Stress

According to Sarafino (1990), stress is the condition that results when a person's environment/transactions lead them to perceive a discrepancy (whether real or not) between the demands of a situation and the resources of the person's biological, psychological and social systems.

- Physiology of stress- Physiology is the functioning of bodily processes and during stress the hormones (e.g. corticosteroids and catecholamines) raise the energy levels of the body to prepare for 'fight or flight'.
    - The physiological approach looks at the inter-relationship between our physiology (genes, hormones, neurotransmitters, etc.) and our psychology (mind, behaviour, thought-processes, emotions, etc.). There are a number of physiological theories (Selye) and a number of physiological measures.
    - GAS model
        - One of the earliest theories of stress by Walter Cannon in 1929 involved the physiological arousal in a 'fight or flight' response.
        - Hans Selye (1936) extended Cannon's theory to include the physical harm caused by over-arousal. He developed a model called General Adaptation Syndrome, which has 3 stages:
            - The alarm reaction- mobilises the body's resources and increases physiological arousal such as in 'fight or flight' response. By undertaking experiments on rats, Selye concluded that organisms are incapable of maintaining a constant alarm reaction for lengthy periods of times; they die within hours. In order to survive, organisms enter a second stage.
            - The stage of resistance- an attempt is made by the body to counteract the effects of the hormones released earlier and reduce the high state of arousal. However, even this process cannot be kept up forever, leading to a third stage.

        - The stage of exhaustion- if the high levels of arousal are prolonged, eventually some part of the physiological system will break down.
    - Cannon's fight or flight theory and Selye's GAS model both define stress as an automatic physiological response to an external stressor. This is a reductionist approach as it ignores psychological and social.
- Causes and measures of stress
    - Lack of control
        - A study carried out by Geer and Maisel, 1972, investigated whether perceived control or actual control could reduce stress reactions to aversive stimuli.
        - It was a lab experiment in which 60 psychology undergraduates from NYU were shown photographs of dead car crash victims and their stress levels were measured by GSR (galvanic skin response) and HR(heart rate) electrodes.
        - It employed an independent measures deign with 3 groups:
            - Group1- given actual control over how long they saw each photograph.
            - Group 2- predictability group- saw photos for as long as G1 did and were given details such as photos being 60s apart so they knew what would happen but could not control it.
            - Group 3- also saw photos for as long as G1 did but were simply told they would see some photos and hear tones. They had no control and no predictability.
        - G2 was most stressed by the tone as they knew what was coming but could do nothing about it.
        - Each participant was seated in a sound-shielded room and wired up to galvanic skin response (GSR) and heart-rate monitors. The machine calibrated for 5 minutes while the participant relaxed and then a baseline measure was taken. The instructions were then read over the intercom and after 1 minute, the remaining stimuli were presented.
        - The GSR analyses were taken at the onset of the tone, during the second half of the tone and in response to the photograph shown.

- All the data from the Heart Rate monitors was deemed as invalid and therefore was discarded from the results.
- Conclusion- Having the control to terminate aversive stimuli reduces the stressful impact of those stimuli.
- *Geer and Maisel (1972) Evaluation*
    - + Order effects – the use of the independent measures means that order effects have been controlled for.
    - – Participants variables could have confounded upon the results as the design was independent measures.
    - – Ecological validity – in real life there are not many chances that we have to control real life variables therefore the ecological validity is low because we cannot easily generalise the results to real life situations.
    - – Small and ethnocentric sample – this makes the reliability of the results low and also makes it harder to generalise the results.
    - + Useful – the results and conclusions suggest that giving people the belief that they are in control may reduce their stress.
    - - Unethical – traumatic for participants to see such photos
    - - reductionist as it only considers aversive stimuli

- Work
    - Johannson et al. (1978) aimed to study the physiological and psychological stress responses in the two categories of high-risk and low-risk workers.
    - High-risk workers had a complex job and worked at a set pace governed by the production line.
    - Low-risk workers worked at their own pace as cleaners or maintenance staff.
    - Measured adrenaline through urine samples, body temp checks, self-rating of mood and alertness and caffeine and nicotine consumption.
    - Results showed that high-risk group had high adrenaline levels that increased at work. While low-risk adrenaline levels lowered throughout the day.

