

Basic Stress Notes

Learn this or fail module 2.
 NB: You must also learn APFCC for at least one study per section.

Description AO1	Evidence/Commentary AO1/AO2	Criticism/Evaluation AO2
<p>Bodily Responses to Stress</p> <p>The Fight or Flight Response (HPAA) Short term stress response:</p> <ol style="list-style-type: none"> Hypothalamus (brain) activates sympathetic ANS. Sympathetic ANS causes increase in heart rate, breathing, decrease in digestive activity and release of adrenaline from adrenal medulla. Hypothalamus activates pituitary gland. Pituitary releases ACTH. ACTH causes adrenal cortex to release stress hormones. 	<p>Increases in heart rate and breathing prepare the body to expend energy (faster intake of oxygen and delivery to muscles) Release of adrenaline keeps activation in sympathetic ANS at a high level. Release of stress hormones increases availability of glucose and reduces inflammation in case of injury.</p>	<p>Measuring stress hormones gives an objective measure of stress. Fight/flight response can be seen in all mammals in response to threats. People without adrenal glands need hormonal supplements to survive stress. There is considerable variation in level and type of hormones released by different people and in response to different stressors – not a simple physiological process. Symington (1955) found that conscious dying patients showed different stress reactions to unconscious ones. Suggests that psychological factors play a role.</p>
<p>The General Adaptation Syndrome Long term stress response:</p> <ol style="list-style-type: none"> Alarm – body mobilises resources to deal with stressor (fight or flight) Resistance – body attempts to adapt to the stressor. Heart rate etc. return to normal. High levels of stress hormones released; adrenal glands enlarged. Exhaustion – body's resources are depleted. Immune system is damaged. Body is open to infection, illness and death become likely. 	<p>Selye (1956) subjected rats to variety of stressors (e.g. heat, cold, exercise, injury). Found that they went through stages described left. Fits in with evidence on relationship between stress and illness (see below).</p>	<p>Based largely on animal studies – may not occur exactly this way in humans. Probably underestimates impact of individual differences e.g. personality and other psychological processes. However, an important contribution to our understanding of stress, especially where it is prolonged e.g. long-term illness, major injury.</p>

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<p>Stress and illness</p> <p>Two routes between stress and illness:</p> <ol style="list-style-type: none"> 1. Effect of physiological stress response on functioning of body e.g. immune system etc. 2. Behavioural coping strategies e.g. use of drugs/alcohol that may damage the body. 	<p>See also material on Holmes & Rahe below</p>	
<p>Gastric Ulceration</p> <p>Stress responses have an effect on digestive system. During stress digestion is inhibited. After stress (during parasympathetic rebound) digestive activity increases. May affect health of digestive system.</p>	<p>Brady (1958) executive monkeys experiment. Monkeys subjected to prolonged stress (through having control of the shocks) developed gastric ulcers and died. Weiner et al (1957) – soldiers prone to over secretion of digestive enzymes more likely to develop ulcers during stressful training. These studies support the link between stress & gastric problems.</p>	<p>Brady study used monkeys. May be considered unethical, and may not generalise to humans in a straightforward way. Weiner et al – only 14% of over secretors developed ulcers, so 86% did not –why? Ulcers now known to be caused by an infection, so more likely that link between stress and ulceration is due to immune response rather than direct effect on digestive system.</p>
<p>Immune Depression</p> <p>Stress responses reduce the effectiveness of the immune system. Two mechanisms:</p> <ol style="list-style-type: none"> 1. Maintenance of stress response requires energy, which must be diverted away from maintaining immune system. 2. Stress hormones e.g. cortisol have a specific effect on different types of cells in the immune systems e.g. natural killer cells. 	<p>Kiecolt-Glaser et al (1984) found that medical students' levels of natural killer cells dropped significantly as their exams got closer, particularly if students were lonely or depressed. Cohen et al (1991) found that stressed people are more likely to catch colds. These studies show that stress reduces ability to fight off infections.</p>	<p>Difficult to unravel the relationship for certain. Does stress cause illness or does being ill make you more prone to stress? Mediating health behaviours e.g. smoking are likely to play a role.</p>
<p>Cardiovascular Disorders</p> <p>Stress responses increase strain upon circulatory system due to increased heart rate etc. This may increase a person's risk of developing disorders of the heart and circulation e.g. coronary heart disease.</p>	<p>Friedman & Rosenman (1959) found that type As (see below) were more likely to develop heart disease. This suggests that stress can lead to CHD but only in people with a particular personality type.</p>	<p>No certain which aspects of type A behaviour are most relevant. Probably aggression & hostility. Relationship is not particularly strong, interacts with many other factors e.g. coping strategies, health behaviour and genetic predispositions.</p>

