Stress is a state of psychological and physical tension produced, according to the transactional model. Stress is believed to account for high levels of anxiety and depression. Stress may be also defined as a physiological reaction that affects the autonomic nervous system (ANS), causing changes in arousal, hormone secretion and general physiological alertness. Perhaps the most important early contributor to attempt to explain stress related illness was Selye. He carried out research investigating the effects on animals of a range of stressors such as heat, cold, infections of organic substances and surgery. Selye (1950) defined stress as "the non-specific response of the body to any demand". In other words stress is generalised reaction to a demand placed in the body. Interestingly, the term "stress" had not been used in relation to behaviour until Selye (1936) suggested using it to describe what happened when an organism was exposed to a noxious (unpleasant) stimulus.

By the 1980's it was generally accepted that stress could have various effect on people, including making them more vulnerable to physical illness and psychological disorders. There is good evidence that stress can directly produce changes in the immune system, and there is also reasonable evidence that stress can directly increase the probability that individuals develop various physical illnesses. Kiecolt-Glaser (1984) studied human responses to stress and how the immune system can be affected to try to establish a link between conditions of high and low stress. They decided to use examinations as the high stress condition. They took blood samples from medical students. Samples were taken one month before their final examinations and again on the first day of their final examinations, after the students had completed two of their examinations. A key finding was that natural killer cell activity declined between the two samples. This finding suggests that stress is associated with a reduced of the

immune system. Cohen (1993) demonstrated that stress reduces efficiency of the immune system. To investigate the link between them he asked 394 healthy individuals to complete a questionnaire that indicated how stressed they perceived themselves to be. Each participant was given a stress index. The participants were then exposed to low doses of the common cold virus. One third of them developed a cold and infection was highly correlated with their index score; the higher the stress index, the more likely they were to develop a cold. This study suggests that high levels of stress reduce immune function and make a person more vulnerable to viral infection. As recently as the 1950s, there was little scientific evidence to suggest that physical illnesses such as heart disease might be influenced by psychological factors. Many people suspected that there was a link between stress and CHD. It was in this context that two cardiologists, Meyer Friedman and Ray Rosenman carried out their research to show that heart disease depends on individual differences in vulnerability to stress. Friedman and Rosenman introduced a new “typology” to psychology in the 1950’s. They proposed that there were three personality types: type A are competitive, ambitious, impatient, restless, and pressured. Type B has lack these characteristics are is generally more relaxed. Types Cs are nice, industrious, conventional, sociable but tend to be repressed and react to stress or threat with a sense of helplessness. Early research findings showed a clear relationship between Type A behaviour and coronary heart disease. Strong evidence came from the Western Collaborative Group Study (WCGS) (Rosenman 1964), which was a prospective long-term study using the Structured Interview (SI) to assess Type A Behaviour (TAB) in more than 3,000 white middle-class males in non-manual occupations. When recruited into the study, none of the participants showed any signs of CHD. The participants were then followed up for eight and a half years during which time men who were classified as

type ‘A’ were found to be twice as likely to develop CHD than those categorised as type ‘B’. Other research has looked at a possible link between Type C and cancer. Morris (1981) proposed that the likelihood of developing cancer may be related to Type C behaviour, because such individuals tend to deal with stressful events by repressing their emotions. To study this, Morris interviewed 50 women being tasted to see if a breast lump was malignant (cancerous) or benign (non-cancerous). The patients were assessed to determine their typical patterns of emotional behaviour using questionnaires and interviews. Morris found that those found to have a malignant lump had reported that they both experienced and expressed far less anger than those with a benign tumour. This supports the idea of a link between cancer and the suppression of anger. Emotional suppression is associated with increased stress, lowered effectiveness of the immune system and illness. Supporting evidence was given in a study by Thomas and Duszynski (1974) who followed 1000 medical students over 15 years, finding that those who developed cancers also reported less family closeness. This may be due to stress, because people with poor social support system suffer greater stress.

According to Kobasa (Kobasa and Maddi), the concept of hardiness (or the hardy personality) is central of understanding why some people are vulnerable to stress and some resistant. Hardiness includes a range of personality factors that, if present, provide defences against negative effect of stress. These factors are: commitment- including people who are more involved in what they do and have a direction in life. Control is the belief that you have control over what happens in your life. Another factor is challenge, which tells that challenges should be overcome or seen as opportunities, rather than as threats and stressors. Kobasa has presented evidence that people who have high scores on scales measuring hardiness are significantly less

likely to suffer stress-related physical and psychological disorders than those with low hardiness scores. In theory, their positive approach means that life events are not seen as stressful, but as challenges and opportunities that can be overcome.