- Self-report showed that high-risk group felt more rushed and irritated and also rated themselves lower on a scale of wellbeing.
- Quasi experiment
- Conclusion- the repetitive, machine-paced work which was demanding in attention to detail and was highly mechanised, contributed to the higher stress levels in the high-risk group.
- *Johansson et al* (1978) Evaluation
    - – Validity – as the experiment was quasi, the experimenter could not manipulate the variables – we cannot be sure if it was the conditions or other variables which caused the change.
    - – Ethnocentrism – the sample consisted of only Swedish workers in a mill, which is clearly not representative of a great many jobs and therefore the results may prove difficult to generalise.
    - – Small sample – the sample is rather limited and cannot be easily generalisable.
    - + Measuring biochemical responses is highly reliable and somewhat valid, as some biochemicals are present in different situations.
    - + The study measured both psychological and physiological measures therefore it is low in reductionism.

- Life events
    - Holmes and Rahe (1967) constructed a questionnaire called the Social Readjustment Rating Scale (SRRS).
    - It is used to measure the amount of stress a person experiences over a certain amount of time (usually one year).
    - They initially conducted research into how different life events are perceived in terms of how stressful they are.
    - Each of the 43 life events was given a score out of 100 which were called the life change units (LCUs). People simply had to add up all the LCUs they had scored over one year.
    - This generated a total of LCUs that could be used as an indicator of the level of stress experienced.

        - Holmes and Rahe noted that people who scored more than 300 LCUs in a given year were much more likely to become ill due to the amount of stress they experienced.
        - Example- death of spouse- 100, marriage- 50 and minor violations of the law- 11.
    - Personality
        - Friedman and Rosenman (1974) suggested that personality may be a factor in how we experience stress.
        - Type A people are ambitious, aggressive, assertive, time conscious and competitive.
        - Type B people are more relaxed, less demonstrative, patient and may lack a sense of urgency.
        - Longitudinal study (as participants were followed up to 8.5 yrs.)
        - Study was done to test the hypothesis that Type A individuals are more likely to develop coronary heart disease than type B individuals.
        - Assessing Type A/B pattern: This was done by means of a structured interview using two kinds of information
            - Answers given to interview questions o eg: how participants react to queuing, driving in slow traffic, deadlines at work and problems at home.
            - The individual's behaviour during the interview e.g.: way of speaking (e.g. loudness, speed of talking), also the individual's tendencies towards impatience and hostility were assessed by the interviewer deliberately interrupting the person being interviewed from time to time.
            - On the basis of these measures the participants were classed as A1 (Type A), A2 (not fully type A), X (equal amounts of Type A and B) and B (fully Type B).
        - Results showed that 70% of participants who developed CHD during the study were type A. This association remained significant even after other risk factors such as obesity were considered thus type A personality was found to be an independent risk factor for CHD.

- Daily hassles
  - Lazarus et al (1981) believe that stress is caused by small, everyday frustrations which they call daily hassles and that these have a significant effect on our health and may be a better measurement of body's adaptation to stress.
  - Hassles and Uplifts scales were constructed and administered once a month for 10 consecutive months to a community sample of middle-aged adults.
  - The scale had 117 different daily events and people had to rate each event on a set scale. The higher the score, the more stress they experienced which in turn led to increased chances of ill health.
  - The uplifts scale recorded events that were positive and happy to see if these can offset the potential stress caused by daily hassles.
  - It was found that the Hassles Scale was a better predictor of concurrent and subsequent psychological symptoms than were the life events scores, and that the scale shared most of the variance in symptoms accounted for by life events.
  - When the effects of life events scores were removed, hassles and symptoms remained significantly correlated.
  - Uplifts were positively related to symptoms for women but not for men.
  - Hassles and uplifts were also shown to be related, although only modestly so, to positive and negative affect, thus providing discriminate validation for hassles and uplifts in comparison to measures of emotion.
  - It was concluded that the assessment of daily hassles and uplifts may be a better approach to the prediction of adaptational outcomes than the usual life events approach.

