling to meet your own academic standards ___________
5. Not having enough leisure time _________________
6. Gossip concerning someone you care about ____________
7. Dissatisfaction with your physical appearance _________
8. Conflict with a teacher ___________________________
9. Social rejection _________________________________
10. Too many things to do at once _____________________
11. Being taken for granted __________________________
12. Being let down or disappointed by a friend __________
13. Concerns about weight ____________________________
14. Concerns about money _____________________________
15. Misplacing or losing things _______________________
16. Loneliness ______________________________________
17. Separation from people you care about ______________
18. Having your contributions overlooked ______________
19. Disliking a school subject _________________________
20. Being taken advantage of __________________________
21. Dissatisfaction with an ability _____________________
22. Struggling to meet the academic standards of others __________________
23. A lot of responsibilities __________________________
Life events

In addition to irritating daily pressures or hassles, we experience other life events that cause stress. A key feature of this type of life event is that it involves change that forces us to adapt to new circumstances; for example, the loss of a significant relationship, leaving home to live with a friend, beginning a new career and changing schools. Such events typically have immediate consequences and also require longer term adjustments.

Life events that are stressors include choices we make as individuals, not just things that happen to us. The events may therefore be pleasant ('positive') or unpleasant ('negative'). For example, most people choose to get married but many also report that marriage is a stressful event. Similarly, most parents choose to have their first child but many also report that the first week following the birth is one of the most joyful and stressful periods in their lives.

The idea that change associated with a life event can cause stress was first proposed by American doctor Thomas Holmes and his psychologist colleague Richard Rahe (1967). They examined more than 500 patient interviews and medical histories to identify the kinds of events that people found stressful. Holmes and Rahe then developed the Social Readjustment Rating Scale (SRRS) to measure stress in terms of life events. In their view, any event that required an individual to adjust their lifestyle, and therefore their established ways of thinking, feeling and behaving, would cause stress in varying amounts, depending on the event (stressor) and the level of readjustment required.

**Figure 3.5** Parenthood may be a life event stressor for most people as it involves change requiring adjustment to new circumstances.
As shown in Table 3.2, the scale included 43 life events that involve change and are therefore likely to require some level of adaptation. Each life event was assigned a numerical rating that estimates its relative impact in terms of life change units. Ratings range from a score of 100 for the life event causing the most stress (death of a spouse) through to 11 for the event causing the least stress (a minor violation of the law such as ‘jaywalking’). Note that the scale includes both negative items (e.g. death of a spouse) and positive items (e.g. marriage) as events that can produce stress.

Research conducted by Holmes and Rahe found that people who score 200 life change units or more within a 12-month period are more prone to physical and psychological stress-related illnesses or diseases. The likelihood of a stress-related disorder diminishes with the value of the score. For example, a person who is divorced, has a friend die and remarries all in a year is more likely to develop an illness or disease than a person who gets married, falls pregnant and dramatically changes the way they dress all in the same year.

The Social Readjustment Rating Scale has since been revised and, along with similar scales, is still commonly used for stress research. For example, researchers have used variations of the scale to establish links between the number, types and duration of life events and stress. However, the experience of one or more of the Holmes-Rahe life events or similar does not necessarily predict stress.

### Table 3.2 The Holmes and Rahe (1967) Social Readjustment Rating Scale

<table>
<thead>
<tr>
<th>Life event (mean value)</th>
<th>Life change unit</th>
<th>Life event (mean value)</th>
<th>Life change unit</th>
<th>Life event (mean value)</th>
<th>Life change unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death of a spouse</td>
<td>100</td>
<td>Change in financial state (much worse off or much better off than usual)</td>
<td>38</td>
<td>Change in working hours or conditions</td>
<td>20</td>
</tr>
<tr>
<td>Divorce</td>
<td>73</td>
<td>Death of a close friend</td>
<td>37</td>
<td>Change in residence</td>
<td>20</td>
</tr>
<tr>
<td>Marital separation</td>
<td>65</td>
<td>Change to a different line of work</td>
<td>36</td>
<td>Change in school or college</td>
<td>20</td>
</tr>
<tr>
<td>Detention in jail</td>
<td>63</td>
<td>Change in number of arguments with spouse (many more or many less than usual)</td>
<td>35</td>
<td>Change in recreational habits</td>
<td>19</td>
</tr>
<tr>
<td>Death of close family member</td>
<td>63</td>
<td>Mortgage or loan</td>
<td>31</td>
<td>Change in church activities</td>
<td>19</td>
</tr>
<tr>
<td>Personal injury or illness</td>
<td>53</td>
<td>Foreclosure of mortgage or loan</td>
<td>30</td>
<td>Change in social activities</td>
<td>18</td>
</tr>
<tr>
<td>Marriage</td>
<td>50</td>
<td>Change in responsibilities at work (promotion, demotion, lateral transfer)</td>
<td>29</td>
<td>Mortgage or loan for a minor purchase (car, television)</td>
<td>17</td>
</tr>
<tr>
<td>Dismissal from work</td>
<td>47</td>
<td>Son or daughter leaving home</td>
<td>29</td>
<td>Change in sleeping habits (much more or much less)</td>
<td>16</td>
</tr>
<tr>
<td>Marital reconciliation</td>
<td>45</td>
<td>Trouble with in-laws</td>
<td>29</td>
<td>Change in number of family get-togethers</td>
<td>15</td>
</tr>
<tr>
<td>Retirement from work</td>
<td>45</td>
<td>Outstanding personal achievement</td>
<td>28</td>
<td>Change in eating habits</td>
<td>15</td>
</tr>
<tr>
<td>Change in health of family member</td>
<td>44</td>
<td>Spouse begins or stops work</td>
<td>26</td>
<td>Vacation</td>
<td>13</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>40</td>
<td>Beginning or ending school</td>
<td>26</td>
<td>Christmas</td>
<td>12</td>
</tr>
<tr>
<td>Sexual difficulties</td>
<td>39</td>
<td>Change in living conditions (building new house, renovating, deterioration of home or neighbourhood)</td>
<td>25</td>
<td>Minor violations of the law (jaywalking, disturbing the peace, traffic fine)</td>
<td>11</td>
</tr>
<tr>
<td>Gain of new family member</td>
<td>39</td>
<td>Revision of personal habits (dress, manners)</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business readjustment (merger, reorganisation)</td>
<td>39</td>
<td>Trouble with boss</td>
<td>23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Researchers have confirmed that the death of a marital partner is one of the most stressful Holmes-Rahe type life events any individual can experience, regardless of their cultural background. However, the death of a child can be equally stressful and impose the same level of adjustment demands. Research studies of people who lost a spouse or child in a car accident have found that a significant number of the bereaving individuals are distressed for as long as seven years after a sudden loss. Many experience depression, anxiety disorders, fatigue and loneliness (Burton, Westen & Kowalski, 2012).

One Finnish study tracked more than 158,000 adults aged 35 to 84 years for a five year period after the death of a spouse. The researchers found that a high proportion were at a substantially increased risk for death from accidental, violent, and alcohol-related causes, heart disease and lung cancer. The risk was greater at short (< 6 months) rather than long durations of bereavement and among younger rather than older bereaved persons for most causes of death (Martikainen & Valkonen, 1996).

The Australian Psychological Society (APS) conducts annual research (by online survey) to assess the stress and wellbeing of the Australian population. As shown in figure 3.7, the leading causes of stress among Australians in 2015 involved financial issues, family issues and health issues. These were consistently reported as the leading stressors in each of the previous five years in which the survey has been conducted. In addition, 72% of participants reported that current stress was having at least some impact on their physical health, with 64% believing it is having an impact on their mental health. Of those experiencing stress, about four in 10 reported that it is having a moderate to very strong impact on their physical health. The research consistently finds that unemployment-related stress can impair physical and mental health, and that the longer the period of unemployment the greater this risk of a health problem. However, the effects on people experiencing this stressor tend not to be as dramatic as those among people bereaving the death of a spouse. Key findings for unemployed participants in the APS research in 2014 and 2015 research include:

- significantly higher levels of stress than participants who were employed (both full-timers and part-timers) or retired, with 91% of the unemployed reporting that current stress was having at least some impact on physical health and 27% reporting that their current stress was having a strong to very strong impact on physical health
- 87% of the unemployed reported that current stress was having at least some impact on mental health, with 36% reporting that their current stress was having a strong to very strong impact on mental health
- the unemployed had the highest levels of depression and anxiety symptoms compared with employed participants.

**Figure 3.6** In the Social Readjustment Rating Scale, death of a spouse is the life event that causes the greatest social readjustment and stress. However, the death of a spouse who has been abusive to their partner throughout the relationship may also alleviate the stress of the abused person.
### Table 3.3: Prevalence of stressors among different age groups

<table>
<thead>
<tr>
<th>Stressor</th>
<th>18–25</th>
<th>26–35</th>
<th>36–45</th>
<th>46–55</th>
<th>56–65</th>
<th>66 and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal financial issues</td>
<td>59%</td>
<td>57%</td>
<td>58%</td>
<td>50%</td>
<td>38%</td>
<td>25%</td>
</tr>
<tr>
<td>Issues with trying to maintain a healthy lifestyle</td>
<td>54%</td>
<td>43%</td>
<td>37%</td>
<td>44%</td>
<td>32%</td>
<td>27%</td>
</tr>
<tr>
<td>Family issues</td>
<td>50%</td>
<td>48%</td>
<td>46%</td>
<td>50%</td>
<td>41%</td>
<td>32%</td>
</tr>
<tr>
<td>Friendship issues</td>
<td>50%</td>
<td>35%</td>
<td>25%</td>
<td>25%</td>
<td>14%</td>
<td>7%</td>
</tr>
<tr>
<td>Issues related to study</td>
<td>48%</td>
<td>24%</td>
<td>15%</td>
<td>8%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Relationship issues</td>
<td>42%</td>
<td>45%</td>
<td>35%</td>
<td>29%</td>
<td>16%</td>
<td>17%</td>
</tr>
<tr>
<td>Personal health issues</td>
<td>39%</td>
<td>39%</td>
<td>40%</td>
<td>45%</td>
<td>44%</td>
<td>43%</td>
</tr>
<tr>
<td>Issues with the health of others close to you</td>
<td>38%</td>
<td>33%</td>
<td>34%</td>
<td>37%</td>
<td>38%</td>
<td>40%</td>
</tr>
<tr>
<td>Issues in the workplace</td>
<td>38%</td>
<td>49%</td>
<td>38%</td>
<td>37%</td>
<td>20%</td>
<td>5%</td>
</tr>
<tr>
<td>Mental health issues</td>
<td>32%</td>
<td>28%</td>
<td>22%</td>
<td>25%</td>
<td>16%</td>
<td>11%</td>
</tr>
<tr>
<td>Issues about the economy</td>
<td>26%</td>
<td>29%</td>
<td>29%</td>
<td>33%</td>
<td>27%</td>
<td>31%</td>
</tr>
<tr>
<td>Issues around personal safety</td>
<td>21%</td>
<td>19%</td>
<td>16%</td>
<td>11%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Issues regarding the current political climate</td>
<td>21%</td>
<td>24%</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>37%</td>
</tr>
<tr>
<td>Environment issues</td>
<td>16%</td>
<td>20%</td>
<td>17%</td>
<td>18%</td>
<td>17%</td>
<td>21%</td>
</tr>
</tbody>
</table>


### Box 3.2: Perceived Stress Scale

The Perceived Stress Scale (PSS) is the most widely used self-report instrument for measuring perception of stress; more specifically, the degree to which situations in one’s life are assessed as stressful. Items are designed to tap how unpredictable, uncontrollable and overloaded respondents find their lives. The 10-item scale also includes a number of questions about the levels of stress currently being experienced.

The PSS was designed for use in samples with at least a junior secondary school education. The items have been found to be easy to understand, with response alternatives that are simple to grasp.

The PSS was designed for use in samples with at least a junior secondary school education. The items have been found to be easy to understand, with response alternatives that are simple to grasp.

The questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way.

You may consider using the PSS for your own research investigation. Note the provision for recording personal details of participants that may be relevant to the research.

**Perceived Stress Scale**

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender (Circle): M F Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = Never</td>
<td>1 = Almost Never</td>
</tr>
<tr>
<td>1. In the last month, how often have you been upset because of something that happened unexpectedly?</td>
<td>0</td>
</tr>
<tr>
<td>2. In the last month, how often have you felt that you were unable to control the important things in your life?</td>
<td>0</td>
</tr>
<tr>
<td>3. In the last month, how often have you felt nervous and ‘stressed’?</td>
<td>0</td>
</tr>
<tr>
<td>4. In the last month, how often have you felt confident about your ability to handle your personal problems?</td>
<td>0</td>
</tr>
<tr>
<td>5. In the last month, how often have you felt that things were going your way?</td>
<td>0</td>
</tr>
<tr>
<td>6. In the last month, how often have you found that you could not cope with all the things that you had to do?</td>
<td>0</td>
</tr>
<tr>
<td>7. In the last month, how often have you been able to control imitations in your life?</td>
<td>0</td>
</tr>
<tr>
<td>8. In the last month, how often have you felt that you were on top of things?</td>
<td>0</td>
</tr>
<tr>
<td>9. In the last month, how often have you been angered because of things that were outside of your control?</td>
<td>0</td>
</tr>
<tr>
<td>10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?</td>
<td>0</td>
</tr>
</tbody>
</table>


The impact of any Holmes-Rahe life event, whether it is classified positive or negative, will depend on the individual, how they interpret the stressor, and their ways of coping. Different events can have different meanings for different individuals, so the stress-producing potential of an event can vary widely from one person to another. For example, changing schools tends to be less stressful to students who know someone at the new school and even less stressful if that person will be in the same class or year level. Similarly, consider a person who is in a marriage that is filled with conflict, tension and unhappiness, which means that their marriage is likely to be very stressful. For this individual, getting divorced (73 life change units in the SRRS scale) might be significantly less stressful than remaining married, so divorce might actually have the effect of alleviating their stress.

Consequently, some researchers have tended to study specific life-changing events in more depth and measure an individual’s perceived stress — the extent to which an individual considers the experience they have undergone as either exacerbating (‘worsening’) or alleviating (‘lessening’) stress in their lives. These studies have provided considerable evidence that significant life-changing events, both positive and negative, can produce, exacerbate or alleviate stress, depending on the individual and their personal circumstances. Furthermore, although there is a link between negative life events (such as getting hurt, divorced or retrenched from a job) and stress-related disorders, research evidence does not similarly support positive life events (such as taking a vacation, graduating, winning a lottery, starting a new career or getting married) as similarly harmful.