There are evidences that women's reaction on stress is different than men's. Women's responses are "tend and be friend", because they are actively seeking social support from others. Men react with the "fight or flight" what makes them to be more likely harmed by stress. The gender difference could be also down to a hormone—oxytocin. Oxytocin is released during the stress response, making people feel less anxious and more sociable. Its effects are increased by oestrogen but decreased by male hormones Stone (1990) found that women shoed smaller increases in blood pressure than men when performing stressful tasks. In similar fashion, Frankenhaeuser (1976) found that boys showed a faster increase in stress hormones than did girls when taking an examination. In addition, the level of stress hormones returned to normal faster in girls than in boys. There are other important physiological differences between men and women. Another evidence for gender differences with coping with stress comes from Hastrup, Light and Obrist (1980) who tested women's cardiovascular (heart) reactions. The women had lowered stress responses when their oestrogen levels were highest. These suggest that the hormone oestrogen may have helped them to cope. So far as life style is concerned, men used to much more likely than women to smoke and drink heavily (Ogden, 2000). For example, in the UK in 1992, nearly 30% of men were found to be heavy drinkers of alcohol compare to just over 10% of women. These responses to stress both have the effect of shortening life expectancy.

Coping with stress means using thoughts and actions to deal with stressful situations and lower our stress levels. Many people have a characteristic way of coping with stress based on their personality. People who cope well with stress tend to believe they can personally influence what happens to them. They usually make more positive statements about themselves, resist frustration, remain optimistic, and persevere even under extremely adverse circumstances. Most importantly, they choose the appropriate strategies to cope with the stressors they confront. Conversely, people who cope poorly with stress tend to have somewhat opposite personality characteristics, such as lower self-esteem and a pessimistic outlook on life. Coping with stress can be difficult. It takes time and effort to find new strategies and it can be very hard to overcome the effects of past experience- but a wide range of successful therapies for the treatment of stress is now open to people. Coping with stress-biological approaches. These methods of dealing with stress focus on ways to minimise and control the body's alarm reaction by direct intervention in the body's chemistry. These methods are appropriate for people in acute stress states or those who need rapid treatment because they may be vulnerable to heart attack, stroke or blood pressure problems. Drug treatments may include the use of anti-anxiety drugs, such as benzodiazepines (BZs). Benzodiazepines are also known as 'tranquillizers'; examples are Valium, Librium and Mogadon. These drugs can reduce general arousal and anxiety levels and also help to treat insomnia. There is a danger that people may develop dependence on these drugs. Another biological approach is biofeedback**.** Biofeedback is a technique in which people learn voluntary control of stress-related physiological responses, such as skin temperature, muscle tension, blood pressure, and heart rate. Normally, people cannot control these responses voluntarily. In biofeedback training, people are connected to an instrument or machine that measures

a particular physiological response, such as heart rate, and feeds that measurement back to them in an understandable way. For example, the machine might beep with each heartbeat or display the number of heartbeats per minute on a digital screen. Next, individuals learn to be sensitive to subtle changes inside their body that affect the response system being measured. Gradually, they learn to produce changes in that response system—for example, to voluntarily lower their heart rate. Typically individuals use different techniques and proceed by trial and error until they discover a way to produce the desired changes. The simplest psychological approaches to reducing the symptoms of stress are relaxation and meditation techniques. Progressive relaxation was devised by Jacobson (1938) from the observation that people experiencing stress tend to add to their discomfort by tensing their muscles. In this technique, the muscles in one area of the body are first tightened then relaxed. Then another group of muscles is tightened and relaxed and so on - until progressively, the whole body is relaxed. The aim is for the individual to learn to differentiate between feelings of tension and relaxation and so stress-induced tension can be controlled. Another relaxation technique is meditation. The principle behind this technique is to empty the mind using exercises such as chanting a single syllable mantra, regulating breathing and practising yoga positions. The result is a mild change of consciousness in which the individual experiences a pleasant state of physical and psychological relaxation and, with practice, can experience a loss of personal identity. Both progressive relaxation and meditation reduce blood pressure, heart rate, breathing and muscle tension. Meditation can be used to reduce stress and combat immediate stressful situations Wallace and Fisher (1987). Stress Inoculation Training (SIT) is a form of cognitive restructuring as it is a method of changing an individual's thinking patterns about themselves and their lives. The aim is to change their emotional

responses and their behaviour ideally before the individual becomes very anxious or depressed as a result of stress. Developed by Meichenbaum in the 1960s it is a three-stage procedure carried out with the help of a therapist. It is based on the assumption that people experience stress because they interpret an event or situation in catastrophising ways and their internal dialogue (their thoughts) are negative. The first stage of SIT is called 'conceptualisation'. The therapist helps the individual to identify their stressors and how they respond to these and how successful these responses have been. Patterns of self-defeating internal dialogue are identified. The second stage is 'skill acquisition and rehearsal'. The therapist helps the individual to develop and practice positive coping statements to be used in stressful situations. Other techniques such as relaxation and making a realistic appraisal of situations are also practised in the third stage 'application and follow-through' the individual begins to apply the newly acquired skills to progressively more difficult situations in the real world. The therapist provides support and further training when necessary.

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