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Sources of Stress			
<p>Life Change Major changes to life (e.g. divorce, death of spouse, moving house) require person to adapt. This adaptation is stressful and may have an impact on physical health.</p>	<p>Holmes & Rahe (1967) used the SRRS to measure life change. Found a positive correlation between life change scores and ill health. Rahe et al (1970) used SRRS with large sample of naval personnel. Again, found a positive correlation between scores and ill health. These studies suggest that life change and ill health are linked.</p>	<p>Correlations, whilst significant, are still very small. Life change only has a minor impact on general health. The effect may be explained several ways e.g. possibly becoming ill increases exposure to life stressors or maybe being ill makes you more likely to report life changes. SRRS assumes that each stressor affects people the same way. Not necessarily true e.g. divorce can be amicable or even a relief. SRRS includes positive life change e.g. increase in income – is this as stressful and drop in income?</p>	
<p>The Workplace Workplaces can be stressful for many different reasons. Two sources of work stress are:</p> <ol style="list-style-type: none"> 1. Poor relationships with colleagues. Conflict is usually stressful, but at work is worse as it's difficult to avoid. 2. Lack of control. If a worker has few or no choices about workrate, priorities etc. this can be very stressful (see below). 	<p>Matteson & Ivancevich (1982) found that poor work relationships were most commonly reported stressor amongst workers. Karasek et al (1982) found positive correlation between support from colleagues and job satisfaction. Marmot et al (1977) found inverse relationship between work grade and illness i.e. higher grades with more control were less likely to be ill. Workers on bottom grades were 4 times more likely to get CHD, cancer, gastric problems.</p>	<p>Evidence is correlational. E.g. do poor relationships increase stress, or does stress cause work relationships to deteriorate? Similarly, people who have major illnesses are perhaps less likely to progress within an organisation. However, all the evidence seems to point in the same direction. Interventions where control over work has been increased generally lead to improved worker satisfaction and lower stress.</p>	
Control and Stress			
<p>Feelings of control are an important mediator of stress effects. Experience of stress depends on perception of situation, so stress is likely to be worse if a person perceives they cannot control either the source of stress or their ability to deal with it.</p>	<p>Marmot et al (1977) found that lack of control led to increased risk of illness. Langer & Rodin (19XX) found that elderly people in residential care had better health and greater life expectancy when they were given the chance to make their own decisions. These findings suggest that increasing control can reduce the effects of stress. See also the material on psychological treatments for stress below.</p>	<p>Increased sense of control does not automatically reduce stress. In Brady (1958) it was the monkey that could control the shocks that died. In this case, being in control was the source of the stress.</p>	

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<p>Individual Differences in Stress</p> <p>Personality Personality affects the person's perception of stressful situations, so therefore affects how they respond to stressors. Important personality differences include:</p> <ol style="list-style-type: none"> 1. Type A behaviour – type As tend to be competitive, time-urgent and aggressive. They are more susceptible to stress. 2. Hardy personalities – more likely to see stress as a challenge, therefore fewer negative effects. 3. Locus of control – affects a person's perception of control over the stressor. 	<p>Friedman & Rosenman (1959) found that type As run a higher risk of CHD/heart attacks than type Bs.</p> <p>Kobasa et al (1982) found that hardy personalities experienced less negative stress.</p> <p>Ainsworth (2000) found that external LOC was associated with more stress following crime victimisation.</p>	<p>See above re type A behaviour.</p> <p>Personality effects are generally small, so it might be a relatively unimportant factor in stress responses.</p> <p>Sometimes difficult to predict how personality will affect stress response. E.g. external LOC might increase it stress due to feelings of helplessness or decrease it because the person feels there's no point worrying (compare Brady's monkeys).</p>
<p>Gender Men and women differ in the ways they respond to stressors. This occurs on several levels:</p> <ol style="list-style-type: none"> 1. Biological responses – gender differences in e.g. hormones may affect damage done by stress 2. Coping styles – gender differences in how stress is dealt with may affect level of protection from stress 3. Health behaviours – there may be gender differences in stress related behaviours that could damage health. 	<p>Williams (1999) found that, compared to men, women release higher levels of oxytocin when stressed. This appears to help them relax and protects them from damaging effects of stress hormones.</p> <p>Repetti et al (1997) found that women respond to stress using a 'tend and befriend' rather than a 'fight or flight' strategy. They are more likely to seek social support than men, which helps them cope.</p> <p>Men are more likely than women to drink and smoke when stressed. This has consequences for their health.</p>	<p>Has been suggested that these differences reflect evolutionary strategies that developed early in human history. However, this is difficult to prove.</p> <p>These gender differences are fairly slight. It's not a case of all men doing one thing and all women doing another. There is great overlap between the sexes.</p> <p>Due to societal changes, women's health behaviour is changing and they are more likely than previously to drink, smoke etc. Therefore, health related changes in stress behaviours are in the process of disappearing.</p>
<p>Culture Cultures differ in their stress responses for a number of reasons:</p> <ol style="list-style-type: none"> 1. They are exposed to different types of stressor (e.g. tsunami in SE Asia last year) 2. They have different perceptions of stressors 3. They have different culturally available coping responses. 	<p>In some parts of the world, there are more threats to survival e.g. famine, natural disaster whereas in West, stress focused on things like the workplace.</p> <p>Zheng & Lin (1997) found that Chinese pps rated items on the SRRS differently to Westerners e.g. death of close family member more stressful than divorce.</p> <p>Steffen et al (2001) found that African Americans made more use than White Americans of religious coping e.g. praying for assistance. This led to lowered blood pressure in Af.Ams.</p>	<p>Difficult to isolate the causes of cultural variations. E.g. African Americans have higher risk of high blood pressure than White, but this could be due to social influences (e.g. racism & discrimination) or genetic factors.</p> <p>Cross cultural research tends to be fairly limited, small samples and with potential for bias from researchers.</p>