**BOX 3.3**

**Heavy use of social media and the Fear of Missing Out on good times as a stressor**

The Australian Psychological Society (2015b) has examined our use of social media on wellbeing and behaviour, with a particular interest in ‘Fear of Missing Out’ as a potential stressor. Fear of Missing Out (FOMO) was defined as a ‘pervasive apprehension that others might be having rewarding experiences that you are not part of’. In relation to social media, this experience is ‘characterised by the desire to stay continually connected with what others are doing’. The study found that ‘social media is both a cause of stress and a means of managing stress’. For example, more than one in 10 (12%) of the survey respondents reported ‘issues with keeping up with social media networks’ as a source of stress.

Among young adolescents aged 13–17 years, about one in two (50%) reported that they experience stress due to FOMO, with those who connect five or more times a day and are therefore ‘heavy users’, experiencing higher levels. Heavy adolescent users are significantly more likely to experience aspects of FOMO such as:

- feeling it is important that they understand their friends’ in-jokes (78%);
- fearing their friends are having more rewarding experiences than them (54%);
- worrying when they find out their friends are having fun without them (60%); and
- being bothered when they miss out on planned get-togethers (63%).

By contrast, FOMO was reported by one in four adults. Heavy adult users are significantly more likely to experience the same aspects of FOMO as adolescent users, but at much lower levels. For example, fearing their friends are having more rewarding experiences than them was reported by 26% and worrying when they find out their friends are having fun without them was reported by 17%.

According to the APS, the overall heavier use of social media by young adolescents means that ‘teens are significantly more likely to experience all aspects of FOMO than adults’, which ‘suggests that social media has a greater impact on teens and plays a role in their identity formation and their search for a sense of self’.

**FIGURE 3.8** Heavy social media users are more likely to experience stress due to a fear of missing out on the good times their friends are having.
Let's explore the document in detail.

**LEARNING ACTIVITY 3.4**

**Reflection**

Read box 3.3, then comment on FOMO stressor experiences of someone you know (without giving details that would reveal their identity).

**LEARNING ACTIVITY 3.5**

**Review questions**

1. (a) Define the meaning of daily pressure (hassle) as a stressor.
   (b) Give an example of an internally sourced and an externally sourced stressor of this type.
2. How do daily pressures or hassles contribute to stress?
3. Explain how daily pressures or hassles may be a confounding variable in research that uses a Holmes-Rahe life event as an independent variable.
4. (a) Define the meaning of ‘life event’ as a stressor.
   (b) Give an example of an internally sourced and an externally sourced ‘life event’ stressor.
   (c) Give an example of a ‘positive’ and a ‘negative’ ‘life event’ stressor.
5. (a) In what way is a ‘life event’ stressor alike and unlike a ‘daily pressure’ stressor?
   (b) How are life events and ‘daily pressure’ stressors best distinguished?
6. Suggest a Holmes-Rahe life event stressor which you believe is over-rated or under-rated in relation to 21st century life as you know it.

**LEARNING ACTIVITY 3.6**

**Reflection**

Comment on whether the Holmes-Rahe scale in table 3.2 would provide a valid measure of ‘life event’ related stress you experience and explain why you hold this view.

**LEARNING ACTIVITY 3.7**

**Analysis of data**

Consider the APS data in figure 3.7 and table 3.3 and answer the following questions.

1. (a) What were the top five stressors in Australia in 2015 and the percentages reporting these?
   (b) Access the current APS research report at www.psychology.org.au to identify and describe change that may have occurred to the top five in the current and previous surveys and the explanation of any change.
   (c) In 2015, the APS broadened their annual stress and wellbeing research to include a study of FOMO (see box 3.3). What is another significant change to the aims and/or scope of the APS research since 2015?
2. Table 3.3 compares stressors across age groups in 2014. These results were not available in 2015 but the data has been consistent across all previous years in which the research has been conducted.
   (a) Describe, in one sentence, the overall relationship between stress and age that is apparent in the data.
   (b) How do the top five stressors vary according to age?
   (c) What is the most common stressor across all age groups?
   (d) What significant age differences, if any, have been identified in the most recent research report?
3. Formulate a research hypothesis that would be supported by the 2014 results for 18–25 year olds. Identify the operationalised independent variables relevant to your hypothesis.
4. According to the APS, the 2015 sample consisted of 1521 participants who were representative of the Australian adult population (18 and above) for age, gender, geographical location and work status.
   Are the results generalisable to:
   (a) the study’s population?
   (b) other populations?
   Explain your answers.
Acculturative stress

For international students, immigrants, refugees and asylum seekers coming to Australia and other countries, departure can be a means of escaping social injustice, persecution, civil unrest, political turmoil, torture, war famine or poverty. Therefore, moving to another country, either temporarily or permanently, can be a means of reducing stress. However, the demands of adjusting to a new culture can be extremely stress-producing.

Establishing a new life in one’s adopted country is usually a very difficult and challenging adjustment, especially when there are significant cultural differences. Inevitably, there is a need to become acculturated; that is, to adopt the values, customs and language preferences of the new dominant culture. Thus, acculturative stress refers to the stress people experience in trying to adapt to a new culture when living in it for a considerable period of time (Berry, 2005; Poyrazli, Thukral & Du, 2010).

Acculturative stress can occur whether people willingly relocate or emigrate for better opportunities or flee as refugees or asylum seekers. People entering new cultures frequently encounter language difficulties, racial or ethnic discrimination, lower socioeconomic status (such as overseas-trained engineers or doctors working in Australia as labourers or taxi drivers because their qualifications are not recognised), and loneliness and homesickness due to separation from friends, family and other people, objects and experiences associated with the original home environment. Immigrants also face conflicts over preserving their old values and beliefs and adapting to the customs of their new culture. Many refugees and asylum seekers must also come to terms with torture or with the torture or murder of loved ones back home. All of these can be significant stressors that have debilitating effects (Burton, Westen & Kowalski, 2012; Jatrana, Pasupuleti & Richardson, 2014; Travis & Meltzer, 2008).

Research findings indicate that belonging to an ethnic or cultural minority group significantly increases the risk of developing stress-related physical or mental health problems. Box 3.4 summarises some of the experiences reported by ethnic or cultural minority groups in Australia that produce the most stress.

Many factors can influence how much acculturative stress an individual experiences. For example, when the new society is one that accepts ethnic and cultural diversity, acculturative stress is reduced. The ease of transition is also enhanced when the person has some familiarity with the new language and customs, advanced education, and social support from friends, relatives, and organisations formed by and for members of the cultural group. The individual’s attitudes are also important in determining the degree of acculturative stress. For example, individuals who continue to value their original cultural customs but also seek to integrate by becoming part of the dominant culture of the new society tend to experience a low level of acculturative stress, whereas individuals who follow a pattern of separation or withdrawal by maintaining their cultural identity and avoiding contact with the dominant new culture tend to experience a very high level of acculturative stress. Age, education, religion and gender have also been all significantly associated with differences in the frequency of experiencing racial discrimination (Berry, 2005; Ferdinand, Paradies & Kelaher, 2015; Hockenbury & Hockenbury, 2006).
Ethnic and race-based experiences that produce stress

A survey of more than 4000 Victorians conducted by researchers for VicHealth found that people who were born in a country in which the main language spoken was not English were:
- more than twice as likely as Australian-born people to report being treated with disrespect because of their ethnicity or race (42% compared with 18%)
- two-and-a-half times as likely to report being treated with distrust on the basis of their ethnicity or race (33% compared with 13%)
- nearly twice as likely to report experiences of name-calling and/or insults on the basis of their ethnicity or race (43% compared with 22%)
- twice as likely to experience discrimination either at a shop, restaurant or at a sporting or other large public event
- three times as likely to experience discrimination in the workplace
- twice as likely to experience discrimination in education
- around four times as likely to experience discrimination from police and when seeking accommodation.

A more recent study obtained similar results from 1139 Australians living in metropolitan and rural areas. Data collected included types of racial discrimination experienced, settings for these incidents, and the level of ‘psychological distress’ caused by the incidents. The majority of participants were born in the Middle East (25.6%), followed by Africa (21.7%), East Asia (13.9%), South Asia (10.2%) and the Pacific Islands (9.7%). The mean age of the sample was 36 years and the most common religion was Islam (38.2%), followed by Christianity (30.8%).

Figures 3.10 and 3.11 show data on the settings of racist experiences and the specific types of racist experiences. The researchers found that experiencing discrimination in certain settings was particularly associated with high or very high psychological distress and that poorer mental health was associated with the amount of discrimination experienced, rather than the type of experience (Ferdinand, Paradies & Kelaher 2015).

Experiences of racism

Nearly two-thirds of participants reported at least one discriminatory experience in the preceding 12 months, with 23% reporting between one and five experiences, 22% reporting between six and eight experiences and 18% of all respondents reporting nine or more experiences. No experiences were reported by 37% of respondents.

As shown in figure 3.10, the most frequent experience reported was being a target of racist names, jokes or teasing, or hearing comments that rely on stereotypes of the participant’s racial, ethnic cultural or religious group. This experience was reported by 55% of participants. Having property vandalised was reported by more than one-quarter of participants.
A shown in figure 3.11 below, discrimination most commonly occurred in public spaces, with 35% of participants reporting that they had experienced a discriminatory incident in a public space in the previous 12 months, followed by employment (33%) and a further 30% each experiencing incidents in shops and public transport. Data were not collected on perpetrators in specific settings. Therefore, it is not known whether the racist behaviours in settings such as health care, local council, or justice settings were initiated by staff, clients or others.

**FIGURE 3.11** Settings where Victorians from racial/ethnic minority backgrounds experienced racism


**BOX 3.5**

**The Acculturative Stress Scale for International Students (ASSIS)**

More than one in five students studying in Australia are international students on a student visa. In 2015, China was the biggest source country for higher education enrolments, at 35%, ahead of India on 12%. Many international students are also enrolled in secondary schools. International students make a significant contribution to Australian society, diversifying and enriching communities. The decision to study in Australia also offers many benefits to international students, allowing them to gain an internationally recognised education, as well as the opportunity to experience life in Australia (Australian Bureau of Statistics [ABS], 2011; Knott, 2015).

The **Acculturative Stress Scale for International Students (ASSIS)** has been designed to measure acculturative stress among international students. The 36 item scale was developed by Indian-born American psychologist Daya Sandhu and his mathematician colleague Badiolah Asrabadi in 1994.

Responses are scored on a 5-point Likert-type rating scale (see page 000), with a score of 1 being ‘strongly disagree’ and 5 being ‘strongly agree’. Total scores range from 36 to 180, with high scores referring to higher acculturative stress.

Items are designed to measure stress level in relation to six subscales (‘stressor categories’) called Perceived Discrimination, Homesickness, Perceived Hate, Fear, Stress Due To Change/Cultural Shock, and Guilt.

**Acculturative Stress Scale for International Students**

**Directions:**

As foreign students have to make a number of personal, social, and environmental changes upon arrival in a strange land, this cultural-shock experience might cause them acculturative stress. This scale is designed to assess such acculturative stress you personally might have experienced. There are no right or wrong answers. However, for the data to be meaningful, you must answer each statement given below as honestly as possible.
Major stressors

A major stressor is an event that is extraordinarily stressful or disturbing for almost everyone who experiences it. It may be a single, one-off event, such as being the victim of a violent crime or it may be an ongoing, unremitting event, such as a terminal illness. In either case, the event is highly likely to be a terrible experience that is very frightening or distressing. The event does not necessarily have to be directly experienced. For example, the stressor may involve witnessing the event as it occurs to someone else, or learning that a close family member or close friend experienced the event, especially if the event is one in which there was actual or threatened death or serious violence or injury (Schnurr, et al., 2002; Schnurr, Vielhauer & Findler, 1995).

Major stressors are often described as psychologically traumatic events because they typically involve experiences that are life threatening, or where there is a significant threat to the individual's physical or psychological wellbeing. There is an adverse emotional reaction that may result in a difficulty in coping or functioning as the person normally does. Potentially traumatic events are powerful and upsetting incidents that often affect individuals in ways that intrude into daily life.

Major stressors that can lead a person to experience psychological trauma include:

- acts of violence such as an armed robbery, war or terrorism
- natural disasters such as bushfire, earthquake or floods
• interpersonal violence such as rape, child abuse, or suicide of a family member or friend
• involvement in a serious motor vehicle or workplace accident (APS, 2016).

Many people have strong emotional or physical reactions following experience of a traumatic event. Immediately after the event, shock and denial are typical. Longer term reactions include unpredictable emotions, flashbacks, strained relationships and even physical symptoms like headaches or nausea. While these feelings are normal, some people have difficulty moving on with their lives (APA, 2015).

For most, these reactions subside over a few days or weeks. For some, the symptoms may last longer and be more severe. This may be due to several factors such as the nature of the traumatic event, the level of available support, previous and current life stress, personality and coping resources.

According to the Australian Psychological Society (2016), symptoms of psychological trauma due to a major stressor are physical, cognitive, behavioural and emotional in nature. These may include:

- physical: hypervigilance (i.e. excessive alertness, on the lookout for signs of danger); easily startled; fatigue/exhaustion; disturbed sleep; general aches and pains
- cognitive: intrusive thoughts and recurring memories of the event; visual images of the event; nightmares; poor concentration and memory; disorientation; confusion
- behavioural: avoidance of places or activities that are reminders of the event; social withdrawal and isolation; loss of interest in normal activities
- emotional: fear; numbness and detachment; depression; guilt, anger and irritability; anxiety and panic.

As long as they are not too severe or last for too long, the symptoms described above are normal reactions to trauma. Although these symptoms can be distressing, they will settle quickly in most people. They are part of the natural healing process of adjusting to an extraordinarily stressful or disturbing event, making some sense out of what happened, and putting it into perspective. With understanding and support from family, friends and colleagues the stress symptoms usually resolve more rapidly. A minority of people will develop more serious conditions such as depression, acute stress disorder, posttraumatic stress disorder, anxiety disorders, or alcohol and drug problems.
**Box 3.6**

**Brief Trauma Questionnaire**

The Brief Trauma Questionnaire (BTQ) is a 10-item self-report questionnaire that may be used to determine whether an individual has experienced a major stressor involving a psychologically traumatic event. It was originally designed to support the assessment of Posttraumatic Stress Disorder.

**Instructions**

The following questions ask about events that may be extraordinarily stressful or disturbing for almost everyone. Please circle ‘Yes’ or ‘No’ to report what has happened to you.