- Management of stress
  - Medical techniques (chemical)- drugs
    - Benzodiazepine
      - Anti-anxiety drugs such as Librium and Valium
      - Reduces the activity of serotonin
      - Inhibitory effect on the brain causing muscle relaxation and a calming effect

        - Beta-blockers
            - Inderal
            - Reduces activity of sympathetic nervous system
            - Effective against raised heart rate and blood pressure
        - Should only be used as a short-term, temporary measure for dealing with stress.
        - Long-term use of benzodiazepines can lead to psychological and physical dependency- addiction.
        - All drugs have side-effects. Benzodiazepines can cause drowsiness and adversely affect memory.
        - Drugs treat the symptoms of stress and not the causes. Most stresses are psychological and therefore physical measures do not address the real cause of the problem.
        - The person can become tolerant to that drug.
    - Psychological techniques
        - Biofeedback
            - It is a technique in which an electromechanical device monitors the status of a person's physiological processes such as heart rate, blood pressure, muscle tension and immediately reports that info back to the individual. The person is then able to gain voluntary control over these processes through operant conditioning. The feedback from the device becomes the reinforcement.
            - An experiment was conducted with patients suffering from chronic muscle-contraction headaches (Budzynski et al., 1973).
            - They used EMG- electromyographic feedback: The apparatus attached to the forehead by electrodes to detect muscle activation generates an audible tone when the muscles are active. The idea is to reduce the tone generated by lowering the activity of the muscles (and hence reduce the headache).
            - They combined biofeedback with training in deep muscle relaxation in the experimental group.
            - Those who were given biofeedback regarding muscle tension in the forehead later showed less tension in

those muscles and reported having fewer headaches than subjects in control groups. These benefits were found at a follow-up session after three months.

- Beneficial results can be obtained in 4-8 weeks
- Drug usage decreased in experimental group
- Authors suggest that EMG training with daily practice at home can be effective up to 18 months later.
- The process is simple, drug free and can be done with portable and relatively inexpensive equipment.

- Imagery
  - Bridge et al (1988) used relaxation and imagery to reduce stress in 154 women with breast cancer in 3 different ways:
    - Control- encouraged to talk about themselves
    - Relaxation only- taught concentration o on individual muscle groups
    - Relaxation and imagery- also taught to imagine peaceful scenery of own choice to enhance relaxation
  - Design- controlled randomised trial lasting 6 weeks
  - DV- improvement of mood and of depression and anxiety on self-rating scales
  - Measurements and main results
    - Initial scores for profile of mood states and Leeds general scales for depression and anxiety were the same in all groups.
    - At six weeks total mood disturbance score o was significantly less in the intervention groups, o women in the combined intervention group being more relaxed than those receiving relaxation training only; o mood in the control group was worse.
    - Women aged 55 and over benefited most.
    - There was no difference in Leeds scores among the groups.

        - Ensuring that people are not focusing on their current stressors allows them to calm down and take control of their own physiological state.
- Preventing stress
    - Preventive measures are techniques that can be used to allow people not to be affected by stress and stressors.
    - Meichenbaum (1985) prevented stress with self-instructional training and stress inoculation therapy.
    - He adapted the process of systematic desensitisation into stress inoculation, in which people are exposed to stressful situations step-by-step, not only allowing them to get used to the situation and perceive it as less threatening, but also offering them an opportunity to develop specific coping skills and therefore to feel more confident about their ability to deal with the threat.
    - 3 stages involved in the process-
        - Conceptualisation phase- where a relationship is built between the trainer and the client. The trainer talks to the person about their stress experiences such as how they would normally cope with stress. Negative thought patterns are identified. Educated about stress and coping techniques.
        - Skill acquisition and rehearsal- this is when the elements from stage 1 have been taught and clients have to put them into practice. The skills are initially practised with the trainer in the clinic but then clients are encouraged to try them in the real world. Some of the mechanisms could include relaxation training, cognitive restructuring, interpersonal communication skills and using social support to help clients in times of need.
        - Application and follow-through phase- this is when there are new opportunities for clients to apply all of the coping skills to increasing levels of stressors. Additional techniques such imagery, modelling, role playing and rehearsal are used in the form of 'personal experiments' so that the clients can show that they can

cope with any level stressor. These help to consolidate the skills they have already learnt. They are also given follow-up booster sessions to ensure the entire process is working.

- Technique is flexible and simple.
- Uses cognitive strategies and behavioural techniques...so holistic and effective.