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Stress Management		
Biological Approaches		
<p>Drugs Attempt to reduce stress responses by altering biological functioning:</p> <ol style="list-style-type: none"> 1. Anxiolytics e.g. Valium cause an increase in GABA, which reduces serotonin activity, reducing anxiety. 2. Beta blockers reduce responsiveness of the sympathetic ANS, reducing the physiological stress response 	<p>Barlow & Durand (1995) report that anxiolytics reduce feelings of anxiety in stress patients for about 4 weeks. Patients taking drugs felt less anxiety and had fewer panic attacks.</p>	<p>Drugs can have side effects e.g. disturbed sleep and can cause dependency in the longer term. There may be withdrawal symptoms e.g. significant increases in anxiety when the person stops taking them. They do not necessarily address the stress effectively because they only suppress the symptoms of stress. They are best for intense, short term stressors and can be very useful for these.</p>
<p>Biofeedback Attempt to teach the person to control their own stress responses:</p> <ol style="list-style-type: none"> 1. The person is connected to a monitor that tells them about changes to e.g. heart rate, blood pressure etc. 2. Using the feedback from the monitor, the person tries different techniques to reduce the stress response and learns what works. 	<p>Budzynski et al (1973) found that pps trained with biofeedback suffered fewer tension headaches. Curtis (2000) trained pps using biofeedback and reduced migraine symptoms. These studies show biofeedback can be effective.</p>	<p>Equipment is expensive so not widely available. The training may not generalise to the stressful situations. Most effective with children –adults may be more sceptical and less enthusiastic.</p>
Psychological Approaches		
<p>Stress Inoculation Training (SIT; Meichenbaum) Training to help people deal with stressors before they occur:</p> <ol style="list-style-type: none"> 1. Identifying the problem 2. Training in coping e.g. relaxation, positive self statements etc. 3. Application practice, role play 	<p>Meichenbaum (1977) found that SIT was effective in reducing phobic responses and generalised to other situations as well. This suggests it is a good all-round treatment.</p>	<p>NB applies to both. Research supports effectiveness of psychological treatment, but quality of research is sometimes questionable. E.g. small samples, potential for bias as Meichenbaum, Kobasa et al are making money from training courses. Most research done on men, don't know if women benefit as much. Change may be difficult when stress is related to thinking habits that have built up over many years. Doesn't work as fast as drugs, probably better for milder, long term stressors.</p>
<p>Hardiness Training (HT; Kobasa) Training to help people alter their perception of stressors:</p> <ol style="list-style-type: none"> 1. Recognising signs of stress 2. Seeing stressors in a more positive light 3. Compensation by meeting challenges 	<p>Fischman (1987) found that HT reduced headaches and led to better sleep and higher job satisfaction in executives. Sarafino (1990) found HT leads to lower stress and reduced blood pressure. These studies suggest that HT is an effective treatment.</p>	