*If you answer ‘Yes’ for an event, please answer any additional questions that are listed on the right side of the page to report: (1) whether you thought your life was in danger or you might be seriously injured; and (2) whether you were seriously injured.*

*If you answer ‘No’ for an event, go on to the next event.*

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Did your think your life was in danger or you might be seriously injured?</th>
<th>Were you seriously injured?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you ever served in a war-zone or in a noncombat job that exposed you to war-related casualties (e.g., as a medic or on graves registration duty)?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Have you ever been in a serious car accident, or serious accident at work or somewhere else?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Have you ever been in a major natural or technological disaster, such as a fire, tornado, hurricane, flood, earthquake, or chemical spill?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Have you ever had a life-threatening illness, such as cancer, a heart attack, leukemia, AIDS, multiple sclerosis, and so forth?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Have you ever been attacked, beaten up, or mugged by anyone, including friends, family members, or strangers?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>6. As a child, were you ever physically punished or beaten by a parent, caretaker, or teacher so that you were very frightened; or you thought you would be injured; or you received bruises, cuts, welts, lumps, or other injuries?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>7. Have you ever been in a situation in which someone made or pressured you into having some type of unwanted sexual contact?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>8. Have you ever been in any other situation in which you were seriously injured? Have you ever been in any other situation in which you feared you might be seriously injured or killed?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>9. Have you ever witnessed a situation in which someone was seriously injured or killed? Have you ever witnessed a situation in which you feared someone would be seriously injured or killed?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>10. Have any close family members or friends died violently, for example, in a serious car crash, mugging, or attack?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>


Catastrophes

Sometimes a stressor can disrupt and affect an entire community all at once. This tends to occur when the stressor takes the form of a catastrophe. A catastrophe is an unpredictable event that causes widespread damage or suffering. The event is a stressor of massive proportion — one that the majority of people involved would interpret as being stressful. It usually occurs suddenly, affects many people simultaneously and is completely out of their control. Sometimes referred to as a cataclysmic event or simply as a disaster, a catastrophe can be natural or attributable to humans.

Natural disasters are relatively common catastrophic events when considered from a global perspective. In Australia, these are mainly bushfires, major floods and cyclones. For example, in February 2009, bushfires throughout Victoria killed 173 people and destroyed more than 4500 homes and buildings in many areas. Entire towns and communities were devastated. Thousands of people were left homeless and suffered other significant personal losses for a prolonged period. Farmers lost thousands of livestock as a result of the fires and native animal populations were destroyed.

Other naturally occurring catastrophes include tsunamis, earthquakes, hurricanes and mudslides. These are more common elsewhere in the world. One of the deadliest ever recorded is the massive tsunami on Boxing Day 2004 that caused devastation around the Indian Ocean, resulting in the deaths of 230 000 people. The worst hit area was the province of Aceh on the west coast of Indonesia where the series of tsunami waves travelled about 2 kilometres inland in some areas, wrecking everything in their path. In some coastal villages, more than 70% of villagers were killed. Over 600 000 people lost their livelihoods following the destruction of much of the fishing and agricultural sectors.

One of the most disastrous earthquakes occurred in January 2010, hitting the Caribbean island of Haiti, devastating its capital Port-au-Prince and surrounding areas. The earthquake affected over two million Haitians, claimed more than 200 000 lives and left 300 000 injured. More than 1.5 million people were internally displaced in some 1500 spontaneous settlements in and around the capital and affected areas.

Catastrophic events attributable to or caused by humans (sometimes called ‘human-made’) include terrorist attacks such as the assault on New York’s World Trade Centre on September 11 2001, civil wars within nations and wars between nations. The New York terrorist attacks claimed the lives of more than 2500 people and were witnessed on live television by millions throughout the world. In a nationwide survey conducted later that week, 90% of the participants, whether present or a witness from afar, reported that they were experiencing stress-related symptoms, with 44% reporting ‘substantial’ symptoms such as recurring thoughts, dreams and memories; difficulty falling or staying asleep; difficulty concentrating at work; and unprovoked outbursts of anger. The closer the participants lived to the disaster area, the greater the number of problems reported and the more distressed they were from the experience (Kassin, Fein & Markus, 2008).

Some human-made catastrophes involve hazardous material incidents. These leave widespread contamination for prolonged periods that create a unique stress experience for victims and can make it harder for them to adapt to, in comparison with victims of most natural disasters. For example, with natural disasters, there is usually no one is to blame, whereas with a human-made disaster, blame can often be assigned to some kind of system malfunction or negligence by someone. Additional stressors that can occur with hazardous material catastrophes include fear of invisible (or radiological) exposure, or, if exposed, worry and uncertainty about possible future health effects. Contamination can take years to clean up and render an area safe. Studies have found high levels of long-term stress in communities affected by exposure to toxins (Baum & Fleming, 1993; Couch & Kroll-Smith, 1991).
TABLE 3.4 Psychological responses of communities to environmental contamination

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear and uncertainty over the possible health effects of exposure</td>
</tr>
<tr>
<td>Feeling a loss of control over the present and future</td>
</tr>
<tr>
<td>Anger over the loss of security and safety within the community</td>
</tr>
<tr>
<td>Confusion brought about by trying to understand various government documents</td>
</tr>
<tr>
<td>Community conflict over who is to blame and what actions to take</td>
</tr>
<tr>
<td>Concerns over economic losses (e.g., property devaluation, doctor bills, and business losses)</td>
</tr>
<tr>
<td>Feelings of being stigmatised and isolated because of living near a hazardous waste site</td>
</tr>
<tr>
<td>Frustration of dealing with bureaucratic agencies</td>
</tr>
<tr>
<td>Frustration of being accused of ‘overreacting’</td>
</tr>
</tbody>
</table>


Regardless of its cause, a catastrophe is a significant stressor and distressing experience for all involved. They affect individuals, groups and entire communities directly as well as other people less directly, such as those who live nearby, witness the suffering of others or know a person who experienced the event.

The amount of exposure to the catastrophic event and whether exposure is first or second hand are highly related to risk of future mental health problems. At highest risk are those who go through the event themselves, especially if they are injured or their life is threatened. Next are those who are in close contact with victims. At lower risk of long-term impact are those who had only indirect exposure, such as news of the severe damage.

Another important factor is the social response to the catastrophe — how widely the individual’s social network is disrupted and how quickly outside support and aid arrived for the victims. Social support from family, friends or the community provides important resources for coping.

In the immediate aftermath of a disaster, almost everyone will find themselves unable to stop thinking about what happened. They will also exhibit high levels of physiological arousal. For most, fear, anxiety, re-experiencing events, efforts to avoid reminders, and arousal symptoms, if present, will gradually decrease over time.

Most survivors (including children and disaster rescue or relief workers) experience common stress reactions after a catastrophic event. These reactions may last for several days or even a few weeks and may include psychological and physical reactions. While most survivors of catastrophic events are able to gradually come to terms with their experience on their own, or with the support of family and friends, many develop chronic (long-lasting) stress-related symptoms and need more help. Some survivors (and witnesses) may also experience physiological and psychological symptoms that can last long after the event has passed. Psychologists have several names for these reactions, including acute stress disorder (ASD) and posttraumatic stress disorder (PTSD) (see box 3.7).
Common reactions and responses to catastrophic event

Disasters such as bushfires, floods, cyclones, earthquakes, chemical spills, transportation accidents or terrorist attacks are typically unexpected, sudden and overwhelming. For many people, there are no outwardly visible signs of physical injury, but there can nonetheless be an emotional toll.

Following a catastrophic event, people frequently feel stunned, disoriented or unable to integrate distressing information. Once these initial reactions subside, people can experience a variety of thoughts, feelings and behaviours. Common responses can be:

- **Intense or unpredictable feelings.** You may be anxious, nervous, overwhelmed or grief-stricken. You may also feel more irritable or moody than usual.
- **Changes to thoughts and behaviour patterns.** You might have repeated and vivid memories of the event. These memories may occur for no apparent reason and may lead to physical reactions such as rapid heartbeat or sweating. It may be difficult to concentrate or make decisions. Sleep and eating patterns also can be disrupted — some people may overeat and oversleep, while others experience a loss of sleep and loss of appetite.
- **Sensitivity to environmental factors.** Sirens, loud noises, burning smells or other environmental sensations may stimulate memories of the disaster creating heightened anxiety. These ‘triggers’ may be accompanied by fears that the stressful event will be repeated.
- **Strained interpersonal relationships.** Increased conflict, such as more frequent disagreements with family members and co-workers, can occur. You might also become withdrawn, isolated or disengaged from your usual social activities.
- **Stress-related physical symptoms.** Headaches, nausea and chest pain may occur and could require medical attention. Pre-existing medical conditions could be affected by disaster-related stress.


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**LEARNING ACTIVITY 3.8**

**Review questions**

1. (a) Define the meaning of acculturative stress with reference to relevant stressors.
   (b) Give two examples of variables that can influence the degree of acculturative stress experienced by an individual.

2. (a) Distinguish between a major stressor, stressors attributable to daily pressures (hassle) and life events.
   (b) Give two examples of commonly reported major stressors and explain why each one is considered to be a major stressor (rather than another type of stressor).

3. (a) What is a catastrophe?
   (b) How is this potential stressor best distinguished from other stressor types?
   (c) Distinguish between natural and human-made catastrophic events that become stressors, with reference to examples of each type.
   (d) List key risk factors that impact on the potential severity of this stressor.

---

**LEARNING ACTIVITY 3.9**

**Summarising different sources of stress**

Complete the following table to summarise the different types of stressors.

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Description</th>
<th>Example</th>
<th>Key point(s) distinguishing from other stressor types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily pressures (hassles)</td>
<td></td>
<td></td>
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<tr>
<td>Life events</td>
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<td>Acculturative stress</td>
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<td>Major Stressor</td>
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<tr>
<td>Catastrophe disrupting a whole community</td>
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**LEARNING ACTIVITY 3.10**

**Reflection**

Consider the stressors described in this section and comment on their relevance to your life experience. Include a reference to any significant stressor or stressor type which you believe may have been understated or overlooked.
STRESS AS A BIOLOGICAL PROCESS

Stress can affect different people in different ways, depending on the severity or intensity of stressor, the type of stress response, the duration of the response and the individual involved. For example, acute stressors typically appear suddenly, produce a high level of physiological arousal and have immediate short-lasting effects. In contrast, chronic stressors typically last a long time and produce a high level of arousal that also tends to persist over a long period of time.

Two models for describing and explaining physiological responses to a stressor are called the fight–flight–freeze response and the general adaptation syndrome. Both models describe patterns of involuntary biological processes (‘bodily changes’) that occur in response to a stressor. The changes occur in much the same way in all individuals. The general adaptation syndrome is longer lasting and includes fight–flight reactions within the first of its series of three stages. In addition, this model emphasises the ‘wear and tear’ on the body with prolonged stress.

**Fight–flight–freeze response**

Any kind of immediate threat to your wellbeing is usually a stress-producing experience that triggers a rapidly occurring sequence of bodily changes. Without our awareness or conscious control, our body instantly responds by automatically activating the fight–flight–freeze response. This was originally described by American doctor Walter Cannon (1932) as a response involving only ‘fight’ and ‘flight’ reactions, but it is now recognised that people (and animals) may also ‘freeze’ in response to a stressor. The changes associated with each reaction are believed to have evolved as part of a survival mechanism, enabling us to react effectively to events that threatened our wellbeing or even our lives.

The fight–flight–freeze response is an involuntary, physical response to a sudden and immediate threat (or stressor) in readiness to:

- **fight** — confronting and fighting off the threat
- **flight** — escaping by running away to safety
- **freeze** — keeping absolutely still and silent.

The physiological changes that occur during the fight–flight–freeze are activated in order to prepare the body for one or more of these reactions. In terms of observable behaviour, the reactions do not occur simultaneously so the response is often described as ‘fight or flight or freeze’. However, all three are considered to be adaptive responses that enable us to deal with a threat at hand and help minimise harm.

Which of the three reactions occurs as observable behaviour depends on the situation. Biological processes that underlie each reaction can take place before the brain’s visual information processing areas have had a chance to fully interpret what is happening. This is believed to explain why we are able to jump out of the path of an oncoming car we catch out of the ‘corner’ of an eye even before we think about we are doing.

*Figure 3.16* Fight–flight–freeze is an involuntary, physiological response to a stressor, particularly when feeling threatened. Is this lady experiencing fight, flight or freeze?

**Fight–flight reactions**

When our wellbeing is threatened, two immediate options are to either fight off the threat or escape from it. To prepare our body for either alternative, all energy is directed from non-essential body systems to those systems that will help us either ‘outrun’ or ‘oufight’ the threat.

Both the fight and flight reactions are initiated by the sympathetic nervous system and involve changes such as:

- increased heart rate and blood pressure
- redistribution of blood supply from the skin and intestines to the muscles
- increased breathing rate (to increase oxygen supply)
- increased glucose (sugar) secretion by the liver (for energy)
- dilation of the pupils (so the eyes can take in as much light as possible)
- suppression of functions that are not immediately essential in order to conserve energy (such as digestion and sexual drive) and which can be delayed without damage to the organism.
When a threat is perceived, a signal is sent to the hypothalamus (via the amygdala). This almond-sized gland, located just above the brainstem, links the nervous system to the endocrine (hormonal) system and plays a vital role in monitoring and adjusting bodily processes (homeostasis). It responds to the stressor by activating the sympathetic nervous system in less than 1/20th of a second — less than the amount of time between two beats of the heart.

The sympathetic nervous system then stimulates the adrenal medulla, which is the inner part of the adrenal gland (located just above each kidney). The adrenal glands secrete hormones called catecholamines into the bloodstream. Two of these hormones are adrenaline (also called epinephrine) and noradrenaline (also called norepinephrine). These 'stress hormones' circulate in the bloodstream, activating various organs including the heart, lungs, liver and kidneys, and resulting in the bodily changes that characterise the fight and flight reactions. Adrenaline and noradrenaline also occur as neurotransmitters and may be released by neurons to have excitatory effects. Collectively, the fight-flight reactions will enable you to fight harder, run faster, see better and breathe easier than you would if fight or flight did not occur.

A 'racing heart' during fight or flight is explained by the surge of stress hormones in the body. Once the stressor is removed, the parasympathetic nervous system becomes dominant and the high level of bodily arousal gradually subsides. Adrenaline and noradrenaline also fall back to pre-threat levels, thereby contributing to the reversal of all the physiological reactions; for example, heart and breathing rates slow, blood pressure falls and digestion is stimulated again.

These and other changes associated with fight and flight occur within seconds, thereby allowing us to react very quickly to the threat at hand. Once the threat has passed, the parasympathetic system calms and restores normal functioning. The sympathetic nervous system functions like the accelerator pedal in a car; it triggers fight or flight reactions, providing the body with a burst of energy so that it can respond to perceived dangers. The parasympathetic nervous system acts like the car's brake, slowing the body after the danger has passed.

Fight-flight reactions are initiated in the brain and have the overall effect of arousing and energising the body to deal with an immediate threat. The brain–body pathway that activates fight-flight is called the sympathetic adreno-medullary system (SAM).

**Freeze reactions**

Sometimes, we cannot run away or are unable to fight, or the threat is so overwhelming that there is little or no immediate or apparent chance of successfully fighting or escaping. This is when we may go into a freeze state, unable to move or act. Body movements and vocalisations stop, the racing heart slows very significantly, blood pressure drops very quickly and tense muscles collapse and become still. Often, before immobility sets in, there is a reflexive, ‘orienting response’ of the head or eyes towards the direction of the threat. This is accompanied by hypervigilance — being on guard, watchful, or extremely alert. This initial part of the freeze state has been described as a ‘stop, look and listen’ behavioural response that is most commonly associated with a stressor that causes fear. Before reacting with flight or fight, many mammals freeze for a few milliseconds. It has been suggested that this is done to assess the situation before making a next move. However, some psychologists believe that this is not a true freeze state because the mind can become numb during the freeze state (Bergland, 2014; Bracha, et al., 2004; Gray, 1988; Roelofs, Hagenaars & Stins, 2010; Scaer, 2001; Schmidt, et al., 2008).

The apparent frozen state of the body is called tonic immobility and is seen in the mouse that ‘plays dead’ when caught by a cat and the startled animal that ‘freezes’ when caught in a car’s headlights at night time. However, the immobility is considered to
have adaptive value, especially among animals when fearful and threatened. For example, prey that remain ‘frozen’ during a threat are more likely to avoid detection. The frozen state also conserves energy until a predator loses interest. When this occurs, the animal can use the excess energy for escape (‘flight’). In some cases, however, freezing when fearful is not adaptive. For example, it is not an adaptive response when fear causes a job candidate to freeze during an interview, or overwhelms a student’s mind during an important exam, or restricts the everyday life of the individual with a phobia who must continually engage in avoidance behaviour to avoid contact with a stimulus that triggers a panic attack or some other extreme reaction (Gray, 2007).

Nonetheless, when under attack by a person or animal, tonic immobility may also be useful when additional attacks are provoked by movement or when immobility may increase the chance of escaping, such as when a predator believes its captured prey to be dead and loosens its grip or releases it, providing the prey with an opportunity for escape (Gray, 1988).

Biological processes underlying the freeze state are not completely understood. It is believed that sympathetic nervous system activation always precedes the freeze state and becomes a part of this state. When the freeze reaction is initiated, the energy conserving ‘rest and relaxation’ actions of the parasympathetic nervous system dominate over the existing effects of sympathetic nervous system activation. This leaves the organism in a physiological state involving high arousal of both the sympathetic and parasympathetic systems. The resulting condition is characterised by both energy-conservation and a mobilised state ready for action (Levine, 1997; Scaer, 2014).

This has been likened to the organism having one foot on the accelerator (the sympathetic nervous system) and one foot on the brake (the parasympathetic nervous system) at the same time. Consequently, when an animal takes the opportunity for flight after having been in a frozen state, it can very quickly escape by switching to the highly energised state of full sympathetic system arousal (Plaford, 2013).

The nervous system responses for fight, flight and freeze are automatic actions. They are similar to reflexes in that they are instantaneous, but the mechanisms underlying these reactions are much more complex. For example, studies have found that, when in a freeze state, some people psychologically dissociate (‘detach’) themselves from terror-laden, distressing events in which they are caught. A person who is being viciously assaulted or trapped in a horrifying situation is then better able to block out what’s much too scary to take in. They actually don’t feel what is happening to them (Schmidt, et al., 2008; Selzer, 2015).

### Role of cortisol

If we need to deal with a stressor over time, additional physiological resources are required as the body cannot maintain the intensity of the fight and flight reactions for a prolonged period. One reason is that the effects of adrenaline and noradrenaline do not last long. In these circumstances, a brain–body pathway comprising the HPA axis is activated. This has a more direct link and therefore line of communication between the brain and the endocrine system. Sympathetic nervous system reactions for the fight–flight–freeze response are instantaneous. These autonomic reactions can be likened to the ‘first wave’ of response to a stressor. The HPA axis puts into motion a slower but longer-lasting chain of reactions that includes the release of cortisol. This activity can be likened to a ‘second wave’ of response to the initial stressor.

As the name suggests, the hypothalamic–pituitary–adrenal, or HPA axis, involves the hypothalamus, the pituitary gland and the adrenal cortex (the outer layer of the adrenal glands) in a chain of direct influences and feedback interactions. This time, the hypothalamus stimulates the nearby pituitary gland. In turn, the pituitary gland secretes hormones such as adrenocorticotropic hormone (ACTH) into
the bloodstream which carries it to the adrenal cortex. Among other things, ACTH stimulates the adrenal cortex (the outer surface of the adrenal glands) to secrete additional stress hormones called corticosteroids. Cortisol is the most abundant of these hormones, accounting for about 95% of glucocorticoid activity. The level of cortisol circulating in the bloodstream is commonly used as a measure of stress by researchers.

The main effect of cortisol is to energise the body by increasing energy supplies such as blood sugar and enhancing metabolism. For example, cortisol acts upon the liver to make it secrete glucose into the bloodstream for the muscles to use as an energy source. Cortisol also has an anti-inflammatory effect by blocking the activity of white blood cells that contribute to inflammation. However, it also retards tissue repair, which slows wound healing. Suppressing the activity of the immune system is part of the overall process of targeting essential bodily resources to ensure instantaneous fight, flight and freeze reactions.

Unlike the fight-flight-freeze response, the HPA axis takes significantly longer (seconds to minutes) to exert its influences. Its effects also persist for a much longer time (minutes to hours). However, its overall effect is like that of the fight or flight reactions.

Once the level of cortisol (and other corticosteroids) reaches a certain level, the hypothalamus is signalled to turn off the stress response. This is part of the normally occurring feedback loop that ‘turns on and off’ a healthy, appropriate physiological response to stress.

Although physiological responses to stressors are beneficial and may be adaptive in the short term, prolonged activation of our stress response systems can be harmful to physical and mental health. For example, with long-term stressors, the HPA axis continues to be active and cortisol remains in the bloodstream at a high level.

One effect of the excessive amount of cortisol over a prolonged time is impaired immune system functioning and thereby increased vulnerability to disease. Normally, when foreign substances such as viruses, bacteria, or allergens, enter the body, the immune system launches into action to destroy the invaders. Cortisol interferes with this process, leaving the body less able to deal with infection. Physical health problems associated with higher and more prolonged levels of cortisol in the bloodstream include colds, flu, hypertension (high blood pressure), blood sugar imbalance (hyperglycemia), atherosclerosis (hardening of the arteries), cardiovascular disease and diabetes (see box 3.11).

Sometimes, the feedback system that normally shuts off the stress response may become damaged so its vital function is disrupted. Impaired cognitive performance, learning problems, impaired memory formation and recall (by impacting on hippocampus functioning), and mental disorders such as depression, posttraumatic stress disorder and other anxiety disorders have also been linked to high levels of cortisol in the bloodstream for a prolonged period (Breelove, Rosenzweig & Watson, 2007; Cohen, et al., 1992; Huffman, 2012; McEwen, 2004; McEwan & Stellar, 1993).
If you use a suburban train to get to school every morning, you probably do not find it the most pleasurable experience of the day — delays and standing up face-to-face with someone else in a crowded carriage can make it a stressful experience, especially when on a long journey. People in such crowded environments often report physical and psychological symptoms of stress such as higher blood pressure, increased heart rate, ‘light-headedness’, ‘feeling like fainting’, nausea, difficulties concentrating, frustration, anxiety, fear and anger (Evans, 1979, 1980).

One American study investigated the relationship between train commuting and stress in 208 men and women who lived in the suburbs (New Jersey) and took the train to work in Manhattan, New York. The amount of cortisol in saliva produced by participants was used as a measure of stress. One set of results is shown in figure 3.21. At the end of the journey, the researchers gave participants a proof-reading exercise to complete for which they had to identify errors in a document. Those on short journeys persisted with the task but as the journey got longer, more and more participants set it aside. Participants who did not persist with the task also reported experiencing more stress. There were no significant sex differences in the results (Evans & Wener, 2006).

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**Learning Activity 3.11**

**Evaluation of research by Evans and Wener on commuting and cortisol**

Consider the research on train commuting and cortisol summarised in box 3.8 and answer the following questions.

1. **How was stress operationalised by the researchers?**
2. **Identify the independent and dependent variables for the cortisol measurement part of the study.**
3. **(a) Describe the pattern of results shown in figure 3.21. (b) Formulate a research hypothesis that would be supported by the results in figure 3.21.**
4. **Explain whether train travel to school or work would be classified as an internal or external stressor.**
5. **(a) Which stress symptom was measured by the proof-reading exercise? (b) Formulate a research hypothesis that would be supported by the results for this measure.**
6. **What are three questions you would ask the researchers to help you determine potential limitations or criticisms of the research design?**
7. **What are two conclusions that can be drawn from the results?**
8. **Are the results generalisable to: (a) the study’s population? (b) other populations? Explain your answers.**
BOX 3.9

**Body systems involved in physiological changes occurring with stress**

Many body systems may be involved in a complex interaction when we are exposed to a stressor. Some of the systems and ways they react to stressors include the following.

1 **Nervous system**
   The fight or flight reaction is automatically activated to energise the body to deal with the stressor. Adrenaline and noradrenaline are released by the adrenal glands after receiving a signal from the sympathetic nervous system. These increase the heart rate, blood pressure, breathing and glucose secretion from the liver. Other functions that are not immediately essential are suppressed. Once the threat passes, the parasympathetic system returns the body to normal functioning. In some cases, a freeze reaction occurs in response to a stressor. When this occurs, the parasympathetic system dominates the sympathetic system.

2 **Musculoskeletal system**
   Stress causes muscles, particularly in the neck and head, to contract and tighten and, over extended periods, can cause stress-induced headaches and migraines, and aches and pains in other muscles.

3 **Respiratory system**
   Increased breathing and blood pressure makes more oxygen available to the muscles to help meet immediate energy needs for fight or flight. However, ‘over-breathing’ or excessive breathing (e.g. hyperventilation) in response to stress can bring on dizziness or even panic attacks in some people.

4 **Cardiovascular system**
   A sudden surge of the stress hormones adrenaline and noradrenaline in response to an acute stressor results in the feeling of a ‘racing heart’, as the heart rate increases and the heart muscle contractions strengthen. Over a prolonged period, this can contribute to hypertension, stroke and coronary heart disease.

5 **Endocrine system**
   As well as secreting adrenaline and noradrenaline for fight or flight, the chain of reactions involving the HPA axis may also be initiated if the stressor persists, resulting in the release of cortisol to further energise the body (but cortisol also has an immune-suppression effect which weakens the body’s resistance to disease).

6 **Gastrointestinal system**
   Persistent stress affects the nerves of the digestive system and can upset digestion, causing people to feel a sense of ‘unease’ or ‘butterflies’ in their abdomen, or even nausea or pain. Stress can slow the digestive system, resulting in either bloating and constipation or diarrhoea, and can affect which nutrients your intestines absorb. Over time, chronic stress can lead to damage to the digestive system. Stress can also bring about changes to diet, both in terms of what people eat and how and when they eat it, or it can cause people to increase their use of alcohol or caffeine.

7 **Reproductive system**
   Excess production of cortisol can affect the reproductive system of men by suppressing sperm count and production of testosterone, and women by inhibiting the reproductive system and impacting on the menstrual cycle.

LEARNING ACTIVITY 3.12

Review questions

1. (a) What is the fight-flight-freeze response?
   (b) What type of stimulus and/or stressor other than a threat can initiate the response?
   (c) Which division of the nervous system is dominant in each of the three reactions?
   (d) Explain whether fight-flight-freeze is a conscious or unconscious response.
   (e) List the physiological (biological) changes commonly occurring with fight-flight and freeze.
   (f) Which stress hormones are released for fight-flight-freeze?
   (g) Fight-flight-freeze is sometimes called an ‘arousal’ response. Suggest an explanation for why this descriptor is used, ensuring you refer to the relevance of arousal if an organism adopts a freeze state.
   (h) Does fight-flight occur before or after freeze? Explain your answer.
   (i) Why is fight-flight-freeze considered to be ‘adaptive’?
   (j) Complete the following table with reference to examples not used in the text.

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Example of when adaptive</th>
<th>Example of when not adaptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>fight-flight</td>
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<tr>
<td>freeze</td>
<td></td>
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</tbody>
</table>

2. (a) What is cortisol?
   (b) When is it secreted in response to a stressor?
   (c) What organ or gland initiates its release?
   (d) (i) From which gland is cortisol secreted?
         (ii) Where is this gland located?
   (e) Under what circumstances is cortisol potentially harmful?
   (f) List the beneficial and potentially harmful effects of cortisol.
   (g) The following are all involved in a sequence of activity resulting in cortisol secretion. Construct a simple flow chart that shows them in the correct order.

| amygdala, adrenal cortex, ACTH, cortisol, hypothalamus, pituitary gland |

3. As you are walking home alone, late at night, you hear a crackling sound of someone or something stepping on dry leaves nearby. Your heart starts thumping as you imagine who or what is in the darkness.

Outline and explain other physiological changes likely to occur:

(a) during the first 30 seconds
(b) after about 20 minutes.

LEARNING ACTIVITY 3.13

Reflection

Describe a fight-flight-freeze reaction you have experienced and the physiological changes of which you were aware and any you were unlikely to be aware of.

Selye’s general adaptation syndrome

While Cannon was investigating fight-flight reactions in the 1930s, Hans Selye was conducting research on both immediate and long-term effects of stress. Most of Selye’s research was done with rats that were exposed to a variety of stressors such as painful tail-pulling, prolonged exposure to heat or cold, mild electric shocks, bacterial infections, strenuous exercise and forced restraint.

Selye observed that the physiological arousal pattern in response to each of these different kinds of stressors was generally the same — adrenal glands were enlarged, stomach ulcers developed, weight loss occurred and there was a shrinking of vital glands of the immune system (such as the lymph glands).

On the basis of these observations, Selye concluded that stress is a condition that is non-specific, and which can be brought on by either internal or external stressors. In addition, stress is the body’s physiological response to both physical and psychological demands and that it ‘represents the body’s generalised effort to adapt itself to new conditions’ (Selye, 1936).

Selye also drew the same conclusions when he studied responses by people to stressors. He observed a number of hospital patients who had experienced stressors such as the death of someone close to them, retrenchment from a job and arrest for stealing large sums of money. Although the stressors were different, the patients developed similar symptoms as a result of the stressors. For instance, they all had poor appetites, muscular deterioration and a general lack of interest in the world.

According to Selye, any emergency, illness, injury, or an imposing demand at school or work, initiates sympathetic nervous system responses such as increases in heart and breathing rates, slowing of digestive functioning, and so on. These are non-specific reactions to stress that occur regardless of the type of...
stressor. In addition to non-specific reactions, a number of specific reactions that are appropriate to particular stressors can occur. These specific reactions may include running away from a vicious dog, fighting off an attacker, activation of the immune system to destroy bacteria and viruses, and becoming tense or frustrated at someone who is annoying. Specific and non-specific responses to stressors are natural reactions to the challenges of varying complexity that we encounter in everyday life.

On the basis of his observations of animals, and to a lesser extent people, Selye developed the general adaptation syndrome. The general adaptation syndrome (GAS) is a three-stage physiological response to stress that occurs regardless of the stressor that is encountered. This means that the GAS is non-specific and will occur whatever the source of the stressor. As shown in figure 3.23, the GAS consists of three stages: an alarm reaction stage (with shock and countershock), a stage of resistance and a stage of exhaustion.

**Stage 1: Alarm reaction**

The first stage of the GAS involves an initial response called the alarm reaction which occurs when the person (or animal) first becomes aware of the stressor.

At first, the body goes into a temporary state of shock, and its ability to deal with the stressor falls below its normal level. Physiologically, the body reacts as if it were injured; for example, blood pressure and body temperature drop, and a temporary loss of muscle tone is experienced. Then the body rebounds from this level with a reaction that Selye called countershock.

During countershock, the sympathetic nervous system is activated and the body’s resistance to the stressor increases. The organism’s response is a fight-flight response. It becomes highly aroused and alert as it prepares to deal with the stressor. Adrenaline is released into the bloodstream and the organism’s heart and respiratory system respond by accelerating. This supplies the muscles with more energy (glucose and oxygen), allowing the organism to ‘fight or flee’, as needed.

This initial stage of the GAS is a general defensive reaction to the stressor, and results in a state of tension and alertness, and a readiness to respond to the stressor.

**Stage 2: Resistance**

According to Selye, if the source of the stressor is not dealt with immediately, and the state of stress continues, energy is still required and the body will continue responding in order to cope with and adapt to the stressor.

During the resistance stage, the body’s resistance to the particular stressor rises above normal. The intense arousal of the alarm reaction stage diminishes, but physiological arousal remains at a level above normal. Since the body is being taxed to generate resistance, all unnecessary physiological processes are shut down. For example, digestion, growth and sex drive stall, menstruation stops, and the production of testosterone and sperm decrease.

However, corticosteroids such as cortisol which support resistance are released into the bloodstream to further energise the body and help repair any damage that may have occurred. However, because cortisol weakens immune system activity, its continuing presence at an abnormally high level interferes with the body’s ability to fight disease and to protect itself against further damage. This means that even though the ability to deal with the effects of the initial stressor increases during this stage, resistance to other stressors, such as illness or disease, may decline. For example, during an exam week, a VCE student may be able to cope well enough to study for all their exams despite a decrease in sleep, exercise, recreation and healthy food (ie. their body responds to the initial stressor). However, soon after the exams, the student may come down with an illness such as the flu. While the body’s focus has been on dealing with the original stressor, it has failed to respond effectively to the flu virus, a new stressor that has entered the body.

Generally, if the effort to deal with the initial stressor during the resistance stage is successful, the organism will have adapted to the stressor and the body eventually returns to its normal ‘balanced’ (homeostatic) state of functioning.
**Stage 3: Exhaustion**

According to Selye, if the stressor is not dealt with successfully during the resistance stage, and stress continues, the organism enters an exhaustion stage.

During the **exhaustion stage**, some of the alarm reaction changes may reappear, but the body cannot sustain its resistance and the effects of the stressor can no longer be dealt with. Because the organism has been trying to deal with the stressor for a prolonged time, its resources have been depleted, its resistance to disease is very weak, and it becomes more vulnerable to physical and mental disorders.

The exhaustion stage is characterised by extreme fatigue, high levels of anxiety and symptoms of depression, nightmares and impaired sexual performance. Physical disorders such as hypertension, gastrointestinal problems and heart disease may also occur. In extreme cases, if the stress continues further, the organism may even die.

More commonly, the exhaustion stage brings about signs of physical wear and tear, especially in organs that have been consistently trying to deal with the stressor throughout the resistance stage. These are primarily attributable to the immune-suppression and other effects of higher and more prolonged levels of cortisol in the bloodstream.

**Strengths and limitations of Selye’s GAS**

Selye's three-stage GAS model of physiological responses to stress extended Walter Cannon's findings on the fight-flight response and further developed awareness and understanding of the links between stress and disease. He was among the first researchers to suggest that stress could weaken the body's ability to resist infection and increase the likelihood of developing a physical disorder. This idea is now widely accepted within psychology (and medicine). For instance, there is extensive research evidence that stress is associated with the initiation and progression of a wide variety of diseases, from cardiac, kidney and gastrointestinal diseases to AIDS and cancer. However, in the 1930s, the proposal that stress could actually cause disease, or at least weaken the body’s resistance to disease, was a radical idea. Back then, the dominant view was that most diseases could only be caused by exposure to germs, viruses and other sources of infection.
Selye’s GAS model also identifies biological processes associated with the body’s stress response. For instance, many of his findings on the role in the GAS of the endocrine system and its various hormones have been confirmed by contemporary researchers and continue to be influential. This also applies to Selye’s proposals that the GAS will occur in response to any type of stressor and that our bodies have only a limited amount of resources in coping with prolonged stress. These ideas are now included in most contemporary theories on stress and stress responses.

Selye’s GAS has also been influential through its description and explanation of the potentially detrimental effects of the three-stage adaptation process following exposure to a persistent stressor. The idea that our bodies can eventually run out of resources and become increasingly vulnerable to disease as the stress persists had not been fully understood by previous researchers.

There are, however, a number of limitations of Selye’s GAS. The GAS is a ‘one size fits all’ model. It assumes that everyone has the same general, predictable and automatic physiological responses to any kind of stressor, not unlike a sensor light that turns on outside regardless of the type of motion that is detected. Consequently, the GAS does not fully take account of or explain individual differences in physiological responses to a stressor.

The GAS also tends to overlook the roles of bodily systems other than the endocrine system in the stress response (see box 3.9) and ignores our psychological response to different types of stressors. It does not take into account cognitive aspects of the stress response, specifically the role of the brain in interpreting a situation or event as stressful. For example, two people may appraise, or ‘weigh up’, the same situation and judge it differently as either stressful or not stressful. This means that what might be considered a stressful situation and cause a stress response in one person may not in another. Furthermore, if both individuals appraise the situation as stressful, they may experience qualitatively different stress responses.

Similarly, not all people experience the same physiological reactions to chronic stress. For example, some experience hypertension, gastrointestinal problems, skin rashes or heart disease, whereas others may develop physical aches or pains, gain or lose weight, or become generally ‘run down’ without a specific disorder. This suggests that, despite the same bodily arousal systems and processes being involved in the GAS in all people, the precise way that prolonged activation can lead to disease could involve other biological and/or psychological processes.

Selye’s description of the GAS as a non-specific stress response may also be limited. For instance, there is research evidence that different types of stressors can trigger their own distinctive physiological reactions (Cohen, et al., 1986).

Finally, Selye’s GAS has been criticised for being primarily based on the results of research with animals and may therefore be of limited relevance to the human stress response. His reliance on animal research studies may explain why the GAS overemphasises biological factors and does not fully take into account individual differences and psychological factors in the stress response, particularly the role of cognitive processes.

**Figure 3.26** Hypertension is one of many physiological reactions associated with chronic stress, but not all people who experience chronic stress will develop hypertension.
**BOX 3.10**

**A study on stress and susceptibility to the common cold**

Using nasal drops, 394 participants were then exposed to a low infectious dose of one of five cold viruses. The other 26 participants were given saline (a harmless solution of water and salt) instead of a cold virus. For two days before and seven days after this procedure, volunteers were quarantined in large apartments (alone or with two others). Volunteers were reimbursed for their expenses and received free meals and accommodation.

All participants were examined daily for a week to see whether they had developed a cold. Not all participants who were given the nasal drops containing a cold virus were actually infected. Stress seemed to play a factor in the outcome.

Figure 3.28 shows results averaged out across the three stress measures. Participants who reported a higher level of stress before being exposed to the cold virus were more likely to develop a cold than those who reported being less stressed.

Symptoms were not caused by the virus. They were instead a ‘side effect’ of a weakened immune system. While the results of this study indicate a link between stress and immune-system failure, it should be noted that other factors also contribute to a breakdown in the immune system; for example, age, genetic predisposition and nutrition. When these factors occur simultaneously or combine with stress, the effects on the immune system are heightened.

**FIGURE 3.27**

One of Selye’s key propositions was that prolonged stress interferes with the functioning of the immune system, leaving the body less able to deal with infection. This has since been demonstrated by numerous research studies, many of which attribute it to the diversion of resources away from the immune system to more urgent physiological needs and the elevated level of cortisol.

One of the best-known studies on the effects of stress on the immune system was conducted by American psychologist Sheldon Cohen and his colleagues (1993). They recruited 420 volunteers (154 males and 266 females), ranging in age from 18–54 years who were willing to be exposed to a cold virus. All reported no chronic or acute illness or need for regular medication on their applications and were judged in good health following a medical examination (that included blood tests) on arrival at the laboratory. Pregnant women were excluded.

All participants were also required to complete three stress measures, including a major life events scale and the *Perceived Stress Scale* in Box 3.2. These measures provided data on how overwhelmed, preoccupied, nervous, unable to cope or out of control and so on participants had felt in the past month.

**FIGURE 3.28**

**BOX 3.11**

**Some disorders and diseases associated with long-term (chronic) stress**

<table>
<thead>
<tr>
<th>Disorder/disease</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension (high blood pressure)</td>
<td>Blood pressure measures how strongly blood presses against the walls of the arteries (large blood vessels) as it is pumped around the body by the heart. If this pressure is too high it puts a strain on the arteries and the heart, which increases the likelihood of heart attack, stroke or kidney disease.</td>
</tr>
<tr>
<td>Immunodeficiency disorders</td>
<td>Immunodeficiency disorders occur when the body’s immune response is reduced or absent. The immune system helps protect the body from harmful substances such as bacteria, viruses, toxins and cancer cells. If the body is unable to protect itself against harmful substances it will experience persistent, recurrent infections and/or experience a delay or incomplete recovery from illness.</td>
</tr>
</tbody>
</table>
### Disorder/disease

<table>
<thead>
<tr>
<th>Disorder/disease</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atherosclerosis (‘hardening of the arteries’)</td>
<td>Atherosclerosis occurs when fat, cholesterol and other substances build up in the walls of arteries and form hard structures called ‘plaques’. These changes make it harder for blood to flow through the arteries. Restricted blood flow can damage organs and stop them functioning properly. If a plaque ruptures, it can lead to a blood clot that blocks the blood supply to the heart, triggering a heart attack, or the brain, triggering a stroke (a serious medical condition that occurs when the blood supply to the brain is disturbed or interrupted).</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>Cardiovascular disease is a category of diseases that involves the heart or blood vessels (arteries and veins); for example, coronary heart disease, when the main arteries that supply your heart (the coronary arteries) become clogged with plaques. The causes of cardiovascular disease are diverse but atherosclerosis and/or hypertension are the most common.</td>
</tr>
<tr>
<td>Cerebrovascular disease (CBVD)</td>
<td>Cerebrovascular diseases are conditions that develop as a result of problems with the blood vessels inside the brain; for example, a stroke, or transient ischaemic attack (a temporary fall in the blood supply to the brain, resulting in a lack of oxygen to the brain).</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Diabetes is a long-term condition involving too much glucose in the blood. This is caused by the pancreas not producing any or enough insulin to help glucose enter the body’s cells (or the insulin that is produced does not work properly).</td>
</tr>
</tbody>
</table>

### LEARNING ACTIVITY 3.14

**Review questions**

1. What is general adaptation syndrome (GAS)?
2. Why did Selye use the term adaptation when describing his syndrome?
3. Make a copy of the GAS graph in figure 3.24 and use it to summarise each stage of the GAS.
4. Explain the meaning of the phrase ‘the GAS is non-specific’.
5. (a) When Daniel hears his teacher tell the class to clear their tables so they can complete ‘the SAC test’, he suddenly realises he forgot about it and his heart begins pounding rapidly. Which stage of the GAS is Daniel most likely experiencing?
   (b) One week remained before Chloe’s exams. She stayed up late every night studying, and although she was feeling tired, she seemed to be managing her workload. Two nights before her first exam, Chloe witnessed her dog being hit by a car, which upset her very much. On the morning of her exam, she woke up with a headache, a sore throat, aches and pains in her joints and she kept sneezing.
   (i) Name and describe the GAS stage Chloe is most likely in, with reference to Chloe’s situation and experiences.
   (ii) According to the GAS, under what circumstances would Chloe be vulnerable to a physical disease?

7. (a) List the strengths and limitations of the GAS.
   (b) Include two strengths and limitations in your GAS summary prepared for question 3.

### LEARNING ACTIVITY 3.15

**Evaluation of research on stress and the common cold**

Consider the research on stress and susceptibility to the common cold summarised in box 3.10 and answer the following questions.

1. Suggest an aim for the research.
2. Name the type of experimental research design.
3. Identify the operationalised independent and dependent variables.
4. (a) How many participants were in the sample?
   (b) Why were only healthy participants selected?
5. (a) How many participants were in an experimental group?
   (b) How many experimental groups were used?
6. (a) How many participants were given a placebo?
   (b) What was the purpose of the placebo?
   (c) Suggest a suitable title for figure 3.28.
   (d) Draw a conclusion from the results in figure 3.28.
7. Formulate a research hypothesis that would be supported by the results in figure 3.28.
8. Why were participants quarantined after exposure to the treatments?
9. Explain whether the results can be attributed to impaired immune system functioning.
10. To what extent can the results be generalised?
11. (a) What ethical standard led the researchers to exclude pregnant women from the sample?
    (b) (i) What other ethical standard is of particular relevance to the research?
        (ii) How would this be addressed?
LEARNING ACTIVITY 3.16

Visual presentation comparing biological models of stress

Use a Venn diagram such as the one shown in figure 3.29 to summarise the key similarities, differences and common features of the fight-flight-freeze response and the GAS.

**FIGURE 3.29**

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**STRESS AS A PSYCHOLOGICAL PROCESS**

Researchers have identified many and varied psychological factors that cause or influence how we respond to stressors. These include our

- prior experience with stressors and stress responses
- attitudes
- motivation
- level of self-esteem
- general outlook on life (e.g. optimism versus pessimism)
- personality characteristics
- coping skills
- perception of how much control we have over a stressful event or situation.

Such factors are not independent of each other and combine in different ways within each individual to have more or less impact on their response to a stressor.

American psychologists Richard Lazarus and Susan Folkman (1984) developed a model of stress to describe and explain individual differences in how people respond to a stressor from a psychological perspective. Their model focuses on two key psychological factors that determine the extent to which an event (or situation) is experienced as stressful:

- the meaning of the event to the individual
- the individual's judgment of their ability to cope with it.

---

**Lazarus and Folkman's Transactional Model of Stress and Coping**

The Lazarus and Folkman Transactional Model of Stress and Coping proposes that stress involves an encounter ('transaction') between an individual and their external environment, and that a stress response depends upon the individual's interpretation ('appraisal') of the stressor and their ability to cope with it.

According to Lazarus and Folkman (1984), stress is not a result of the individual alone or the environment alone. The environment can influence the individual, but the individual can also influence the environment. Furthermore, an individual's appraisal of the situation and their resources for dealing with that situation determine whether or not they experience stress and the nature of their stress response. When there is an imbalance between a person's appraisal of the demands of the situation and their estimation of their ability to meet those demands, then they will experience stress.

For example, imagine two drivers stuck in a traffic jam on CityLink caused by a car accident blocking one of the exits. Both are on their way to a business meeting at work. One driver believes that the lack of movement is untimely, but that 'it's no big deal' and there's no point in getting upset because it will not make the cars ahead start moving again. So she decides to phone her assistant and explain that she will be late. She then uses the unexpected 'spare...
time’ to catch up with her sister over the phone. The other driver reacts very differently. She thumps the steering wheel and swears out loud. She then thinks about ringing her assistant but her phone battery is dead. She thumps the steering wheel again, thinking that the traffic jam is awful and will ruin her whole day. As the traffic jam continues, she sits and fumes, tapping on the steering wheel with her finger. She checks her watch regularly and becomes increasingly agitated with the passing of each minute. Her heart is pounding and, despite it being a cold day, she has to wind down the window because she feels very hot. In this example, a specific situation is a stressor for one individual and not the other. The first driver is barely affected by the situation, whereas the second driver experiences significant distress, worsened by the fact that she feels trapped and cannot do anything to improve her circumstances.

According to the transactional model, both drivers are involved in an encounter with the environment that has produced a potential stressor — they are stuck in a traffic jam that will make them late for a business meeting. However, each individual responds differently to the same event because of how they appraise it. The first driver appraised the event as ‘no big deal’, managed the situation as best she could, then viewed it as an opportunity to speak with her sister. The second driver was overwhelmed and appraised the event as ‘awful’ and as exceeding her ability and available resources to do anything about.

According to Lazarus and Folkman, stress is largely ‘in the eye of the beholder’ and therefore a product of each individual’s appraisal of a stressor. Furthermore, the event with which the individual has a transaction will lead to stress only if they appraise that event as unpleasant, uncomfortable or perhaps as ‘the worst thing that could happen to me’, as did the second driver.

Appraisal is not necessarily a conscious process. However, it is always subjective and therefore a highly personal process. It also depends on our estimation of our ability to cope with it. It is for these reasons that two individuals may assess the same potential or actual stressor differently.

**Primary and secondary appraisals**

The transactional model of stress and coping distinguishes between two different types of appraisal of an event. These are called primary appraisal and secondary appraisal, and they occur in a two-step sequence in response to a potential stressor.

In a primary appraisal, we evaluate, or ‘judge’, the significance of the event. For example, we may ask questions such as ‘Is this something I have to deal with?’, ‘Am I in trouble?’, ‘Is there any benefit?’ and ‘Does this matter to me?’ The outcome of a primary appraisal is a decision about whether the event is irrelevant, benign–positive or stressful. If we decide that the situation is stressful, then we engage in additional appraisals that involve deciding if a situation is harmful, threatening or challenging. More specifically, those appraisals involve:

- **harm/loss** — an assessment of how much damage has already occurred (e.g. ‘I have lost my job’)
- **threat** — an assessment of harm/loss that may not have yet occurred but could occur in the future (e.g. ‘I mightn’t be able to afford the rent’), and
- **challenge** — an assessment of the potential for personal gain or growth from the situation (e.g. ‘I’ll get any other job I can and will learn to budget and save money’).

In a secondary appraisal, we evaluate our coping options and resources and our options for dealing with the event. The coping options and resources available may be internal (e.g. strength and determination) or external (e.g. money and support from family or friends).
If the coping demands of the situation are perceived as being far greater than the resources that are available, then we are likely to experience a stress response. The discrepancy that is perceived may also trigger a search for additional or new resources that can be used to cope with the stress.

**Strengths and limitations of the Lazarus and Folkman model**

Lazarus and Folkman's transactional model of stress and coping has a number of strengths. Unlike the fight-flight-freeze response and the GAS, which focus on involuntary biological processes occurring in response to stressors and mostly overlook cognitive processes and individual differences when reacting to a stressor, the transactional model focuses on psychological influences on how we react to a stressor and over which we do have control. It also emphasises the personal nature and individuality of the human stress response.

Development of the model with reference to people and the human experience may also be considered an advantage, as compared with the use of animals in developing the GAS.

The transactional model views stress as involving an interaction with the environment in which the individual has an active rather than passive role. The role involves personal appraisals of a situation or an event that may be a stressor, thereby emphasising each individual's role in interpreting what that situation means to them from their perspective rather than from someone else's. This allows for much more variability in the human stress response and helps explain why different individuals respond in different ways to the same types of stressors.

**FIGURE 3.33** Lazarus and Folkman’s transactional model of stress and coping can explain why some learner drivers find driving stressful, whereas experienced drivers do not. The learner has limited ability to meet the demands of handling a car in traffic, which means that the demands of the environment are greater than their perceived ability to cope. For experienced drivers, the perceived demands of the environment are fewer than their perceived ability to cope.
The major limitation of the transactional model of stress and coping is that it is difficult to test through experimental research. This is mainly because of the subjective nature, variability and complexity of individual responses to stressful experiences. Furthermore, primary and secondary appraisals can interact with one another and are often undertaken simultaneously. This also makes their study problematic as they are difficult to isolate for study as separate variables (Lazarus & Folkman, 1984).

Some psychologists also doubt that we actually need to appraise something as causing stress in order to have a stress response. For example, we can experience a stress response without ever having thought about a specific event or situation, let alone made the assessments and judgments described by the transactional model. Individuals may not always be conscious of or be able to specifically name or identify all the factors that are causing them to experience a stress response. For example, someone might feel a little ‘on edge’ and experience stomach aches and other reactions associated with stress a few weeks before an important exam, which is well before they have begun to consciously think about preparing for it. This also suggests another limitation of the transactional model, especially when compared with the GAS — that it overlooks physiological responses to stressors.

**LEARNING ACTIVITY 3.17**

**Review questions**

1. Explain the meaning of ‘transaction’ in relation to the Lazarus and Folkman model, ensuring you refer to the individual and their environment.
2. Briefly explain why the model is sometimes described as a two-step model.
3. (a) What is the role of appraisal in the model? (b) Name and describe the two major types of appraisal.
4. Name and describe the three types of appraisals that follow an appraisal of a stimulus as stressful.
5. Xanthe and Olivia must each present a 10-minute oral report in class for one of their SACs. The girls are best friends, enrolled in the same VCE subjects, and also work casually three evenings a week, on the same shifts at the same fast food outlet. They have five days in which to prepare their reports. They have different topics of about the same difficulty. Xanthe is distressed about having to prepare and present her report. She gets very anxious whenever she thinks about it. She is concerned about the amount of preparation work required within the time available. She also doesn’t like making oral presentations because she thinks she looks and sounds ‘weird’ when doing so. Olivia is not hassled or distressed. Instead, she is looking forward to getting the presentation done and out of the way. Explain Xanthe’s and Olivia’s different reactions to the SAC task with reference to the Lazarus and Folkman transactional model. You may use a diagram to support your explanation.
6. List the strengths and limitations of the Lazarus and Folkman transactional model.

**LEARNING ACTIVITY 3.18**

**Reflection**

Comment on the appropriateness of describing stress as a ‘psychobiological response’. Consider fight-flight-freeze, the GAS, and the Lazarus and Folkman transactional model.

**LEARNING ACTIVITY 3.19**

**Visual presentation on the transactional model of stress and coping**

Construct a flowchart that summarises the two-step primary and secondary appraisal process that is a psychological determinant of a stress response. The chart should demonstrate a response to a stressor of your choice, and include brief definitions and relevant examples of primary and secondary appraisals of a stressor, different types of coping strategies for the stressor, and key strengths and limitations of the model.

**LEARNING ACTIVITY 3.20**

**Visual presentation comparing biological and psychological models of stress**

Use a Venn diagram such as the one below to summarise the key similarities, differences and common features of the GAS and the Lazarus and Folkman models.

**LEARNING ACTIVITY 3.21**

**Media analysis/response**

Consider the six common myths about stress in the online Psychology Today blog at [https://www.psychologytoday.com/blog/high-octane-women/201209/six-myths-about-stress](https://www.psychologytoday.com/blog/high-octane-women/201209/six-myths-about-stress)

1. List the six myths and briefly summarise each one.
2. Reflect on what you have learnt about stress in this chapter and write an additional myth (and relevant commentary) which you believe should not have been overlooked.
STRATEGIES FOR COPING WITH STRESS

Everyone experiences stress that arises from daily hassles and other life events. These events often occur when we least expect them and can create stressful consequences that may persist for longer than we prefer. This is particularly the case with stressors arising from events over which we have little or no control and are not easily resolved. How we choose to cope with a stressor can have a significant impact on its immediate and long-term effects on our physical and mental health.

Coping describes all the different things we do to manage and reduce the stress experienced as a result of problems, issues or difficult situations that arise in life. According to Lazarus and Folkman (1984), coping is a process involving ‘cognitive and behavioural efforts to manage specific internal and/or external stressors that are appraised as taxing or exceeding the resources of the person’ in a stressful situation. This means that coping is an attempt to manage the demands of a stressor in some effective way.

Sometimes our efforts to manage a stressor primarily involve emotional activity (such as venting feelings), so some psychologists have broadened the definition to ensure it better reflects this aspect.

In our attempts to cope with a stressor, we use one or more coping strategies. A coping strategy is a specific method, behavioural or psychological, that people use to manage or reduce the stress produced by a stressor. There are many different types of coping strategies but there isn’t a single ‘right’ way to cope. Nor is there any particular strategy that suits everyone. Some strategies will ‘work better’ and therefore be more effective than others, depending on a range of factors, such as the nature of the stressor (e.g. acute or chronic, hassle or catastrophe), the individual (e.g. their appraisals, coping flexibility, personality, access to support) and the stressful event itself.

Although there is a wide variety of coping strategies that may be used, some strategies are less beneficial than others. Those with the least benefit reduce stress temporarily and can have an adverse impact on physical or mental health. For example, drugs and alcohol can provide immediate, temporary relief from stress symptoms. However, they also interfere with a good outcome and have potentially harmful consequences. Similarly, ineffective coping strategies for stress due to mounting bills include ignoring them, denying responsibility, gambling, yelling, swearing and becoming physically agitated. A more effective strategy would involve a plan of action that will eventually diminish the financial problems and alleviate the stress. A strategy is not necessarily ineffective if it provides only temporary relief from stress because the short-term relief may be a benefit in itself.

The various coping strategies can be organised into different categories, each with a distinctive approach. Two commonly used categories are called approach and avoidance coping. Generally, approach strategies attempt to deal directly with a stressor and avoidance strategies deal with it indirectly. In this section, we examine the use of specific approach and avoidance strategies and also evaluate exercise as a coping strategy. We start by considering the importance of the stressful situation requiring coping.

**FIGURE 3.34** Many people report that prayer is an effective coping strategy in some stressful situations.
Context-specific effectiveness

People with good coping skills tend to be more stress-free and overall happier and more positive than those who haven’t yet figured out what coping strategies work best for them. They understand that a coping strategy that works well in one situation does not necessarily work well or may even be counterproductive in another. They are also flexible with their coping and adjust their style or strategy to help ensure it is suitable for dealing with the stressful situation in which they find themselves.

Researchers have found that there are situational determinants of coping effectiveness. This means that a specific coping strategy can be more or less effective in different situations. In order for a strategy to be effective, it must take account of all the characteristics of the stressful situation. These may relate to the physical environment, the stressor and the individual involved. Consequently, it is important that there be an appropriate ‘match’ between the coping strategy to be adopted, the situationally specific demands of the stressor and relevant personal characteristics of the individual involved (Folkman & Lazarus, 1985; Roth & Cohen, 1986).

A coping strategy is considered to have context-specific effectiveness when there is a match or ‘good fit’ between the coping strategy that is used and the stressful situation. For example, when experiencing stress about upcoming exams, a coping strategy that focuses on taking positive action, such as planning, time management and study would be suitable for many students in that situation, whereas coping strategies such as ‘mental distancing’ (not thinking about the exams at all) or ‘wishful thinking’ (hoping for good grades) while engaging in minimal study are likely to be detrimental. However, ‘mental distancing’ or ‘wishful thinking’ would be more effective if needing to minimise stress about the exam results while waiting for their release. In this context, when little or nothing can be done but wait until the results are available, these coping strategies would be more effective in reducing stress (Folkman & Lazarus, 1985; Lazarus, 1993).

A stressful context also includes the person confronted by the stressor. Consequently, the coping strategy most likely to be effective will also take account of the personal characteristics of the individual involved; for example, their personality, knowledge, skills, interests, preferences, access to social support from family, friends or community, and any other attributes that are especially relevant to the stressful situation. For example, exercise is commonly recommended as an effective coping strategy when experiencing stress as it has psychological as well as physical benefits. However, it may not be a suitable option for someone who hates all types of exercise. Similarly, if someone has a medical condition that could be compromised by exercise, then this coping strategy is more likely to be detrimental than effective. In either case, a suitable coping strategy could involve a relaxation technique such as slow breathing or meditation, assuming the individual is willing to learn and use the technique.

Coping flexibility

Most people have a number of coping strategies that they may draw upon for use in times of stress. However, mere access to coping strategies does not necessarily produce the desired results. Given the wide variety of stressors encountered in life, we also need to select and use a coping strategy that is appropriate for a specific stressful situation. We must also be willing and able to recognise when a coping strategy is not working and modify a strategy or implement a new one if necessary. This type of flexibility with coping strategies is associated with more effective coping, greater wellbeing and positive outcomes. In contrast, persistent use of the same type of coping strategy for different stressful situations can hinder positive outcomes (Cheng, Lau & Chan, 2014; Lazarus, 1993).

Psychologists use the term coping flexibility to refer to the ability to effectively modify or adjust one’s coping strategies according to the demands of different stressful situations. It includes the abilities to:

- recognise whether the use of a flexible coping approach is appropriate for a specific situation,
- select a coping strategy that suits the situational circumstances,
recognise when the coping strategy being used is ineffective,
• discontinue an ineffective coping strategy, and
• produce and implement an alternative coping strategy when required.

Coping flexibility is considered to be an adaptive personality attribute that enables us to adjust our thoughts, feelings or behaviour according to changing situational circumstances. Adaptability in our approach to coping helps ensure we are more able to meet the specific challenges of a variety of stressful situations, most of which occur within the context of an ever-changing environment (Cheng, 2001; Kato, 2015).

There are individual differences in coping flexibility. Some individuals have a higher level of coping flexibility than others.

Individuals with high coping flexibility readily adjust their coping strategies if a particular strategy they are using is proving to be ineffective. They also tend to use different types of coping strategies across a variety of stressful situations, and there tends to be a good fit between the coping strategies they deploy and the characteristics of the specific situational demands.

In contrast, individuals with low coping flexibility consistently use the same type of coping strategies across different stressful situations, and persist in their use of the coping strategies they deploy, even in the face of ineffectiveness. Essentially, these individuals are not very adaptable and always approach coping in much the same way, almost habitually (Cheng & Cheung, 2005; Kato, 2012).

Consider the example of coping flexibility by Ally who has just separated from her husband and is consequently very distressed. Ally typically finds going to church relaxing, uplifting and inspiring, so she selects this as her coping strategy and increases her church attendance to three times per week. However, after attending church on five occasions, Ally is still very distressed. She evaluates her situation and realises that attending church has not reduced her stress enough so she needs to adapt and consider alternative strategies. Ally therefore arranges to cut back on church attendance and use the time to meet with compassionate friends. She will go to a movie with one friend and to a yoga class with another. Ally has been self-monitoring her coping progress and after going out with her friends realises that these strategies, in conjunction with church attendance, are proving to be effective, so she starts to think more positively about herself and her situation.

As can be reasonably expected, individuals with high coping flexibility tend to cope more effectively with stress and are more likely to achieve positive outcomes from the coping strategies they deploy than are individuals with low coping flexibility. For example, coping flexibility with a good strategy–situation fit is related to adaptive outcomes, such as mental wellbeing, physical wellbeing, social adjustment and reduced stress symptoms (Cheng & Cheung, 2005).

One team of researchers examined university students’ reactions to traumatic events, such as accidents, serious health issues and the death of a loved one. Students with high coping flexibility experienced significantly less stress as a result of these traumas than did students who tended to rely on a few familiar coping strategies (Galatzer-Levy, Burton & Bananno, 2012). In another study, individuals with high coping flexibility reported lower levels of anger and anxiety, lower ratings on the severity of gastrointestinal symptoms and lower heart rate reactivity in response to hypothetical stressors (Cheng & Cheung, 2005).

The concept of coping flexibility originates in the Lazarus and Folkman’s transactional model of stress and coping. The model describes coping as a process that is responsive to situational changes rather than one that remains relatively stable across situations. More specifically, individuals take into account the contextual characteristics of the stressful situation and appraise whether the outcome is controllable. This type of appraisal guides their choice and use of coping strategies to meet specific situational demands (Cheng, Lau & Chan, 2014).


**BOX 3.12**

**Coping Flexibility Scale**

The Coping Flexibility Scale (CFS) was developed by Japanese psychologist Tsukasa Kato. The scale is based on the operationalisation of coping flexibility as ‘the ability to discontinue an ineffective coping strategy and produce and implement an alternative coping strategy’.

**Instructions:**

When we feel stress, we try to cope using various actions and thoughts. The following items describe stress-coping situations. Please indicate how these situations apply to you by choosing one of the following for each situation:

0 = Not applicable; 1 = Somewhat applicable; 2 = Applicable; 3 = Very applicable

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>When a stressful situation has not improved, I try to think of other ways to cope with it.</td>
</tr>
<tr>
<td>2</td>
<td>I only use certain ways to cope with stress.</td>
</tr>
<tr>
<td>3</td>
<td>When stressed, I use several ways to cope and make the situation better.</td>
</tr>
<tr>
<td>4</td>
<td>When I haven’t coped with a stressful situation well, I use other ways to cope with that situation.</td>
</tr>
<tr>
<td>5</td>
<td>If a stressful situation has not improved, I use other ways to cope with that situation.</td>
</tr>
<tr>
<td>6</td>
<td>I am aware of how successful or unsuccessful my attempts to cope with stress have been.</td>
</tr>
<tr>
<td>7</td>
<td>I fail to notice when I have been unable to cope with stress.</td>
</tr>
<tr>
<td>8</td>
<td>If I feel that I have failed to cope with stress, I change the way in which I deal with stress.</td>
</tr>
<tr>
<td>9</td>
<td>After coping with stress, I think about how well my ways of coping with stress worked or did not work.</td>
</tr>
<tr>
<td>10</td>
<td>If I have failed to cope with stress, I think of other ways to cope.</td>
</tr>
</tbody>
</table>

To obtain your scores, first reverse the answer values for items 2 and 7. That is, for these two items, 0 = 3, 1 = 2, 2 = 1 and 3 = 0. Next sum the answer values for items 2, 6, 7, 8 and 9 to obtain your Evaluation Coping score. Then sum the answer values for items 1, 3, 4, 5, and 10 to obtain your Adaptive Coping score. Evaluation coping refers to your tendency to abandon ineffective strategies. Adaptive coping refers to your tendency to consider and create alternative coping strategies. Kato (2012) found a mean of 10.10 (sd = 3.12) for Evaluation Coping and a mean of 7.29 (sd = 3.20) for Adaptive Coping in a sample of Japanese college students.


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**LEARNING ACTIVITY 3.22**

**Reflection**

Consider a time when you had to cope with a relatively significant stressor. What aspects of your coping style suggest you have high or low coping flexibility? Given the potential benefits of coping flexibility, how could you achieve greater flexibility?

**Exercise**

Physical activity encompasses all movements in everyday life, including work, recreation, exercise and sporting activities. Everyone engages in some physical activity as part of their daily routines. For example, walking up a flight of stairs, walking to school, going shopping, cleaning your room, riding a bike and playing basketball or netball at school are all forms of physical activity.

**Exercise** is physical activity that is usually planned and performed to improve or maintain your physical condition. For example, going for a walk or a run to improve your fitness and doing bicep curls to develop upper-arm strength all involve physical activity considered to be physical exercise because they have the goal of improving physical condition.

A distinction is often made between aerobic exercise and anaerobic exercise. *Aerobic exercise* is activity that exercises the heart and lungs. It requires a sustained increase in oxygen consumption and promotes cardiovascular fitness. Examples of aerobic exercise include running and jogging, walking at more than a leisurely pace, dancing, rowing, swimming and bicycle riding. In contrast, *anaerobic exercise* involves short bursts of muscle activity that can strengthen muscles and improve flexibility. Examples of anaerobic exercise include weight training, sprinting, pilates and high-intensity interval training.

There is now worldwide acceptance among mental health professionals and medical practitioners in all types of cultures that physical activity and exercise are important elements of healthy living, not just for our physical wellbeing but also our mental wellbeing. It is also widely believed that traditional definitions of physical exercise should be broadened to refer to the improvement of an individual’s mental condition as well as their physical condition (Alters & Schiff, 2010; World Health Organization [WHO], 2010a).

Being physically active can substantially reduce the risk of a serious disease, including those associated with chronic stress, such as cardiovascular heart disease, kidney disease, hypertension, digestive disorders, stroke and possibly certain forms of cancer. In addition to improving physical health, regular exercise and physical activity can enhance mental health and overall sense of wellbeing. Research evidence indicates that aerobic exercise tends to be best for physical and mental health, although anaerobic...
exercise is better than no exercise. Individuals who engage in regular aerobic exercise tend to have higher levels of cardiovascular fitness and are better able to reduce their anxiety levels and cope with stress more effectively than their less-exercised counterparts (Alters & Schiff, 2010; Ratey, 2013). Considering the evidence, it should not be surprising that brisk walking, jogging, running, playing netball or basketball and similar activities are commonly included as an aspect of nearly all effective stress-management programs.

Exercise can help counter stress reactions in several ways. These include:

- When an individual experiences stress, stress hormones are secreted into the bloodstream. Physical exercise increases demands on the body for energy and in the process uses up the stress hormones. This helps the body return to normal functioning sooner. Exercise can also help ‘work out’ tension that has built up in the muscles.
- Exercise increases the efficiency of the cardiovascular system and increases strength, flexibility and stamina for encountering future stressors.
- Many people experience short-term psychological benefits during or immediately after exercising. For example, exercise can promote relaxation, thereby providing relief from stress symptoms.
- Strenuous physical activity can produce chemical changes in the body that can improve psychological health. For example, the brain releases mood-enhancing beta-endorphins during exercise. Beta-endorphins relieve pain and increase a sense of well-being and relaxation.
- Exercise can also provide an opportunity for distraction or ‘time out’ from a stressor. For example, it can divert a person's attention away from a stressor and the negative emotional states associated with stress. It can also benefit by removing the individual from the stress-producing situation.
- People who exercise with others can experience long-term psychosocial benefits from the social interaction and potential social support the interactions can provide.
Approach and avoidance coping strategies

The strategies people use to cope with difficult or stressful circumstances in their lives have been organised into different categories. One classification system distinguishes between approach and avoidance strategies. In this system, the terms ‘approach’ and ‘avoidance’ are used to refer to the orientation or focus of an individual’s activity either toward or away from the stressor. The aim of both approach and avoidant strategies is to reduce stress levels and increase the ability to cope, but the method in which this is achieved differs (Billings & Moos, 1981: Roth & Cohen, 1986).

**Approach coping strategies** involve efforts to confront a stressor and deal directly with it and its effects. Activity is focused *towards* the stressor, its causes and a solution that will address the underlying problem, issue or concern and minimise or eliminate its impact. For example, an approach strategy for a stressor involving loss of a job through retrenchment is to search for a new job. Similarly, stress due to an upcoming exam might involve an approach effort that targets working harder and spending more time studying while maintaining a healthy lifestyle. And stress due to a painful chronic condition might involve trying to seek more information about the condition, working out the triggers for flare-ups and identifying alternative treatment options.

**Avoidant coping strategies** involve efforts that evade a stressor and deal indirectly with it and its effects. Activity is focused *away* from the stressor and there is no attempt to actively confront the stressor and its causes. For example, an avoidant strategy for a job loss stressor may be to not tell anyone and not think about it. For stress due to an upcoming exam a strategy might involve ‘preparing for the worst’ or indirectly reducing the tension by such behaviour as eating more or playing video games. And an avoidant strategy for stress due to a pain might involve trying to ignore the pain through distraction or attempting to avoid increasing the pain.

<table>
<thead>
<tr>
<th>Approach strategies</th>
<th>Avoidance strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ‘I try to find out more information.’</td>
<td>• ‘I stop trying.’</td>
</tr>
<tr>
<td>• ‘I consider several alternatives for handling it.’</td>
<td>• ‘I pretend it isn’t real or doesn’t exist.’</td>
</tr>
<tr>
<td>• ‘I try to think about it in a more positive way.’</td>
<td>• ‘I accept the death and know that I must make the funeral arrangements, but I try to not think about it.’</td>
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<tr>
<td>• ‘I try to step back from the situation and be more objective about it and what I might be able to do.’</td>
<td>• ‘I change the subject.’</td>
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<tr>
<td>• ‘I ask a professional person for advice and follow it.’</td>
<td>• ‘I use alcohol or drugs to feel better.’</td>
</tr>
<tr>
<td>• ‘I take steps to eliminate the cause.’</td>
<td>• ‘I yell a lot at other people even though I don’t mean to.’</td>
</tr>
<tr>
<td>• ‘I make a plan of action and I follow it.’</td>
<td>• ‘I try to distract myself with other activities.’</td>
</tr>
<tr>
<td>• ‘I draw on my past experiences in similar situations.’</td>
<td>• ‘I avoid people and situations that remind me of it.’</td>
</tr>
<tr>
<td></td>
<td>• ‘I sleep more than usual.’</td>
</tr>
<tr>
<td></td>
<td>• ‘I go on an eating binge.’</td>
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</table>

Approach coping strategies are generally considered to be more adaptive and effective than avoidance strategies. For example, research studies have found that people who rely more on approach strategies to cope with a stressor tend to experience fewer psychological symptoms and are more able to function effectively compared to people who rely more on avoidance strategies. In addition, excessive reliance on avoidance strategies tends to be associated with a number of negative consequences, such as an increase in vulnerability to mental health problems and stress-related physical problems, such as hypertension.
and cardiovascular disease. Long-term use of avoidance strategies can also contribute to other problems. For example, one study of adolescents found that those who relied on avoidance coping strategies were more likely to engage in various delinquent and socially inappropriate behaviours, including substance use (Cooper et al., 2003; Mund & Mitte, 2011).

Although avoidance coping strategies tend to be maladaptive, this does not mean that avoidance coping strategies are all maladaptive or ineffective, or always maladaptive or ineffective. For example, when coping with a number of stressors at the one time, selectively avoiding to deal with unchangeable aspects of a stressor by ‘switching off’ may be considered an adaptive strategy. This allows for the conservation of energy to focus on other stressors that can be changed. Disengagement, for example, might be appropriate in a situation where nothing can be done (such as awaiting the outcome of an important medical test), but might be detrimental when action is needed (such as seeking medical attention for a serious health problem).

In addition, avoidant strategies can be more effective in coping with stress in the short term. For example, many students find preparing for exams very stressful. In this situation, using avoidant strategies such as listening to music, playing video games or going to a movie can all decrease stress. Similarly, ignoring a relationship problem for a couple of days while focusing on an important priority at work can also provide ‘time out’ from one stressor while minimising potential stress from another source, such as the workplace. However, these avoidance strategies are only helpful in the short term and their long term use can prevent people from responding to stressors in constructive ways.

A delay in dealing with a stressor can also have negative consequences. For example, not thinking about an exam until the night before can provide stress-free time, but waiting until the last moment to study can make that study period more stressful than it might have been and may also have negative consequences for future achievement if spending less time studying does not allow for proper exam preparation.

Many stressors and stressful situations are actually quite complex, so both approach and avoidance strategies may be used for coping. For example, in some situations, we may first use an avoidance strategy, which allows us to deal with the intense emotions that have been triggered by an especially overwhelming stressor. Then, later on, when we are feeling somewhat better, we can evaluate our situation and use an approach strategy to look for ways of managing the stressor or solutions. Of course, in other situations, the strategies may be used in the opposite order.

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Weblink
https://www.psychologytoday.com/blog/in-practice/201305/avoidance-coping

**FIGURE 3.39** Use of avoidance strategies can be effective in the short term by reducing distress, anxiety and preventing stressors from becoming overwhelming. However, long-term use of avoidance strategies may increase the risk of experiencing harmful effects of the stressor and ultimately delay, prevent or interfere with its resolution.
Problem-focused and emotion-focused coping

One of the most widely used classification systems for coping strategies in contemporary psychology is derived from the Lazarus and Folkman transactional model. This system distinguishes between problem-focused and emotion-focused coping.

Problem-focused coping involves efforts to manage or change the stressor which is the cause or source of the stress. This may include:

- reappraising the stressor by examining it from new perspectives
- obtaining more information about the stressor by talking to someone who could help
- redefining the stressor in a way that is more manageable
- generating alternative ways of dealing with the stressor
- focusing on changing only what is changeable
- learning new skills to more effectively manage the stressor.

For example, you may become stressed when you realise that you will not be able to afford to go to a rock concert with your best friends. Some possible problem-focused solutions include taking action to get more money by offering to do jobs for family members or neighbours, seeking an advance on a weekly allowance received at home, reducing your expenses or requesting repayment from someone who owes you money.

Problem-focused coping strategies tend to be used when we believe that we have some control over a stressful situation and think that we can change the circumstances, or at least change ourselves to more capably deal with the circumstances. Like approach strategies, they deal directly with the stressor to reduce or eliminate it.

Emotion-focused coping involves efforts to deal with the emotional response to a stressor. The strategies are therefore usually directed towards decreasing the negative feelings in a stress response. Emotion-focused coping strategies include such efforts as:

- denial e.g. ‘I’m not stressed’
- distancing e.g. ‘I don’t let it get to me’
- avoiding e.g. ‘I’m not entering the public-speaking competition’
- minimising e.g. ‘It’s not that bad’
- wishful thinking e.g. ‘I wish that the situation would go away or somehow be over with’
- acceptance e.g. ‘I accept that this has happened and can’t be changed’
- venting emotions e.g. ‘I feel angry’
- distraction e.g. reading a book, going for a run
- seeking emotional support from family members or friends.

Emotion-focused coping strategies tend to be used when we believe that we have little or no control over a situation and therefore can’t do anything to change the circumstances. For example, emotion-focused coping would tend to be used if we become stressed on learning that a loved one has been diagnosed with a serious illness. Emotion-focused coping efforts may reduce or postpone stress and ‘help us get by’, but they do not address the cause of a stressor or prevent it from happening again in the future.

Like approach and avoidance strategies, problem-focused and emotion-focused coping are not mutually exclusive and can therefore co-occur, especially in more complex stressful situations.

Figure 3.40 Problem-focused coping targets the cause of the stressor and aims to diminish its impact. For example, to cope with stress arising from an upcoming SAC test, you can prepare a timetable for studying, study hard, get a tutor, plan to cheat or pretend you are sick and re-sit the test after asking a friend what is on it. If none of these options is available, possible or desirable, and you fear that you may not pass the test, then you may use emotion-focused coping to decrease your emotional response to the stressor. For example, you can tell yourself it is not important to pass the test, remind yourself that you are quite good at sitting tests, moan to your friends, ‘cry on someone’s understanding shoulder’ or become very busy doing something else.
LEARNING ACTIVITY 3.23

Review questions

1 Explain the meaning of coping in relation to a stress response.

2 (a) Explain the meaning of context-specific effectiveness in relation to coping strategies.
   (b) Which elements of a stressful situation are relevant to context-specific effectiveness?
   (c) Give an example of a stressful situation in which context-specific effectiveness is
       (i) demonstrated
       (ii) not demonstrated.

3 (a) Explain the meaning of coping flexibility with reference to an example involving:
       (i) high coping flexibility
       (ii) low coping flexibility.
   (b) What is a potential benefit of coping flexibility?

4 (a) Describe three potential benefits of exercise for coping with effects of stress.
   (b) Briefly explain why aerobic exercise is considered to be more beneficial than anaerobic exercise for coping with effects of stress.

5 (a) Complete the following table to summarise approach and avoidance coping strategies. Include two of your own examples for each strategy.

<table>
<thead>
<tr>
<th>Coping strategy</th>
<th>Description</th>
<th>Key features</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Approach</td>
<td></td>
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<tr>
<td>Avoidance</td>
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(b) Explain why approach strategies are considered to be more adaptive than avoidance strategies, especially when considered from a long-term perspective.

(c) Give an example of when an avoidance strategy may be considered adaptive.

(d) Are approach and avoidance strategies mutually exclusive and therefore unable to be used together? Explain with reference to an example.

(e) Consider the following cartoon depiction of a coping strategy.
   (i) Explain whether the cartoon depicts use of approach or avoidance.
   (ii) What is an advantage and a disadvantage of using this type of strategy in both the short and long term?

LEARNING ACTIVITY 3.24

Reflection

Comment on whether the use of any coping strategy is better than not using a coping strategy when experiencing stress. Of what relevance is the nature of the stressor to your answer?
CHAPTER 3 REVIEW

CHAPTER SUMMARY

STRESS AS A PSYCHOBIOLOGICAL PROCESS

Eustress and distress
- Daily pressures
- Life events

Sources of stress
- Acculturative stress
- Major stressors
- Catastrophes

Stress as a biological process
- Fight-flight-freeze response
- Role of cortisol
- Selye’s general adaptation syndrome
- Strengths and limitations of Selye’s GAS

Stress as a psychological process
- Lazarus and Folkman’s transactional model of stress and coping
- Strengths and limitations of the Lazarus and Folkman model

Strategies for coping with stress
- Context-specific effectiveness
- Coping flexibility
- Exercise
- Approach and avoidance coping strategies

Fight-flight reactions
- Freeze reactions
- Stage 1: Alarm reaction
- Stage 2: Resistance
- Stage 3: Exhaustion

Primary and secondary appraisals

STRESS AS A PSYCHOBIOLOGICAL PROCESS

UNCORRECTED PAGE PROOFS

CHAPTER 3 Stress as a psychobiological process 47
KEY TERMS

acculturative stress  p. 00
alarm reaction  p. 00
approach coping strategies  p. 00
avoidant coping strategies  p. 00
catastrophe  p. 00
circuit-specific effectiveness  p. 00
coping flexibility  p. 00
coping  p. 00
coping strategy  p. 00
cortisol  p. 00
daily pressures  p. 00
distress  p. 00
eustress  p. 00
exercise  p. 00
exhaustion stage  p. 00
fight-flight-freeze response  p. 00
general adaptation syndrome (GAS)  p. 00
life event  p. 00
major stressor  p. 00
primary appraisal  p. 00
resistance stage  p. 00
secondary appraisal  p. 00
stressors  p. 00
stress  p. 00
transactional Model of Stress and Coping  p. 00

LEARNING CHECKLIST

Complete the self-assessment checklist below, using ticks and crosses to indicate your understanding of this chapter’s key knowledge (a) before and (b) after you attempt the chapter test. Use the ‘Comments’ column to add notes about your understanding.

<table>
<thead>
<tr>
<th>Key knowledge I need to know about &lt;t/c&gt;</th>
<th>Self-assessment of key knowledge I understand before chapter test</th>
<th>Self-assessment of key knowledge I need to revisit after chapter test</th>
<th>Comments</th>
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CHAPTER TEST

SECTION A — Multiple-choice questions

Choose the response that is correct or that best answers the question.
A correct answer scores 1, an incorrect answer scores 0.
Marks will not be deducted for incorrect answers.
No marks will be given if more than one answer is completed for any question.

**Question 1**
One of the hormones secreted during the fight–flight–freeze response is
A. cortical.
B. adrenaline.
C. cortisol.
D. ACTH.

**Question 2**
Fight–flight–freeze is best described as a
A. specific reaction occurring in a specific sequence.
B. series of three specific reactions occurring independently.
C. naturally occurring learned response.
D. naturally occurring unconscious response.

**Question 3**
A benefit of fight–flight–freeze is that
A. the body is quickly energised to react to a threat.
B. it enables an organism to successfully adapt to all types of situations.
C. it prevents organisms from being harmed by stressors that are threatening.
D. the individual organism can choose how to respond to a threat depending on the situation.

**Question 4**
The sympathetic nervous system
A. activates bodily functions to deal with an immediate stressor.
B. activates muscular relaxation and decreases heart rate.
C. counterbalances the energising effects of the parasympathetic system.
D. maintains the internal systems of the body in a balanced state.

**Question 5**
As you walk down the street on your way to visit a friend, a ferocious dog jumps a fence and chases you, barking and growling. Which of the following systems is least likely to be dominant as you try to flee from the dog?
A. sympathetic
B. cardiovascular
C. endocrine
D. parasympathetic

**Question 6**
Which of the following potential stressors would be classified as having an internal source?
A. travelling in an overcrowded peak hour train
B. being refused entry to an important exam for being late
C. achieving a lower grade than expected for a SAC
D. being bullied by another student

**Question 7**
Hormones of the body’s endocrine system are important contributors to managing stress. Which gland in the brain initiates hormonal secretion?
A. pituitary
B. hypothalamus
C. adrenal
D. amygdala

**Question 8**
A life event such as moving out from home to live alone could be a stressor because it
A. involves adjustment to change.
B. is a choice people make.
C. can be positive or negative.
D. depends on the individual involved and their interpretation of the specific event.

**Question 9**
Why does the temperature in our hands drop when we experience stress?
A. We breathe in less oxygen.
B. We feel threatened or fearful.
C. To support cortisol’s immunity requirements.
D. Blood flow diverts to major muscle groups for possible fight or flight.

**Question 10**
Which of the following is an example of an approach coping strategy?
A. ‘I exercise more.’
B. ‘I eat.’
C. ‘I sleep more.’
D. ‘I get busy with other things to keep my mind off it.’

**Question 11**
Coping refers to the
A. product of stress.
B. typical biological reaction to stress.
C. typical psychological reaction to stress.
D. process of dealing with a stress.

**Question 12**
The opposite of a fight–flight response to a stressor is
A. eustress.
B. the HPA axis.
C. a freeze state.
D. an arousal state.

CHAPTER 3 Stress as a psychobiological process
Question 13
The most immediate effect of adrenaline and noradrenaline secretion is
A. arousal.
B. immobility.
C. relaxation.
D. energy conservation.

Question 14
An elevated level of cortisol in the bloodstream for a prolonged period due to a chronic stressor may
A. maintain the parasympathetic nervous system in an active state.
B. deplete the body of all its hormones.
C. deplete the body’s resources and lead to long-term illness or disease.
D. contribute to a breakdown in the functioning of the immune system.

Question 15
The body’s inbuilt safeguard system against excessive cortisol primarily involves
A. an exhaustion stage.
B. feedback to the hypothalamus.
C. the HPA axis.
D. the parasympathetic nervous system.

Question 16
The stage of Selye’s general adaptation syndrome in which an organism initially responds to a stressor is called
A. resistance.
B. exhaustion.
C. alarm reaction.
D. countershock.

Question 17
Selye described eustress as
A. the subjective experience of stress.
B. the prolonged experience of stress.
C. a positive response to a stressor.
D. a negative response to a stressor.

Question 18
Which of the following is an example of primary appraisal according to the Lazarus and Folkman transactional model of stress and coping?
A. determining the extent to which additional resources are needed to cope
B. evaluating the potential impact of the stressor
C. judging the usefulness of coping resources that are available
D. any exchange between the individual and the environment

Question 19
Which of the following is an example of secondary appraisal according to the Lazarus and Folkman transactional model of stress and coping?
A. making a judgment about whether a situation is actually stressful
B. minimising harm or loss that may occur
C. estimating the value of coping options and resources that may be accessed
D. minimising harm or loss that has occurred

Question 20
According to the Lazarus and Folkman transactional model of stress and coping, stress is
A. a product of appraisal.
B. a product of arousal.
C. a biological response to a stressor.
D. an environmental response to a stressor.

SECTION B — Short-answer questions
Answer all questions in the spaces provided. Write using blue or black pen.

Question 1 (2 marks)
Define stress as a psychobiological process.

Question 2 (2 marks)
(a) How do daily pressures (hassles) contribute to stress? 1 mark

(b) Under what circumstances are daily pressures more likely to influence onset or maintenance of a major health problem? 1 mark
**Question 3** (3 marks)
(a) Describe the role of appraisal in the Lazarus and Folkman transactional model of stress and coping. 1 mark

(b) What is a strength and a limitation of the transactional model? 2 marks

**Question 4** (5 marks)
(a) Harry and Carla have both started attending a new school. Harry is an outgoing sporty person, whereas Carla is very shy and reserved. State whether Harry and Carla are likely to experience eustress or distress and explain why. 2 marks

(b) List three differences between eustress and distress. 3 marks

**Question 5** (3 marks)
(a) Define the meaning of acculturative stress. 1 mark

(b) What two factors can influence the degree of acculturative stress experienced by an individual? 2 marks

**Question 6** (4 marks)
Your friend tells you about a scary movie about killer cockroaches she watched last night. In one scene, a cockroach came around the corner and confronted a young lady who was waiting for a late night bus. She saw the ferocious-looking “monster”, but did nothing. She did not run. Nor did she scream. She just stood there ‘scared stiff’ with a look of horror on her face until the cockroach approached and ate her. Your friend screamed as she thought the lady was stupid because she should have run or at least done something. Your friend has seen this failure to respond in some other horror movies and is confused. She knows you are studying psychology and wonders if you can offer an explanation.

(a) What term would psychologists use to describe the lady’s response? 1 mark
(b) Would they describe it as a voluntary or involuntary response? 1 mark

(c) What is a psychobiological explanation of the response? 2 marks

**Question 7** (6 marks)
A research study measuring the effectiveness of a stress management course used cortisol level as their dependent variable.

(a) Explain whether cortisol level is a valid dependent variable for this study. 1 mark

(b) If the stress management course was effective, what would happen to the participants’ cortisol levels? 1 mark

(c) What are two potential benefits and two potential harmful effects of cortisol when stressed? 4 marks

**Question 8** (4 marks)
(a) Jack usually takes the stairs at work because he gets anxious in a crowded elevator. One morning, when late for work, he notices the elevator is empty and decides to take it. The elevator jams and he is told over the emergency phone that it will take ‘quite a while’ to repair. He focuses on remaining as calm as possible and decides to use the spare time to review the report in the document he is carrying.

Explain whether Jack is using approach and/or avoidance to cope with the stress of being stuck in an elevator. 2 marks

(b) Ramij suffers migraines and always takes her medication as soon as she notices a migraine coming on.

Explain whether Ramij is using an approach or avoidance coping strategy. 2 marks

**Question 9** (7 marks)
(a) Explain the meaning of coping flexibility. 1 mark
(b) List three characteristics of coping flexibility. 3 marks

(c) Explain how coping flexibility can influence context-specific effectiveness of coping. 3 marks

Return to the checklist on page xxx and complete your self-assessment of areas of key knowledge where you need to do more work to improve your understanding.

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The answers to the multiple-choice questions are in the answer section at the end of this book and in eBookPLUS.

The answers to the short-answer questions are in eBookPLUS.

Note that you can also complete Section A of the chapter test online through eBookPLUS and get automatic feedback. int-0000